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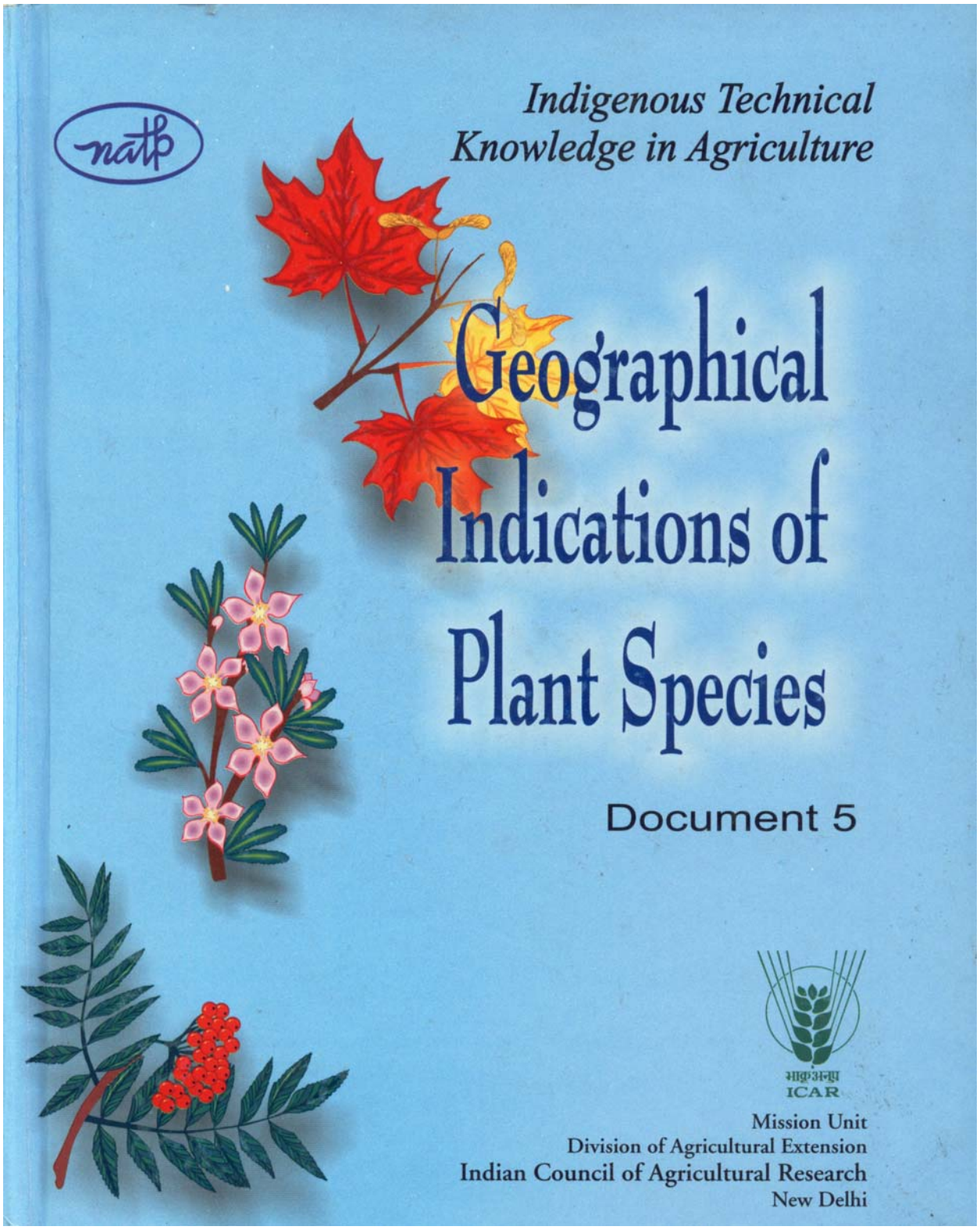


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# Geographical Indications of Plant Species in ITKs in Agriculture

**Mission Mode Project on**
**Collection, Documentation and Validation of**
**Indigenous Technical Knowledge**

## Document 5


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**INDIAN COUNCIL OF AGRICULTURAL RESEARCH**
**NEW DELHI**


**Contents**

PRINTED DECEMBER 2004



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**Published by Dr P Das, Deputy Director-General (Extn.), Indian Council of Agricultural Research, New Delhi; Laser typeset by Xpedite Computer Systems, B-587, 2nd Floor, Pandav Nagar (Opp. Naraina Bus Depot), New Delhi 110 008; and printed at Royal Offset Printers, A-89/1, Naraina Industrial Area, Phase I, New Delhi 110 028**

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# Foreword

INDIAN agriculture is at present confronted with a number of challenges including instability of productivity and diminishing sustainability of natural resources. These issues have evoked growing interest in the study of indigenous knowledge systems that are based upon the local resources. The Council initiated the Mission Mode Project on 'Collection, Documentation and Validation of Indigenous Technical Knowledge (ITK)' under NATP. The outcome of the project has already been documented in the form of Document 1, 2 and 3. A large number of plant species are used in crop production, plant protection and post-harvest operations. Besides, production system in animal husbandry, fishery and household food and nutrition management involve use of various plant species. Keeping in view the need for development of appropriate technology by the scientists and its diffusion by the change agents, the knowledge on various aspects of the plant species including their habitats, characteristics and active ingredients is of paramount importance for its further use. Geographical indications is one of the laws of protecting intellectual property right.

I appreciate the efforts made in compilation of such information and bringing out publication entitled *Geographical Indications of Plant Species in ITKs in Agriculture* under the Project. I am delighted to see the compilation of the geographical indications of 228 plant species covering the thematic areas of pest and disease management, grain/seed storage, horticultural crops, veterinary science and animal husbandry, fishery, and ethno-botany and agro-biodiversity.

I compliment Dr P. Das and his team for this endeavour that will go a long way not only in strengthening the agricultural science and technology but also empowering fanning community and nation in protecting intellectual property rights' pertaining to the practices-based on indigenous knowledge.

I am sure that this document would be useful to identify the origin of the plan repcies used and to describe and retrieve in the context of the ITKs. The geographical indication would also be useful for all those who are directly or indirectly engaged in espousing cause of sustainable development in agriculture including issues related to food and nutritional security, protection of environment and intellectual property rights for future generation.

(MANGALA RAI)
*Secretary*
*Department of Agricultural Research and Education*
*and*
*Director-General*
*Indian Council of Agricultural Research, New Delhi*

*New Delhi*
*15 December 2004*

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# Introduction

GEOGRAPHICAL indications, the context of plant species used in indigenous knowledge-based technologies, indicate the origin of the species in a territory or region or locality, where the characteristics of the plants are attributed to the origin. When associated with a product, geographical indications attribute a known quality of the product that in associated with a specific geographical location. One of the ways to protect the appropriate use of geographical indications, it is to be known commonly and documented and placed in the public domain.

A large number of plant species are used in Indian agriculture for crop production, plant protection and post-harvest operations. In addition, production system in animal husbandry, fishery and household food and nutrition involves the use of various plant species. This has been made evident in the publications made under the National Agricultural Technology Project (NATP) on Collection, Documentation and Validation of Indigenous Technical Knowledge (ITK).

Accordingly it was thought appropriate to document the geographical indications of the plant species which are in use in indigenous knowledge-based practices that may help in development of appropriate technologies. Further, the knowledge of the plant species and its functioning capabilities in promoting productivity of agricultural and land-based activities will go a long way in rationalization of the practices, adoption and diffusion of the technologies. The outcome of the project also indicated the possibility of registration/patenting of some of the practices that may protect the intellectual property rights of the practices. A geographical indication is one of the laws in this direction.

The document provides information on geographical indications of 228 plant species covering the names in local and Indian languages, besides, English; habit and habitats; active ingredients and therapeutical qualities of the plant species. The thematic areas covered include pest and disease management, grain storage, horticultural crops, veterinary sciences and animal husbandry, fishery, ethno-botany and agro-biodiversity and weather forecasting. The geographical indications of the plant species have been indicated with reference to the code numbers and titles of the ITKs as cited in the Documents 1 and 2 and 2 supplements of Document 2 which have been published earlier under the aegis of the project. Botanical names of the plant species for which the geographical indications have been documented have been given alphabetically in a separate chapter. This document is a compilation of information for which published books and website have been consulted, and have been indicated in the references cited in the Document.

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# Preface

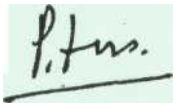
THE Indian Council of Agricultural Research (ICAR) launched a Mission Mode project on 'Collection, Documentation and Validation of Indigenous Technical Knowledge (ITK)' under National Agricultural Technology Project (NATP). The inventory of ITKs published in four volumes under this project in the form of Document 1 and 2 with two Supplements (Supplement 1 and 2) of Document 2, includes the use of a large number of plant species in various forms in different ITKs. Knowledge on various aspects of the plant species which are use in ITKs with respect to their geographical indications including names, habitat, botanical parameters, active ingredients and therapeutical qualities is essential for their further experimentation and validation to determine the efficacy of the ITKs.

The geographical indicators of 228 plant species which were found to be in use in the ITKs documented in project covering agriculture, animals husbandry, fisheries and other land-based activities, have been compiled in this volume entitled 'Geographical Indications of Plant Species in ITKs in Agriculture'. The description of the plant species has been indicated with reference to the Code numbers and Titles of the ITKs as referred in Document 1 and 2 and two supplements (Supplement 1 and 2 of Document 2). Each plant species has been given its identification in the form of botanical name and local names in different Indian languages, besides English. The information on active ingredients of the plant species discussed in other literature have been included, citing the sources of information.

While the publication would be useful for the users for better understanding of functioning of the ITKs and its extrapolation in places where the ITK may not be in practices but the plant materials are available, the document can also be appropriately used to protect the intellectual property of the ITKs.

We are extremely grateful to Dr Mangala Rai, Secretary (DARE) and Director General (ICAR) for his constant encouragement in implementing the project. The support received from Dr J.C. Katyal, National Director (NATP), Dr S.L. Mehta, Former National Director (NATP) and Dr K.P. Agrawal, National Coordinator (MM) is acknowledged. The cooperation received from Directorate of Information and Publications in Agriculture (DIPA) in bringing out this Document in a very short time is appreciated.

The compilation of this document has been possible by active and painstaking efforts of the project personnel in completion of the task, who deserve applause for their efforts. The assistance received from Shri Sanjay Kushwaha, Technical Officer, ZC Unit, Jabalpur, Shri Vikas Jain and Ms Gigi Annee Abraham, both Research Associates and Ms Seema Naberia, Senior Research Fellow of the Lead Centre in compiling this Document is appreciated.



(P DAS)
*Deputy Director-General (AE)*
*and Mission Leader*

*New Delhi*
*15 December 2004*

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# PEST AND DISEASE MANAGEMENT

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|---|---|
| **Code** | **139** |
| **Title of the ITK** | **Pest management in paddy** |
| **Reference of the ITK*** | Volume 2, page 109 |
| **Names of the plants used in ITK** | Chilli and tobacco |
| **Names in Indian languages** | **Chilli:** Bengali: *dhanilanka, lalmorich, lanka, morich;* Gujarati: *lalmarchan, marchan;* Hindi: *gachmarich, lalmirich;* Kannada: *menasinakaayi;* Dogri: *marchawangun;* Malayalam: *chalie, chuvanna mulaku, kappalmulaku, milagu;* Marathi: *mirchi;* Oriya: *lalmoricho, lankamoricha, moricho;* Tamil: *mulagay, usimulagay;* Telugu: *soodimirapakaaya.*<br><br>**Tobacco:** Bengali, Gujarati, Hindi and Marathi: *tamaku, tambaku;* Kannada: *hogesoppu;* Malayalam: *pokala;* Tamil: *pugaiyilai;* Telugu: *pogaku.* |
| **English names** | Chilli: chilli; tobacco: tobacco |
| **Botanical names** | Chilli: *Capsicum annuum* Linn.<br><br>Tobacco: *Nicotiana tobacum* Linn. |
| **Active ingredients** | **Chilli:** Capsicum extract or juice strongly inhibits the viruses, causing mosaic diseases of papaya, potato and tobacco. The methanolic extract of fruits inhibits the germination of spores of *Venturia inaequalis* (Cooke) Wint., which causes scab disease of apple fruits. The extract of fruits and seeds inhibits the seed germination of radish, onion, turnip and garden cress.<br><br>**Tobacco:** The bulk of tobacco produced in India is used for smoking in the form of cigarette, *bidi*, cigar, cheroot, *chuttas* and in pipe and hookah. It is used as a sedative, anti-spasmodic and vermifuge and in the treatment of various gastro-intestinal disorders, skin diseases and local affection. |
| **Geographical indications**<br><br>  <br>Habit | **Chilli:** A suffrutescent or herbaceous, short-lived perennial, (cultivated as annual) up to 1 m in height, cultivated throughout India from sea level up to an altitude of 2,100 m. Leaves oblong, glabrous; flowers solitary, rarely in pairs, pure white to bluish-white, very rarely violet; berries green, maturing into yellow, orange to red grading into brown or purple, pendent, rarely erect, very variable in size, shape and pungency, sometimes lobed, seeds white or cream to |

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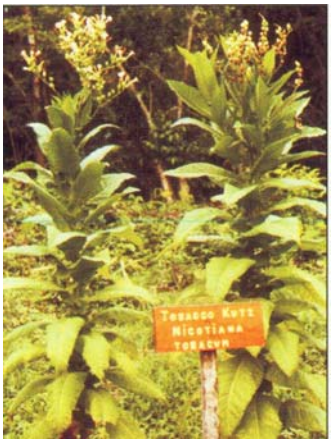
yellow, thin, almost circular, having long placental connections. Chilli was introduced into India by the Portuguese. It is used as a condiment in large quantities in India.



**Tobacco:** A stout viscid annual, 1-3 m high, with thick branches; leaves ovate, elliptic or lanceolate, up to 100 cm or more in length, usually sessile or sometimes petiolate with frilled wing or auricle; inflorescence a panicle with distinct rachis and several compound branches; flowers light red, white or light pink in colour; fruit a capsule, narrowly elliptic ovoid or orbicular, 15-20 mm long; seeds spherical or broadly elliptic, 0.5 mm, long, brown with fluted ridges. It is said to be unknown in the wild state at present. It is believed to have been in cultivation in pre-Columbian times in West Indies, Mexico, Central America and northern parts of South America. It is reported to have been introduced into India by the Portuguese sometimes in the beginning of seventeenth century and its cultivation seems to have been soon taken up in earnest. It was first grown for commercial purposes in Gujarat and Maharastra. The important tobacco-cultivated areas in India lie in Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Tamil Nadu, Uttar Pradesh, Bihar and West Bengal.

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|---|---|
| **Code** | **353** |
| **Title of the ITK** | **Control of stem-borer and mosquito larvae** |
| **Reference of the ITK*** | Volume 2, page 111 |
| **Name of the plant used in ITK** | Cashewnut |
| **Name in Indian languages** | Bengali: *higli-badam, kaju;* Gujarati and Hindi: *kaju;* Kannada: *gera-bija, jidi-vate, kempu geru bija;* Malayalam: *andiparuppu* (kernel), *kashumavu* (tree), *kashunandi, kashuvandi* (nut), *paranki mavu;* Marathi: *kaju, kaju die bi;* Tamil: *mundiri kottai;* Telugu: *jidi antijidi mamidi vittu, munta mamidi vittu.* |
| **English name** | Cashew: cashewnut |
| **Botanical name** | *Anacardium occidentale* Linn. |
| **Active ingredients** | The buds and young leaves are used as a vegetable as well as a green-manure. The alcoholic extract of the leaves shows hypoglycaemic activity in albino rats and it also possesses |

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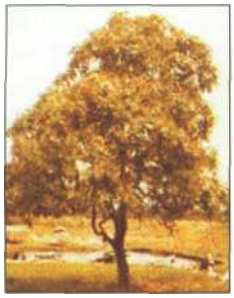
anti-cancer activity against hepatoma-129 in mice. The resinous juice contained in the seeds is used in cases of mental derangement, sexual debility, palpitation of the heart and rheumatic pericarditis. It is found useful in cases of loss of memory as a sequel to small pox. The cashew kernels and cashew-shell oil are the major items of export.

**Geographical indications**



Habit

A small, spreading, evergreen tree, sometimes reaching a height of 12 m, native to tropical America, and naturalized in the warmer parts of India especially near the sea. Leaves obovate or obovate-oblong, hard, glabrous, obtuse-retuse or rounded at tip, cuneate at base, 10-20 cm long; flowers small, yellow, with pink stripes, borne in 15-25 cm long, terminal panicles, with both staminate and hermaphrodite flowers; fruit a kidney-shaped nut, 2.5 cm long, borne on a 5.0-7.5 cm long, pyriform, fleshy receptacle, the cashew apple, having a thin bright yellow to scarlet skin and soft and juicy flesh. The nut is greyish-green with a hard, smooth and shining oleaginous pericarp enclosing a curved white kernel, covered with a thin reddish brown testa. The cashew was introduced into India by the Portuguese in the latter half of the 16th century. It grows wild along the East and West Coasts of South India, as far north as Ratnagiri on the West Coast and Mahanadi delta on the East Coast. It has become acclimatized in south India in the forest regions along West Coast. In South Kanara, it grows extensively in wild state, mixed with mango and other forest trees and shrubs, all along the hill slopes where, owing to poor soil and the exposed situation, it attains a low bush form. It is densely scattered over the low hilly regions of Goa. On East Coast it is abundant in Thanjavur, South Arcot, Chingleput, Nellore, Guntur, Godavari and Visakhapatnam districts. It is planted in Orissa near the coast and has run wild in some parts of the Mahanadi delta.

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| **Code** | **357** |
| **Title of the ITK** | **Control of insect-pests in lowland rice using Cleistanthus collinus** |
| **Reference of the ITK*** | Volume 2, page 112 |
| **Name of the plant used in ITK** | *Cleistanthus collinus* |
| **Names in Indian languages** | Bengali: *karlajuri;* Hindi: *garari,* Kannada: *badedarige;* Tamil: *nilaippalai, oduvan;* Telugu: *kadishe* |

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|---|---|
| **Botanical name** | *Cleistanthus collinus* (Roxb.) Benth. & Hook. f. |
| **Active ingredients** | The active principle present in leaves is oduvin, a yellowish white crystalline glucoside. |
| **Geographical indications** | A small deciduous tree, distributed from the Deccan peninsula northwards up to the Ganges. It thrives well on dry rocky ground. The capsules (fruits) are more or less globose, 3-valved, 3-seeded, brown and shining. The seeds are globose and chestnut-brown in colour. |

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| **Code** | **359** |
| **Title of the ITK** | **Control of paddy leaf-folder by using bamboo shoots or sprouts** |
| **Reference of the ITK*** | Volume 2, page 112 |
| **Name of the plant used in ITK** | Bamboo |
| **Names in Indian languages** | Assamese: *bnah, kotoha;* Bengali: *bans, behar, katausi;* Gujarati: *wans;* Hindi: *kanta bans;* Kannada: *andebidiru, habbidiru;* Dogri: *billawar;* Malayalam: *Mi, mulla;* Marathi: *bambu, mandga;* Oriya: *bendo, kontobanso;* Sanskrit: *bahupallava vansa;* Tamil: *mullu-mungil, mungil;* Telugu: *mullabongu, mullavendru, pentiveduru.* |
| **English name** | Spiny or thorny bamboo |
| **Botanical name** | *Bambusa arundinacea* (Retz.) Roxb. |
| **Active ingredients** | The young sprouts are cooked as vegetable. The tender shoots are pickled or steeped in oil for direct consumption or made into curries. They promote appetite and help in digestion. The young twigs are also eaten by elephants and buffaloes. The leaves are emmenagogue, anthelmintic, astringent and febrifuge. Mixed with black pepper and common salt, they are used to check diarrhoea in cattle. They are also given to horses as a remedy for cough and cold. The leaves are reported to be palatable and are used for livestock rations in the hilly areas during the lean winter months. The seeds are a reputed food during famine. In their over-all nutritive value, the seeds excel both rice and wheat. The stems and leaves are used in the Ayurvedic system of medicine as blood purifier, in leucoderma and inflammatory conditions. An infusion of the leaves is used as an eye-wash. It is also given internally for bronchitis, |

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gonorrhoea and fever. The root is poisonous, as it contains a cyanogenic glucoside; it also contains albuminoids. In the indigenous system of medicine, the burnt roots are applied for ringworm, bleeding gums and painful joints.

**Geographical indications**

A graceful, spinous bamboo, distributed throughout the moist parts of India, up to an altitude of 1,250 m, particularly near river banks; also cultivated in the plains of North-west India, and on the hills of Andhra Pradesh, Tamil Nadu and Karnataka. It flowers gregariously once in 30-45 years. Rhizomes short, stout, knotty; culms dense, reaching 24-30 m in height and 15-17 cm in diameter, green, hollow, purplish-green when young, turning golden yellow, with prominent nodes and long internodes, lower ones rooting, often sub-angular, flexuous; leaves linear or linear-lanceolate, 7-18 cm x 2-20 mm; flowers in large panicles, sometimes occupying the whole culm; caryopsis oblong, 5-8 mm long, grooved on one side. The plant is very common in the moist deciduous forests and along streams and water courses, and forms impenetrable thickets, extending over vast areas. Though it prefers moist localities, it is not particular about the soil and tolerates even clayey and inundated soils. The best growth is found on alluvial soils along streams.

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| **Code** | **367** |
| **Title of the ITK** | **Traditional practice of controlling insect pests in lowland rice** |
| **Reference of the ITK*** | Volume 2, page 113 |
| **Name of the plant used in ITK** | *Cleistanthus collinus* |

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| **Code** | **368** |
| **Title of the ITK** | **Management ofgandhi (harmful green algae) in paddy field by karada {Cleistanthus collinus) leaves** |
| **Reference of the ITK*** | Volume 2, page 113 |
| **Name of the plant used in ITK** | *Cleistanthus collinus* |
| | Refer to ITK Code No.357 |

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|---|---|
| **Code** | **474** |
| **Title of the ITK** | **Use of different methods to control rice pests** |
| **Reference of the ITK*** | Volume 2, page 114 |
| **Names of the plants used in ITK** | *Colocasia, Citrus, Calotropis,* jackfmit, *Eupatorium.* |
| **Names in Indian languages** | **Colocasia:** Bengali: *kachu;* Hindi: *arvi, kachalu, ghuiya;* Kannada: *kachchi, shamagadde;* Malayalam: *shembu;* Marathi: *Alu;* Oriya: *Sam;* Sanskrit: *kachu;* Tamil: *seppan-kizhangu;* Telugu: *chamadumpa, chemagadda.*<br><br>**Citrus:** Assamese: *rabab-tenga;* Bengali and Hindi: *chakotra, mahanibu, sadaphal;* Gujarati: *chakotru;* Kannada: *chakotre, sakkota;* Malayalam: *bamplimas;* Marathi: *panis, papnasa;* Tamil: *pambalimasu;* Telugu: *pampalamasam.*<br><br>**Calotropis:** Bengali: *akand, gurtakand, swetakand;* Gujarati: *akado;* Hindi: *ag, ak, akand, ark, madar;* Kannada: *arka, lakkedagide;* Malayalam: *erukku, vellerukku;* Marathi: *akand, lal, akra, lal madar;* Oriya: *akondo, kotuki;* Sanskrit: *aditya, arka, mandara;* Tamil: *erukkam, verukku;* Telugu: *jilleedudoodi* (floss), *mandaramu, nallajilleedu.*<br><br>**Jackfruit:** Assamese: *kathal;* Bengali: *kanthal;* Gujarati and Marathi: *phanas;* Hindi: *kanthal, kathal, panasa;* Kannada: *halasu, hebhalasu;* Malayalam: *chakka* (fruit), *pilavu* (tree); Oriya: *ichodopholo, kantokalo, ponoso;* Sanskrit: *ashaya, atibrihatphala, panasa, phanasa;* Tamil: *murasabalam, pala, pila, pila palam;* Telugu: *panasa, verupanasa;* Urdu: *kathal.*<br><br>**Eupatorium:** Assamese: *assam lota.* ***Colocasia:*** |
| **English names** | taro, dasheen, eddo, cocoyam ***Citrus:*** forbidden<br><br>fruit, pummelo, shaddock<br><br>***Calotropis:*** bowstring hemp, gigantic swallowwort, *madar,* milkweed<br><br>***Jackfruit:*** jackfruit, jack |
| **Botanical names** | Colocasia: *Colocasia esculenta* (Linn.) Schott<br><br>Citrus: *Citrus grandis* (Linn.) Osbeck<br><br>Calotropis: *Calotropis gigantea* (Linn.) Ait. f. |

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Jackfruit: *Artocarpus heterophyllus* Lam.

Eupatorium: *Eupatorium odoratum* Linn.

**Active ingredients** : *Colocasia:* The leaves and petioles are said to be a good source of provitamin A and vitamin C. The pressed juice of the petioles is used as a styptic or astringent. The presence of a sapotoxin in the tubers has been reported.

*Citrus:* The pink-fleshed fruit is eaten by the local people in the area of production. The fruit is also used for culinary and medicinal purposes. A liquor is prepared from the fruit. The peel is candied or preserved in syrup. The leaves are used for seasoning meat and fish preparations in the Philippines.

***Calotropis:*** The leaves are used as green-manure for betelnut, paddy and wheat; they are reported to correct alkalinity in soil. Three to four pluckings of leaves can be obtained from a plant per year; compost can also be made out of it. The flowers possess digestive and tonic properties, and are useful in cough, cold, catarrh and asthma. The seeds are rich in essential amino acids.

***Jackfruit:*** Jackfruit is essentially a carbohydrate food and therefore useful as a source of energy. The perianths are rich in sugars; a fair amount of carotene is also present but they are poor in vitamin C. They contain protein, fat, calcium, phosphorus and iron in quantities normally present in other fruits. The seeds are mostly starchy and contain fair amounts of protein, calcium and thiamine and have good pectin content. They have average jellying properties. A dipeptide, aurantiamide acetate, has been isolated from the seeds. Jackfruit with its many and varied uses is a favourite fruit, particularly in south India. The fruiting perianths (bulbs) have a strong, sweet, aromatic odour, fine texture and a rich appetizing taste. In the form of shreds they are eaten as such or are used as an ingredient of icecream, cadies, and other desserts. The comparative suitability of hill-grown and plain-grown timber expressed respectively as the percentages of the same properties of teak. Bark yields a cordage fibre. The leaves are used as fodder, and seem to be particularly relished by goats. The unripe fruit is acrid, astringent, carminative and tonic. The ripe fruit is laxative, cooling, fattening and useful in biliousness. The seeds are diuretic. The leaves are used in

skin diseases. Ash of the leaves is useful in healing ulcers. The juice of the plant is applied to glandular swellings and abscesses to promote suppuration. The root is said to be useful in skin diseases, asthma and diarrhoea.

**Geographical indications**

*Colocasia: A* perennial tuberous plant, with large, heart-shaped leaf-blades, borne on long petioles $1^{1}/_{2}$ -7 ft high, arising from a group of underground farinaceous corms. The plant is considered to be a native of south-eastern Asia. It is also cultivated in many areas up to an elevation of 8,000ft.

***Citrus:*** *A* spreading, round-topped, almost thornless tree, indigenous to Malaysia and Polynesia but fairly common in the north-eastern region up to 1,500 m in Assam, Tripura and foot-hills of the region. It is not commercially grown in India except in certain localised regions. It is grown as a popular homeyard fruit in south India. Leaves large, ovate-oblong to elliptic, rounded or acuminate, petiole broadly winged and pubescent, cordate; flowers large, crowded in short axillary racemes, white; fruits large, turbinate, light yellow to orange, rind very thick, white, spongy, smooth, gland-dotted, segments large, 11-14, covered with thick leathery septa, juice vesicle long, tapering, pulp light pink, rose, white or light yellow; seeds numerous, yellowish white, large, flattened or wedge-shaped.

***Calotropis:*** A much-branched, hardy, erect, woolly shrub, 1-5 m in height, native to India, found growing up to an altitude of 900 m throughout India including the Andamans. Stems woody, round, tender ones covered with soft, loosely appressed, whitish, waxy or sometimes powdery pubescence; bark thick, light yellow or ash-grey, soft, corky, deeply fissured; leaves fleshy, cuneate-obovate or obovate-oblong, with a narrow cordate or often amplexicaule base, 10.0-20.0 cm x 2.5-7.5 cm, smooth above, cottony below; flowers lilac or pale rose or purple, rarely light greenish yellow or white, in simple or compound cymose-corymbs; follicles 2 or 1, fleshy, recurved, 7-10 cm long; seeds brown, numerous, broadly ovate, flattened with 2.5-3.2 cm long, white, tuft of silky hair at the pointed end. It occurs almost throughout India from Punjab and Rajasthan in the north to Kanniyakumari in the south, extending into West Bengal and Assam in the east.

***Jackfruit:*** *A* large, evergreen tree, 10-15 m in height, indigenous to the evergreen forests of the western ghats at altitudes of 450-1,200 m, and cultivated throughout the hotter parts of India. Stem straight, cylindrical, covered with smooth or slightly rough bark; bark green or black, 1.25 cm thick, exuding milky latex; leaves broad 5-25 cm x 3.5-12 cm, obovate-elliptic to elliptic, decurrent, glabrous, entire; inflorescence solitary axillary, cauliflorous and ramiflorous on short leafy shoots, male heads sessile or on short peduncled receptacles, sometimes borne on the ultimate twigs, female heads on oblong ovoid receptacle with simple spathulate styles excerted to 1.5 mm; syncarp, 30-100 cm x 25-30 cm, cylidric or somewhat clavate, yellow, drying to brown with a strong sweet odour, covered with closely set, firm, tapering, obtuse, minutely hispid processes; fruiting perianths numerous, proximal free region yellow, markedly fleshy, firm, with a thickened stalk, remaining attached to wall and core; 'seeds' (separated horny endocarps enclosed by sub-gelatinous exocarps 1 mm thick) oblong-ellipsoid, 30 x 15-20 mm. Jackfruit is one of the most popular fruits in south India. In Uttar Pradesh the eastern districts of Gorakhpur and Deoria are best suited for its cultivation.

*Eupatorium:* It is coarse, often straggling shrub, bearing exceedingly small, numerous, fragrant flowers and an abundance of seeds which are easily dispersed by wind. It is an obnoxious weed in the sub-Himalayan plains and foot-hills, covering extensive areas in Assam and Bengal and interfering with the natural regeneration of timber trees in plantations.

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| **Code** | **480** |
| **Title of the ITK** | Use of pummelo *{Citrus grandis)* and siam weed for hispa control in paddy |
| **Reference of the ITK*** | Volume 2, page 117 |
| **Names of the plants used in ITK** | Pummelo and *siam* weed |
| | Refer to ITK Code No. 474 |

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| **Code** | 702 |
| **Title of the ITK** | **Herbal pesticides for control of insect-pests in wheat and rice crop** |
| **Reference of the ITK*** | Volume 2, page 117 |
| **Names of the plants used in ITK** | *Vitex*, asafoetida |
| **Name in Indian languages** | **Vitex:** Assamese: *pasutia, aggla-chita;* Bengali: *nisinda, samalu, nirgundi;* Gujarati: *nagoda, nagaol;* Hindi: *sambhalu, shambalu, shivari, nisinda;* Marathi: *nirgundi, nisind, nigudi;* Oriya: *beyguna, begundia, mirgundi;* Punjabi: *banna, marwan, shwari;* Tamil: *vellainocohi, nirkkundi, venmochi;* Telugu: *vaavili, tellavaaviti.*<br><br>**Asafoetida:** Bengali, Gujarati, Hindi, Kannada & Marathi: *Hing;* Dogri: *Yang;* Malayalam & Tamil: *Perungayam;* Oriya: *Hengu;* Sanskrit: *Balhika, hingu;* Telugu: *Inguva, ingumo.* |
| **English name** | **Vitex:** Vitex<br><br>**Asafoetida:** Asafoetida |
| **Botanical name** | **Vitex:** *Vitex negundo* Linn.<br><br>**Asafoetida:** *Ferula asafoetida* Linn. |
| **Active ingredients** | **Vitex:** A decoction of leaves, with the addition of long pepper, is given in catarrh fever, with heaviness of the head and dullness of hearing. A decoction of leaves and the vapours are employed in baths for the treatment of febrile, catarrh and rheumatic affection. A decoction of the leaves was found to prevent the development of swelling of joints in the experimental arthritis in adult albino rats, caused by formaldehyde injection. The juice of leaves is said to be used for the treatment of foetid discharges. The leaves are reported to possess insecticidal properties and are laid over stored grain to ward off insects. The extract of leaves and twigs showed anti-bacterial activity against *Micrococcus pyogenes* var. *aureus* and *Escherichia coli.* The roots possess tonic febrifugal, expectorant and has diuretic properties. They are used in dyspepsia and rheumatism. The powdered roots are prescribed as an anthelmintic and as a demulcent in dysentery. The flowers are astringent and are used in fever, diarrhoea and liver complaints. Fruits are prescribed in headache, catarrh and watery eyes, when dried they are considered wormifuge. |

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**Asafoetida:** It is an important source of gum resin. It is also used as a condiment. It is acrid and bitter in taste, and emits a strong alliaceous odour. It is extensively used in India for flavouring curries, sauces and pickles. Medicinally it stimulates the intestinal and respiratory tract and nervous system. It is useful in asthma, whooping cough and chronic bronchitis. It is also administered in hysterical and epileptic affections and in cholera.

**Geographical indications**

**Vitex:** A large, aromatic shrub with quadrangular, densely whitish, tomentose branchlets, up to 4.5 m in height, or sometimes a small, slender tree, found throughout the greater part of India ascending to an altitude of 1,500 m in outer Himalayas. Bark thin, grey; leaves 3-5; foliolate; leaflets lanceolate, entire or rarely crenate, terminal leaflets 5-10 cm x 1.6-3.2 cm, lateral leaflets smaller, all nearly glabrous above, white-tomentose beneath; flowers bluish purple, small, in peduncled cymes, forming large, terminal, often compound, pyramidal panicles; drupes globose, black when ripe, 5-6 mm in diameter, invested at the base with enlarged calyx.

**Asafoetida:** A genus of perennial herbs, distributed from the Mediterranean region to central Asia. It bears massive carrot-shaped roots.

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| **Code** | **1116** |
| **Title of the ITK** | **Control of *gundhi* bug by spray of garlic and tobacco leaves extract with washing powder in water** |
| **Reference of the ITK*** | Volume 2, page 118 |
| **Names of the plants used in ITK** | Garlic and tobacco |
| **Names in Indian languages** | **Garlic:** Bengali: *lashan, lashun, rasun;* Gujarati: *lasan;* Hindi: *lahsan;* Kannada: *belluli;* Malayalam: *vellulli, velutha ulli;* Marathi: *lasunas;* Sanskrit: ***lashuna;*** Tamil: *vallai-pundu;* Telugu: *velluli tella-gadda.*<br>**Tobacco** : Refer to ITK Code No. 139 |
| **English names** | Garlic: garlic |
| **Botanical name** | Garlic: *Allium sativum* Linn. |
| **Active ingredients** | **Garlic:** It is endowed with several medicinal properties. It is stimulant, diaphoretic, expectorant, diuretic and tonic. |

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The juice of garlic is used for various ailments of the stomach including amoebic dysentery. It is also used as an anti-tubercular drug, and in the treatment of epilepsy. It is reported to be anticholeric. Garlic reduces the blood sugar level. It is an anti-fertility drug showing oxytocic activity. Garlic is an effective long-term preventive treatment for all rheumatic and catarrhal conditions. Garlic therapy in the treatment of leprosy significantly alters the bacteriological index and improves the clinical condition of the patients. Garlic is a powerful natural cleansing and disinfecting medium. Garlic extract showed anti-bacterial activity. A highly effective pesticide has been developed from garlic extract. Garlic powder as such, or in the form of tablets or capsules, is more handy for culinary as well as medicinal purposes.

**Geographical indications**

Garlic

**Garlic:** A hardy perennial, 60 cm in height, native to Central Asia and cultivated all over India. Bulb made up of cloves; leaves long, flat, acute, sheathing the lower half of stem; scape slender, smooth, shining; spathes long, beaked, enclosing heads bearing solid bulbils; flowers small, white, prolonged into leafy points. Garlic is native to the mountainous regions of central Asia, from where it spread in pre-historic times to the Mediterranean region. Clay models of garlic have been excavated in Egypt. It reached China at an early age and was probably carried to the western hemisphere by the Spanish, the Portuguese and the French. It is grown in Karnataka, Tamil Nadu and Andhra Pradesh as an irrigated crop. It is cultivated in Uttar Pradesh and Gujarat also on a large scale.

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| **Code** | **1388** |
| **Title of the ITK** | **Pest and disease management in paddy** |
| **Reference of the ITK*** | Volume 2, page 120 |
| **Name of the plant used in ITK** | *Sindwar*<br>Refer to ITK Code No. 702 |

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| **Code** | **1387** |
| **Title of the ITK** | **Control of insect-pests in paddy** |
| **Reference of the ITK*** | Volume 2, page 119 |
| **Name of the plant used in ITK** | Custard apple |
| **Names in Indian languages** | Assamese: *atakatal;* Bengali: *ata, seetaphal;* Gujarati and Marathi: *seetaphaal;* Hindi: *seetaaphal, sharifa;* Kannada: *seethaphala;* Malayalam: *attichakka, seethaapazham;* Oriya: *ato, seethaapholo;* Punjabi: *sharifa;* Sanskrit: *gandhagataram, seetaaphalam;* Tamil: *atta, seetha-ppazham;* Telugu: *gandhagaalaramu, seetaaphalamu.* |
| **English name** | Custard-apple, sugar-apple, sweetsop |
| **Botanical name** | *Annona squamosa* Linn. |
| **Active ingredients** | Custard-apple is one of the best tropical fruits and is popular with most people, although some may not relish it because of its rich and peculiar aroma. In Andhra Pradesh the fruit forms a part of the regular diet during the season. When in abundance, the slightly raw fruit is directly baked or roasted and eaten. The ripe fruit is eaten as a dessert; the pulp may be mixed with milk to make a drink or icecream. Several products such as jelly, jam, conserves, sherbet, syrup, tarts and fermented drinks are prepared from custard-apple. The fruit possesses astringent, cooling, anti-scorbutic and febrifugal properties. As a tonic, it is reported to enrich blood and improve the muscular strength. It is considered good for digestion and is prescribed in vomiting, diarrhoea, dysentery and vertigo. The ripe pulp with salt hastens suppuration. The unripe, dried and powdered fruit is used as an insecticide. The seeds possess insecticidal and piscicidal properties. The powdered seeds are used to destroy worms. The seeds are used as an anti-conceptional drug and as an abortifacient. The leaf is reported to possess stimulant, anti-spasmodic and sudorific, anthelmintic and insecticidal properties. The crushed leaves are reported to be applied to the nostrils in hysteria and fits. The green leaves, on steam distillation, yield a yellow, olive-green or green, pleasant-smelling, bitter essential oil. The bark is used in diarrhoea. The root is reported to be a diuretic and a drastic purgative, and is given in acute dysentery; but as a purgative and diuretic it is seldom used. It is employed in depression and spinal diseases, in asthma and fever. |

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**Geographical indications**

Branch

A large, evergreen, straggling shrub or small tree, 7 m in height, introduced into India, found wild and cultivated in various parts, up to an altitude of 900 m. Bark thin-grey; leaves oblong-lanceolate or elliptic, pellucid-dotted, peculiarly scented, 5.0-15.0 cm x 1.9-3.8 cm; flowers 1- 4, greenish, fleshy, drooping, extra-axillary, more on the leafy shoot than on the older wood, tending to open as the shoot elongates; carpels many, lozenge-shaped, on a central torus, fused into an irregularly globose or heart-shaped, tubercled, yellowish green syncarpium, 5-10 cm in diameter; seeds oblong, deep brownish black, aril shining, covered with whitish pulp. Custard apple was thought to be native to India from its occurrence in the ancient literature, paintings and sculptures. It is possible that it was introduced into India in the very early periods.

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| **Code** | **1389** |
| **Title of the ITK** | **Control of rice hispa with *mahna* by-product in paddy** |
| **Reference of the ITK*** | Volume 2, page 120 |
| **Name of the plant used in ITK** | *Mahua* |
| **Names in Indian languages** | Bengali: *mahwa, maul, mahula;* Gujarati: *mahuda;* Hindi: *mahua, mohwa, mauwa;* Kannada: *hippe;* Malayalam: *poonam, ilupa;* Marathi: *mahwa, mohwra;* Oriya: *mahula, moha, madgi;* Tamil: *illupei, elupa;* Telugu: *ippa.* |
| **English name** | Mahua, mowra, tillipe, butter tree |
| **Botanical name** | *Madhuca latifolia* Macb. |
| **Active ingredients** | Flowers are used as vegetable and also as the main source of alcohol. Seed oil is used for cooking and soap making. Oilcake makes good manure. Decoction of bark is used in curing bleeding gums and ulcers. Flowers are used in cough and bronchitis |
| **Geographical indications** | A medium-sized to large deciduous tree, usually with a short bole and large rounded crown, found throughout the greater part of India up to an altitude of 1,200 m. Bark dark coloured, cracked; leaves clustered near ends of branches, elliptic or elliptic-oblong, 7.5-23 cm x 3.8-11.5 cm., coriaceous, pubescent when young, almost glabrous when mature; flowers in dense fascicles near ends of branches, many, small; calyx coriaceous, corolla tubular, fleshy, |

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cream-coloured, 1.5 cm long, scented, caducous; berries ovoid, up to 5 cm long, greenish turning reddish-yellow or orange when ripe; seeds 1—4, brown, ovoid, shinning. It is found in mixed deciduous forests, usually of a somewhat dry type, often growing on rocky and sandy soil and thriving on the Deccan trap. It is common throughout central India, Maharashtra and Andhra Pradesh; it is also common in the drier type of sal forests in Madhaya Pradesh.

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| **Code** | **1394** |
| **Title of the ITK** | **Use of neem leaves for control of *banki* disease in paddy** |
| **Reference of the ITK*** | Volume 2, page 120 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 110 |

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| **Code** | **1404** |
| **Title of the ITK** | **Control of paddy caseworm *{Nymphula depunctalis)* with *sindwar* leaves** |
| **Reference of the ITK*** | Volume 2, page 121 |
| **Name of the plant used in ITK** | *Sindwar*<br>Refer to ITK Code No. 702 |

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|---|---|
| **Code** | **1406** |
| **Title of the ITK** | **Control of rice caseworm in paddy using bamboo-shoot extract** |
| **Reference of the ITK*** | Volume 2, page 122 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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|---|---|
| **Code** | **1418** |
| **Title of the ITK** | **Control of caseworm *(Nymphula depunctalis)* by *pasu* and *sali* leaves** |
| **Reference of the ITK*** | Volume 2, page 123 |

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**Names of the plants used in ITK**

*Pasu* and *sali*

**Names in Indian languages**

*Pasu*: Refer to ITK No. 357

*Sali:* Bengali and Hindi: *kundur, luban, salai;* Gujarati: *dhup, gugali;* Kannada: *Chitta, guguladhupa, madimara;* Malayalam and Tamil: *parangi-saambraani;* Marathi: *salai, salphullie;* Oriya: *loban;* Sanskrit: *ashvamutri, kunduru, shallaki;* Telugu: *phirangi-saambraani.*

**English names**

*Pasu:* Refer to ITK No. 357

*Sali:* Indian frankincense tree, Indian olibanum tree

**Botanical name**

*Boswellia serrata* Roxb. ex Colebr.

**Active ingredients**

*Pasu:* Refer to ITK No. 357

***Sali:*** The tree, on injury, exudes an oleo-gum-resin known as Indian olibanum, Indian frankincense or salai-guggul. The gum is credited with astringent, stimulant, expectorant, diuretic, diaphoretic, emmenagogue, ecbolic and antiseptic properties. It is reported to be useful in ulcers, tumours, goitre, cystic breast, diarrhoea and dysentery, piles and skin diseases. It is used in the preparation of an ointment for sores, and with butter in syphilis.

**Geographical indications**

***Pasu:*** Refer to ITK No. 357

Twig

*Sali: A* medium- to large-sized, deciduous, balsamiferous tree, up to 18 m in height and 2.4 m in girth (normally 1.5 m) commonly found in the dry forests from Punjab to West Bengal, and in peninsular India. Bark greenish grey, yellow or reddish grey, fairly thick, smooth, exfoliating in thin, papery flakes, resinous inside; leaves imparipinnate, 30-45 cm long; leaflets 2.5-6.3 cm x 1.2-3.0 cm, ovate or ovate-lanceolate, variable; flowers small, white, in axillary racemes or panicles; drupes 12 mm long, trigonous, splitting along 3 valves; pyrenes compressed, hard, winged. The tree is common at the foot of the western Himalayas, in Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Bihar, Orissa, Andhra Pradesh and further south in the peninsula. In many places the tree forms almost pure forests, yielding an abundant supply of timber. Large forests of this tree occur in the Khadesh and Nagpur-Wardha Divisions in Maharashtra, and Khandwa-Nimar Division in Madhya Pradesh, and Adilabad in Andhra Pradesh.

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| **Code** | **1422** |
| **Title of the ITK** | **Control of gall fly *(Pachydiplosis oryzae)* in rice** |
| **Reference of the ITK*** | Volume 2, page 123 |
| **Name of the plant used in ITK** | Parso |
| | Refer to ITK Code No. 357 |

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| **Code** | **1831** |
| **Title of the ITK** | **Rust control in paddy with *garari*** |
| **Reference of the ITK*** | Volume 2, page 124 |
| **Name of the plant used in ITK** | *Cleistanthus collinus* |
| | Refer to ITK Code No. 357 |

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| **Code** | **2101** |
| **Title of the ITK** | **Tobacco-plant powder in rice to control stem-borer and leaf-borer** |
| **Reference of the ITK*** | Volume 2, page 126 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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| **Code** | **469** |
| **Title of the ITK** | **Use of cow urine to control storage pests of lentil** |
| **Reference of the ITK*** | Volume 2, page 127 |
| **Name of the plant used in ITK** | Neem |
| | Refer to **ITK** Code No. **1**51 |

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| **Code** | **1815** |
| **Title of the ITK** | **Control of chickpea pod-borer by neem-seed extract** |
| **Reference of the ITK*** | Volume 2, page 128 |
| **Name of the plant used in ITK** | Neem |
| | Refer to **ITK** Code No. 151 |

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| **Code** | **2097** |
| **Title of the ITK** | **Vegetative trapping of red hairy caterpillar** |
| **Reference of the ITK*** | Volume 2, page 129 *Calotropis* |
| **Names of the plants used in ITK** | or *Jatropha* |
| | Refer to ITK Code No. 474 |

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| **Code** | **1796** |
| **Title of the ITK** | **Use of neem extract to control *Oberia brevis* and *Decrisia obliqua* in soybean** |
| **Reference of the ITK*** | Volume 2, page 131 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1826** |
| **Title of the ITK** | **Use of tobacco decoction to control the larvae of *Heliothis armigera* in soybean crop** |
| **Reference of the ITK*** | Volume 2, page 132 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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| **Code** | **519** |
| **Title of the ITK** | **Control of aphids by using neem extract** |
| **Reference of the ITK*** | Volume 2, page 132 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1837** |
| **Title of the ITK** | **Use of neem oil for control of stem-borer in sugarcane** |
| **Reference of the ITK*** | Volume 2, page 132 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **:** | **2095** |
| **Title of the ITK** | **:** | ***Galo* disease control in sugarcane using *Calotropis* extract** |
| **Reference of the ITK*** | : | Volume 2, page 133 |
| **Name of the plant used in ITK** | : | *Calotropis*<br>Refer to TTK Code No. 474 |

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|---|---|
| **Code** | **18** |
| **Title of the ITK** | Control of termite in wheat |
| **Reference of the ITK*** | Volume 2, page 133 |
| **Name of the plant used in ITK** | *Calotropis*<br>Refer to ITK Code No. 474 |

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| **Code** | **27** |
| **Title of the ITK** | **Incorporation of tobacco residues in soil for controlling termite** |
| **Reference of the ITK*** | Volume 2, page 133 |
| **Name of the plant used in ITK** | Tobacco<br>Refer to ITK Code No. 139 |

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| **Code** | **361** |
| **Title of the ITK** | **Control of termites by *Calotropis*** |
| **Reference of the ITK*** | Volume 2, page 133-134 |
| **Name of the plant used in ITK** | *Calotropis*<br>Refer to ITK Code No. 474 |

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|---|---|
| **Code** | **1376** |
| **Title of the ITK** | **Control of termites in capsicum and cabbage** |
| **Reference of the ITK*** | Volume 2, page 134 |
| **Name of the plant used in ITK** | Neem and *Karanj* |

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**Name in Indian languages**

*Neem:* Refer to ITK Code No. 151

***Karanj:*** Assamese: *karchaw;* Bengali, Gujarati, Hindi and Marathi: *karanj, karanja;* Kannada: *honge;* Malayalam: *pungu, punnu;* Oriya: *koranjo;* Punjabi: *sukhchein, karanj, paphri;* Tamil: *ponga, pongam;* Telugu: *gaanuga, punga.*

**English name**

***Karanj:*** Pongam oil tree, *karanj,* Indian beech

**Botanical name**

***Karanj:*** *Pongamia pinnata* Pierre

**Active ingredients**

***Karanj:*** Kuaranjn is the active principle for the curative effect of oil in the skin diseases. The oil is galactagogue. The juice of the root possesses insecticidal properties. Leaf acts as a cure for ulcer and also for cleaning teeth. The dried flowers are used in decoction to quench thirst in diabetis.

**Geographical indications**

***Karanj:*** A medium-sized glabrous tree, with a short bole and spreading crown, up to 18 m high or sometimes even more and 1.5 cm in girth, found almost throughout India, up to an altitude of 1,200 m, and distributed further eastwards, chiefly in the littoral regions of south-eastern Asia and Australia. Bark grayish green or brown, smooth or covered with tubercles; leaves imparipinnate: leaflets 5-7, ovate or elliptic; flowers lilac or white tinged with pink or violet, fragrant, in axillary racemes; pods compressed, woody, indehiscent, yellowish-grey when ripe, varying in size and shape, elliptic to obliquely oblong, 4.0-7.5 cm, long and 1.7-3.2 cm, broad, with a short, curved beak; seeds usually 1, rarely 2, elliptical orreniform, 1.7-2.0 cm long and 1.2-1.8 cm broad, wrinkled, with reddish-brown leathery testa. It is often grown as a road-side avenue tree nearly all over India.

**Code** : **1421**

**Title of the ITK** : **Control of white ants or termites in rice**

**Reference of the ITK*** : Volume 2, page 135

**Name of the plant used in ITK** : Neem

Refer to ITK Code No. 151

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| **Code** | : **1105** |
| **Title of the ITK** | : **Use of *bhara* or *kans* leaf for rat control** |
| **Reference of the ITK*** | : Volume 2, page 137 |
| **Name of the plant used in ITK** | : *bhara* or *kans* |
| **Names in Indian languages** | : Hindi: *kans, kas;* Sanskrit: *kasa.* |
| **Botanical name** | : *Saccharum spontaneum* Linn. |
| **Active ingredients** | : Used for the production of hard boards, rayon-grade pulps and activated carbon. It become a very pernicious weed once it is allowed to infest cultivated land, so that sometimes cultivators have to abandon the land altogether. |
| **Geographical indications** | : A perennial grass with slender culms, growing in stools or forming continuous cane-brakes with most often aggressive rhizomatous tillering, distributed widely in the sub-tropical and tropical parts of Asia, Africa and ascending up to an altitude of 1,800 m. Culms green, grey, ivory or white, hard, but very pithy, and often hollow in the centre, varying in diameter from 5 to 15 mm, leaves long, linear, narrow or very narrow or sometimes reduced to the midrib; inflorescence a panicle varying in length and in colour from pale or greyish white to purplish grey; spikelets in pairs, one pedicelled and the other sessile, the pedicelled spikelet of the pair always blooming first; glumes always four and lodicules ciliate. |

Habit

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| **Code** | **1114** |
| **Title of the ITK** | Rat control with *bhara* grass |
| **Reference of the ITK*** | Volume 2, page 138 |
| **Name of the plant used in ITK** | *bhara* |
| | Refer to ITK Code No. 1105 |

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|---|---|
| **Code** | **1836** |
| **Title of the ITK** | **Rat control in wheat by using flower or inflorescence of *Gliricidia* plant** |
| **Reference of the ITK*** | Volume 2, page 138 |
| **Name of the plant used in ITK** | Gliricidia |

Contents

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| **Botanical name** | *Gliricidia sepium* (Jacq.) Walp. |
| **Active ingredients** | The tree is considered poisonous to rats and other rodents but not to cattle. The seeds yield fatty oil. Powdered seeds, leaves and bark are mixed with rice and used as bait for the destruction of pests. Leaves, petioles and bark are reported to possess slight insecticidal activity. |
| **Geographical indications** | A small or medium-sized tree with a short bole, introduced into India primarily as a shade tree in plantations. Leaves large, imparipinnate, with 7-15 leaflets, bright green above and pale below; flowers purplish-pink or white, borne in great profusion when leaves are shed; pods linear, 4-8 in. long, compressed, containing 10 or more seeds. The tree is grown fairly widely in parts of Tamil Nadu, Maharashtra, and Kerala up to an elevation of 3,000 ft. |

Inflorescence

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| **Code** | **15** |
| **Title of the ITK** | **Spraying of neem-leaf solution for control of pests in groundnut** |
| **Reference of the ITK*** | Volume 2, page 139 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **20** |
| **Title of the ITK** | **Management of pests and diseases by fumigation in crops through guggul** |
| **Reference of the ITK*** | Volume 2, page 139 |
| **Name of the plant used in ITK** | *Guggul* |
| **Name in Indian languages** | Bengali, Gujarati and Hindi: *guggul;* Kannada and Marathi: *guggule;* Sanskrit: *guggulu, koushikaha, devadhupa;* Tamil: *maishakshi gukkal;* Telugu: *guggul.* |
| **English name** | Indian bedellium tree |
| **Botanical name** | *Commiphora mukul* (Hook, ex Stocks) Engl. |

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**Active ingredients** : It is a source of gum resin obtained by the incision of the bark. The resin is largely used as a fixative in perfumery and in medicine. It has a wide range of usefulness in indigenous medicine. It is astringent and antiseptic. When taken internally it acts as a bitter, stomachic and carminative, and improves digestion. Like all oleoresins it increases leucosides in the blood and stimulates fagocides. It acts as a diaphoretic expectorant and diuretic. The resin is used in the form of lotion for indolent ulcers.

**Geographical indications** : A small tree or shrub with spinescent branches occurring in the arid rocky tracts of Rajasthan (Rajputana), Khandesh, Berar, Sindh and Baluchistan. The ash-coloured bark comes off in rough flakes, exposing the underbark, which also peels off in thin papery rolls. The tree grows in Sind, Rajasthan, Bangladesh, Andhra Pradesh, Assam, Madhya Pradesh and Karnataka.

Habit

**Code** **22**

**Title of the ITK** **Control of striga in sorghum and pearl millet crops**

**Reference of the ITK*** Volume 2, page 139

**Name of the plant used in ITK** *Guar*

**Names in Indian languages** Gujarati: *juwar; Hindi: jowar;* Kannada: *gori kayi*\ Marathi: *bavachi, gowar;* Sanskrit: *bakuchi, dridhabija, goraksha phalini, gorani;* Tamil: *kothaveray;* Telugu: *gorchikudu.*

**English name** Clusterbean

**Botanical name** *Cyamopsis tetragonoloba* (Linn.) Taub.

**Active ingredients** Seed flour of clusterbean is the commercial source of gum used in food, paper and textile industries. The seeds are highly valued as cattle feed. They are converted into dal, cooked and fed to cattle with a little mustard oil.

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| **Geographical indications** | A robust, erect annual, 3-10 ft, high, bearing clusters of thick, fleshy pods, $1^{1}/_{2}$-4 in. long, each containing 5-12 seeds. The plant is probably indigenous to India, though it has never been found as wild species. It is cultivated nearly throughout the country. |

Habit

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| **Code** | **26** |
| **Title of the ITK** | **Cow urine *(gau-mutra)-based* insecticide for crop-pest management** |
| **Reference of the ITK*** | Volume 2, page 139 |
| **Names of the plants used in ITK** | Neem, garlic, tobacco |
| | ***Neem:*** Refer to ITK Code No. 15**1** |
| | ***Garlic:*** Refer to ITK Code No. 1116 |
| | ***Tobacco:*** Refer to ITK Code No. 139 |

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| **Code** | **138** |
| **Title of the ITK** | **Herbal pesticide formulation for cotton** |
| **Reference of the ITK*** | Volume 2, page 140 |
| **Names of the plants used in ITK** | Neem, tobacco, *Acorus calamus*, asafoetida, *Sapindus emarginatus* |
| **Names in Indian languages** | ***Acorus:*** Assamese, Bengali and Hindi: *bach;* Gujarati and Marathi: *vekhand;* Kannada: *baje;* Malayalam: *vayampa;* Tamil: *vashambu;* Telugu: *vasa.* |
| | ***Asafoetida:*** Refer to **ITK** No. 702 |
| **English name** | ***Acorus:*** Calamus, sweet root, sweet flag |
| **Botanical name Active** | ***Acorus:*** *Acorus calamus* Linn. |
| **ingredients** | ***Acorus:*** The dried rhizomes constitute the drug calamus of commerce. In Ayurvedic system of medicine, the rhizomes are considered. The powdered drug is reported to be adulterated with siliceous earth, ground root of marsh mallow *(Althaea officinalis* Linn.) and cereal flours. The |

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rhizomes are used in incense sticks and *dhup*. The rhizome may have poisonous effect under certain conditions, causing disturbed digestion and in sever cases gastro-enteritis. The powdered rhizome is used as an insecticide for the destruction of fleas, bedbugs, moths, lice etc. It is effective in killing insect pests in stored rice and is considered to be better than chemicals for this purpose as it has no residual effect. It is used at the rate of 1 kg for 45 kg paddy. The alcoholic extract inhibits the growth of certain fungi. The rhizomes, roots and leaves yield a light-brown to brownish-yellow volatile oil known as calamus oil.

## Geographical indications

Sliced & dried roots

**Habit**

Habit

*Acorus:* A semi-aquatic, perennial, aromatic herb with a creeping rhizome, growing wild and also cultivated throughout India, ascending to an altitude of 2,200 m in the Himalayas. Rhizome horizontal, jointed, somewhat vertically compressed, spongy within, 1.25-2.5cm in thickness, pale to dark-brown or occasionally orange-brown in colour; leaves grass-like or sword-shaped, long and slender; flowers small, yellow-green, in a spadix; berries green, angular, 1-3 seeded; seeds oblong. Sweet flag thrives best in marshy and moist places. It is plentiful in the marshy tracts of Kashmir and Sirmaur (Himachal Pradesh) and in Manipur and the Naga hills. It is regularly cultivated in Kortagere taluk in Karnataka. The plant is grown in clayey loams and light alluvial soils of river banks. The field is irrigated and ploughed with green-manure before planting. The growing ends or tops of the previous year's crop are planted 30 cm apart, leaving the leafy portions well above the ground. The crop is ready for harvest in about a year. The plants are dug out, rhizomes removed, and the tops kept for the next planting. The rhizomes are cut into pieces of 5-8 cm and all fibrous roots are removed. The pieces are washed thoroughly and dried in the sun. The dried material is put into rough gunny bags and rubbed to remove the leafy scales.

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| **Code** | **147** |
| **Title of the ITK** | **Silkworm-disease management** |
| **Reference of the ITK*** | Volume 2, page 140 |
| **Names of the plants used in ITK** | *Parthenium* and *Tridax* |
| **Names in Indian languages** | *Tridax:* Kannada: *gabbu sanna savanthi, nettu gabbu savanthi;* Tamil: *vettu-kkaaya-thalai;* Telugu: *raavanaasurudita-lakaai, kampu-chemanti.* |
| **English names** | ***Tridax:*** Mexican daisy, coatbuttons |
| **Botanical names** | ***Parthenium:*** *Parthenium hysterophorus* Linn.<br>***Tridax:*** *Tridax procumbens* Linn. |
| **Active ingredients** | ***Parthenium:*** It is reported to be a tonic, febrifuge, emmenagogue and as an analgesic in neuralgia. Decoction of root is given in dysentery.<br>***Tridax:*** The leaf juice possesses antiseptic, insecticidal and parasiticidal properties. It is used to check haemorrhage from cuts, bruises and wounds. The flowers contain luteolin, glucoluteolin, quercetin and isoquercetin. |
| **Geographical indications** | ***Parthenium:*** A herb 1.0 m in height, occurs as an exotic weed in Poona in Maharashtra; in some places it has become noxious. Stem longitudinally grooved; leaves irregularly dissected, pubescent, flower-heads terminal or axillary, 5 mm in diameter, white; fruits broadly obovoid, dark brown. |

Habit

Inflorescence

***Tridax:*** A hispid, procumbent herb, with woody base, sometimes rooting at the nodes, up to 60 cm high, found as a weed up to an altitude of 2,400 m; leaves ovate lanceolate, 2-7 cmxM cm, lamina pinnatisect, sometimes 3-lobed; flowers in small, long peduncled heads; ray florets strap-shaped, white; disc florets yellow; achenes black, narrowly obconical, 2.0-2.5 mm long with feathery pappus.

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| **Code** | **149** |
| **Title of the ITK** | **Pest and disease control in paddy and vegetable crops** |
| **Reference of the ITK*** | Volume 2, page 141 |
| **Names of the plants used in ITK** | *Pteris indica, Chloroxylon swietenia, Prosopis juliflora, Vitex negundo, Azadirachta indica* and *Nicotiana tabacum* |
| **Names in Indian languages** | ***Chloroxylon:*** Gujarati and Marathi: *bheria, billu;* Hindi: *bherul, bhirra, rakata-rohidi;* Kannada: *bittula, hurugulamare, mashalda;* Oriya: *behru;* Tamil: *karumboraju, kudavuboraju, poraju;* Telugu: *billu, billuakulu, billubanka, tella-bitlu.*<br><br>***Prosopis*** *:* Bengali: *shami;* Gujarati: *sami, semru, khijado, hamra, kandi;* Hindi: *jand, chaunkra, khar, khejra;* Kannada: *banni, perumbai;* Malayalam: *parampu, tambu;* Marathi: *shemri, saunder;* Oriya: *shami;* Tamil: *perumbay, jambu;* Telugu: *jammi chettu.* |
| **English name** | ***Chloroxylon:*** Indian satin wood tree |
| **Botanical name** | ***Chloroxylon:*** *Chloroxylon swietenia* DC**.**<br><br>***Prosopis*** *: Prosopsis cineraria* Druce |
| **Active ingredients** | ***Chloroxylon:*** The decoction of the bark is astringent and used for painful joints. The bark contains the alkaloids swiepenidins A and B, chloroxylin and chloroxylonine. Leaves are useful in rheumatism and smoke from the burning leaves drives away insects.<br><br>*Prosopis :* The bark as well as galls formed on the leaves are used for tanning. |
| **Geographical indications** | ***Chloroxylon:*** A moderate-sized tree, 9-15 m in height, and 1.0-1.2 m in girth, with a short straight, clear bole up to 3 m, and spreading crown, common in dry, deciduous forests throughout peninsular India, at altitude up to 1,100 m. Bark thick, corky, rough, furrowed, pale yellow or light grey, aromatic; leaves pinnate, 12.5-22.5 cm long, aromatic, leaflets 10-20 pairs, oblong, gland-dotted, 2.5 cm long; flowers white or cream, in terminal or axillary panicles; capsules oblong, glabrous, 2.5 cm long, dark-brown when ripe; seeds oblong, brown, winged. The tree is commonly found in the dry, deciduous forests of peninsular India extending as far north as Satpura hills and Chotanagpur. It |

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Branch

grows on the metamorphic rocks and bare rocky ground on poor soils, if they are well drained and contain a large portion of sand or gravel. It is also found on black cotton soils.

*Prosopis :* A small to moderate-sized tree, evergreen or nearly so, with light foliage and rather slender branches armed with conical spines, found in the dry and arid regions of India. It does not ordinarily exceed a height of 12 m and a girth of 1.2 m, the maximum recorded being 18m and 5.4 m, respectively. Bark grey, rough, exfoliating in thin flakes; leaves bipinnate, usually with 2 pairs of pinnae: pinnules 7-12 pairs; flowers small, yellowish, in slender spikes; pods 10-25 cm x 5-10 mm, cylindric, torulose or flattish with coriaceous exocarp; seeds 10-15 in a pod, oblong, compressed, with moderately hard, brown testa. In Punjab it occurs throughout the alluvial plains, and within this region the tree occurs most plentifully in the drier areas where the normal rainfall is 10-25 cm. In peninsular India, where the normal rainfall is found to vary from 50 to 90 cm, the tree is gregarious but is scattered in open dry forests.

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| **Code** | **150** |
| **Title of the ITK** | **Ward off mosquitoes by a simple device** |
| **Reference of the ITK*** | Volume 2, page 141 |
| **Name of the plant used in ITK** | Orange |
| **Names in Indian languages** | Assamese: *kamala, sumithra;* Bengali: *kamla lebu;* Gujarati and Hindi: *narangi, santra;* Kannada: *kittale;* Khasi: *soh-niamtra;* Marathi: *santra;* Oriya: *kamala, santra;* Punjabi: *santara;* Tamil: *kamala, koorg kudagu orange;* Telugu: *kamalapandu.* |
| **English name** | Loose-skinned orange, mandarin, mandarin orange, santra |
| **Botanical name** | *Citrus reticulata* Blanco |
| **Active ingredients** | Peel is used for marmalade and as boiler fuel. Essential oil, distilled mainly in Nagpur and Coorg, is used in toilet products, pharmaceutical preparations and confectionery. |
| **Geographical indications** | A small spiny tree with a dense top of slender branches, believed to have been introduced sometime in the eighth century AD, widely grown in India. Leaves lanceolate with prominent midrib; petioles narrowly winged or slightly |

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| | margined, articulated; flowers white, single or in unbranched inflorescence; fruits medium to large, flattened or depressed, globose, yellow or reddish-orange, core hollow, rind thin, rind and segments easily separable, segments 10-14, pulp of exceptionally fine quality; seeds small, beaked. |
| **Code** | **152** |
| **Title of the ITK** | **Pest and disease control in paddy using garlic and *notchi* leaf in cow urine** |
| **Reference of the ITK*** | Volume 2, page 139 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |
| **Code** | **168** |
| **Title of the ITK** | **Botanical alternatives in plant protection** |
| **Reference of the ITK*** | Volume 2, page 142 |
| **Names of the plants used in ITK** | Arali, datura, custard apple, etty and *Gloriosa* |
| **Names in Indian languages** | ***Datura:*** Bengali, Gujarati, Hindi and Marathi: *dhatura;* Kannada, Malayalam, Tamil andTelugu: *ummatta;* Sanskrit: *dhattura, unmatta, kanaka, shivapriya.*<br><br>***Etty:*** Bengali: *kuchila, thalkesur;* Gujarati: *kuchla;* Hindi - *bailewa, chibbige, kajra, kuchla;* Kannada: *hemmushti, ittangi, ittim kanjira;* Malayalam: *kanjiram, kariram;* Marathi: *jharkatachura, kajra, kar, kara;* Oriya: kachila, *kora, kosila;* Punjabi: *kagophale, rajra, ruchila;* Sanskrit: *karaskara, chipita, dirghapatra, geradruma, kakasphurja, marakatinda, vishamushti;* Tamil: *etti, kagodi, kanjirai;* Telugu: *Mushti, mushidi.*<br><br>***Gloriosa:*** Bengali: *bishalanguli, ulatchandal;* Gujarati: *dudhiovachnag, varhvardi;* Hindi: *karihari, languli; Kannada:agnisikhe,akkatangaballi,karadikanninagadde;* Malayalam: *medoni, malattamara, mettonni;* Marathi: *indai, kariannag, nagkaria, kallavi;* Oriya: *ognisikha, garbhhaghhatono, panjangulia, meheriaphulo;* Punjabi: *kariari, mulim;* Sanskrit: *langli, kalikari, ailni, agnisikha,* |

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*garbhaghatini, agnimukhi;* Tamil: *kalaippaik-kishangu, akkinichilam;* Telugu: *adavi-nabhi, kalappagadda, ganjeri.*

**English names** : ***Arali:*** oleander, rose bay

***Datura:*** jimson weed, stink weed, mad apple, thorn apple, *Stramonium*

***Etty:*** snake-wood, nux-vomica, strychnine tree

***Gloriosa*** *:* Malabar glory lily

**Botanical names** ***Arali:*** *Nerium oleander* Linn.

***Datura:*** *Datura stramonium* Linn.

***Etty:*** *Strychnos nux-vomica* Linn.

***Gloriosa:*** *Gloriosa superba* Linn.

**Active ingredients** **: *Arali:*** The bark and flower posses cardio-tonic properties similar to leaves. The leaves of the plants are used in cutaneous eruptions. A decoction of leaves is used to destroy maggots infesting wounds.

***Datura:*** It is similar to belladonna in the symptoms produced by it and in its general physiological and therapeutic action. It is a narcotic, anti-spasmodic and anodyne and is used chiefly to relieve the spasm of the brochioles in asthma. The leaves are applied to boils, sores and fish-bites. The juice of the flowers is used for ear-ache. The juice expressed from the fruits is applied to the scalp for curing dandruff and falling hair. It is one of the chief ingredients of the Ayurvedic preparation, Kanaka Asava, used as demulcent, expectorant, antispasmodic and anodyne in coughs, asthma and phthisis.

***Etty:*** It is used as a prescription for nervous disorder. It is used as tonic, stimulant and febrifuge. The leaves are applied as a poultice on sloughing wounds and maggot-infected ulcers. Root and bark are used in fever, and infusion of the latter is prescribed for epilepsy. Strychnine and brucine are the most important and strongly toxic alkaloids present in this plant. These alkaloids occur not only in seed but also in the root, wood, bark, leaves, fruit pulp and hard fruit cells. Strychnine is used as a cardial vascular and respiratory stimulant and bitter tonic, stimulating all part of central nervous system. Strychnine mixed with flour and

starch is extensively used for destroying stray dogs, cats, mice and vermin.

*Gloriosa:* The tubers are regarded as tonic, stomachic and anthelmintic when taken in doses of 5-10 grains; in larger doses they are intensely poisonous. For use as drug, the tubers are harvested during and after the rains, cleaned to remove adhering matter and scales divided into pieces up to 3 in. long and dried. The drug is reported to be used for a variety of medicinal purposes. It is a gastro-intestinal irritant and may cause vomiting and purging. It is sometimes used for promoting labour pains and also as abortifacient. It is considered useful in colic, chronic ulcers and piles. Externally it is used as a local application for parasitic skin disease and as a cataplasm in neuralgic pains. The white starchy powder obtained by repeated grinding and washing of tubers is given in gonorrhoea. The tuber is administered to cattle for expulsion of worms. The leaf juice is used for killing lice in the hair.

**Geographical indications**

Habit

***Arali:*** An evergreen, glabrous shrub, up to 6 m high, native of Mediterranean region and extending as far as Iran. It is often grown in Indian garden for ornament and also as fence and wind-break. Leaves opposite, in pairs or in whorls of 3, narrowly oblong-lanceolate, 6-20 cm x 1-3 cm; flowers salver-shaped, pink or white, scentless, in terminal cymes; follicles 8-15 cm long, straight, appressed, longitudinally striate, yellowish green to light brown; seeds numerous with a tuft of brown hairs.

***Datura:*** *A* glabrous or farinose annual, usually 3 ft high, but attaining in rich soils a height of 6 ft or more. Stem erect with spreading branches; leaves pale green, ovate or triangular-ovate, 5-6 in. long, irregularly toothed; flowers large, 3-8 inc. long, white or violet; capsule erect, ovoid, thickly covered with sharp spines, dehiscing into 4 valves; seeds numerous, reniform. The plant is distributed on the hills throughout India up to an altitude of 8,000 ft and is common in north-western Himalayas.

Habit

Habit

Habit

**Etty***:* An evergreen or deciduous tree, usually 13 m high and 0.9 - 1.8 m in girth, with a 3.6 - 6.0 m long, fairly straight and cylindrical bole, found throughout tropical India up to an altitude of 360 m. In favourable situations trees as high as 30 m with a girth of 2.8 m may be found. The tree occurs to a considerable extent in Uttar Pradesh, Bihar, Orissa, Coromandel coast, Andhra Pradesh and Karnataka, and is most common in the monsoonal forests along the western coast. Leaves 8-15 cm long, broadly elliptic, obtuse or acute, entire, with prominent central nerves; flowers greenish white, in terminal compound cymes; berries globose, 2.5 - 5.0 cm in diameter; seeds discoid (coin-like), covered with fine and silky hair, embedded in white, bitter pulp.

**Gloriosa***:* A branched herbaceous climber, common in low jungles almost throughout India up to an altitude of 6,000 ft and in Andaman Islands. Stems slender, annual, up to 20 ft long arising from a perennial, fleshy, tuberous rhizome: rhizome cylindrical, bifurcated, usually V-shaped with the two limbs equal or unequal in length, pointed at the ends, up to 12 in. long and 1.5 inc. in diameter; leaves alternate, opposite or whorled, sessile or nearly so, ovate-lanceolate, with accuminate tips spirally twisted to serve as tendrils; flowers showy, large, solitary or corymbose with perianth segments which have wavy margins, greenish at first, later becoming yellow and finally scarlet or crimson; capsules 2 in. long, containing many rounded seeds.

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| **Code** | **170** |
| **Title of the ITK** | **Pest management by using Cynodon** |
| **Reference of the ITK*** | Volume 2, page 142 |
| **Name of the plant used in ITK** | *Cynodon* |
| **Names in Indian languages** | Bengali: *durba, dubh, dubla;* Hindi: *dhub, hariali;* Kannada: *kudigarikai, garikaihallu;* Marathi: *haryali, karala;* Punjabi: *dhub khabbal, talla;* Sanskrit: *durva, haritali;* Tamil: *arugam-pullu, hariali;* Telugu: *gericha gaddi, harvali.* |
| **English name** | Dhub grass, Bermuda or Bahama grass |
| **Botanical name** | *Cynodon dactylon* Pers. |

Contents

**Active ingredients** : A decoction of the plant is diuretic, and considered useful in dropsy and anasarca. The expressed juice is astringent, and is applied to bleeding cuts and wounds. Rhizomes used in genito-urinary disorders.

**Geographical indications** : A hardy perennial grass with creeping culms, rooting at the nodes and forming spreading mats on the surface of the soil. The grass grows throughout India, ascending up to 8,000 ft.

Habit

**Code** : **363**

**Title of the ITK** : **Application of neem powder to get rid of house-flies**

**Reference of the ITK*** : Volume 2, page 143

**Name of the plant used in ITK** : Neem

Refer to ITK Code No. 151

**Code** : **466 (3)**

**Title of the ITK** : **Methods of pest and disease management in paddy**

**Reference of the ITK*** : Volume 2, pages 143-144

**Names of the plants used in ITK** : Germany ban and *Vitex*

**Names in Indian languages** : **Germany ban:** Bengali: *Packurmul, pani-maricha.*

**English name** : **Germany ban:** Water pepper, pepperwort

**Botanical name** : **Germany ban:** *Polygonum hydropiperhinn.*

**Active ingredients** : **Germany ban:** The herb possesses stimulant, diuretic, styptic, emmenagogue and lithontriptic properties. Liquid extract of the plant is said to be used as an oral contraceptive. An infusion of the herb is used in uterine disorder and as a haemostatic. The bruised leaves and seeds are used as vesicants and are substitute for mustard poultice. The leaves are chewed to relieve toothache. The roots are bitter and are said to possess stimulant, diuretic, carminative, tonic and anthelmintic properties. Root juice is used as a wash for skin affections.

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| **Geographical indicators** | **Germany ban:** A glabrous, often glandular, reddish, annual or perennial herb, up to 80 cm high, distributed throughout India in wet places, ascending up to an altitude of 2,100 m in the Himalayas. Leaves linear-lanceolate or oblong-lanceolate with resinous cavities; flowers pink or red, in slender racemes; nuts granulate, finely dotted. |

Inflorescence

Habit

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| Code | **466 (11)** |
| **Title of the ITK** | **Methods of pest and disease management in paddy** |
| **Reference of the ITK*** | Volume 2, page 145 |
| **Name of the plant used in ITK** | Wild turmeric |
| **Names in Indian languages** | Bengali: *ban-halud;* Hindi: *jangli-haldi;* Kannada: *kasturi-arishina;* Marathi: *ran-halada;* Tamil: *kasturi-manjal;* Telugu: *kasturi pasupu.* |
| **English name** | Wild turmeric, yellow zedoary |
| **Botanical name** | *Curcuma aromatica* Salisb. |
| **Active ingredients** | The tubers are orange-red and possess a camphoraceous odour. They are used medicinally and sometimes as a substitute for turmeric. They are applied externally in combination with astrigents, bitters and aromatics, to bruises and sprains. They are also used in skin eruptions and infections and to improve complexion. |
| **Geographical indications** | An erect, perennial herb, found throughout India; also cultivated in some parts of West Bengal and Kerala. Rhizomes tuberous large, tuber yellow, orange, red and aromatic inside; leaves large, oblong; flowers pinkish white, enclosed in coloured bracts, in 30 cm long spikes. |

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| **Code** | **468** |
| **Title of the ITK** | **Use of neem to control pests** |
| **Reference of the ITK*** | Volume 2, page 148 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **481** |
| **Title of the ITK** | **Use of Moa fish to control aphid infestation in mustard** |
| **Reference of the ITK*** | Volume 2, page 149 |
| **Names of the plants used in ITK** | Turmeric, chilli, rice and mustard |
| **Names in Indian languages** | **Turmeric:** Bengali, Gujarati, Hindi and Marathi: *haldi, halada;* Kannada: *arishina;* Sanskrit: *haridra;* Tamil: *manjal;* Telugu: *pasupu.*<br><br>**Rice:** Bengali: *chal*\ Gujarati: *dangar, choka;* Hindi: *dhan, chaval;* Kannada: *nellu, bhatta, akki;* Malayalam: *nellu, ari*\ Marathi: *tandula, dhan, bhat;* Sanskrit: *dhanya, vrihi, nivara, syali;* Tamil: *nellu, arisi*\ Telugu: *vadlu, varidhanyamu, biyyamu.*<br><br>**Mustard:** Gujarati: *kaala sarsava;* Hindi: *banarasi rai;* Kannada: *kari sasivae;* Malayalam: *katuka;* Marathi: *mohari rai;* Tamil: *sirukadugu;* Telugu: *nalla avalii.* |
| **English names** | **Turmeric:** Valeton turmeric<br><br>**Rice:** Rice, paddy<br><br>**Mustard:** black mustard |
| **Botanical names** | **Turmeric:** *Curcuma longa* Linn.<br><br>**Rice:** *Oryza sativa* Linn.<br><br>**Mustard:** *Brassica nigra* (Linn.) Koch |
| **Active ingredients** | **Turmeric:** Turmeric is used for dyeing wool, silk and un-mordant cotton to which it imparts a yellow shade in an acid bath. Turmeric is used to some extent as a stomachic, tonic and blood purifier, mixed with warm milk. A decoction of rhizome is said to relieve the pair purulent ophthalmia. Externally it is applied to indolent ulcers, and the paste made from powdered rhizome along with lime is a remedy for inflamed joints. The dye-stuff acts as a cholagogue, causing the contraction of gall-bladder.<br><br>**Rice:** Starch is the major constituent of rice. Whole rice is a good source of vitamin-B, particularly thiamine, guanidine, amino acid and uracil. The husk has been tried with some success as a raw material for making paper, hard board and linoleum. |

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**Mustard:** The oil is optically inactive and consists almost entirely of allyl-iso-thiocyanate. The oil obtained is an extremely powerful irritant owing to its volatility and penetrating power and is responsible for the painful nature of blister caused by mustard. It is also used in case of pleurisy and pneumonia. In india the seeds of black mustard are used in pickles and curries.

**Geographical indications**

**Turmeric:** A perennial herb, 2-3 ft high with a short stem and tufted leaves; the rhizomes, which are short and thick, constitute the turmeric of commerce. The plant is native of southern Asia (probably India) and is cultivated extensively throughout the warmer parts of the world. It is grown on a large scale in India, China and East Indies. It is cultivated in almost all states of India, particularly Tamil Nadu, Bengal and Maharashtra.

**Rice:** An annual or perennial grass without a rhizome; leaves long and narrow, 30—50 cm. x 1.2-2.5 cm, slightly pubescent with spiny hairs on the margin; inflorescence a terminal panicle varying from close and compact in some to loose and spreading in others; spikelets generally single, but in some in clusters of 2-7; number of spikelets varying from 50-60 to 200-300, large numbers being usually associated with smaller size and a densely packed arrangement; lemma and palea surrounding the kernel, variously coloured, golden yellow, red, purple, brown or smoky black, becoming straw or light yellow when the grains ripen; grain varying in size from 5 to 14.5 mm long and 1.9 to 3.7 mm broad, the length:breadth ratio defining size and shape of the grain; kernel most commonly white, occasionally red, purple or brown. Rice is one of the oldest of food crops and has been in cultivation in India, China, Java and East Africa from very ancient times. It is mainly cultivated in Andhra Pradesh, Bihar, Assam, Gujarat, Jammu and Kashmir, Kerala, West Bengal, Jharkhand, Chhattisgarh, Orissa, Tamil Nadu etc.

Habit

Habit

Contents

Flowering branch

Habit

**Mustard:** A much branched annual herb, 1.0-2.1 m or more in height, native to the Mediterranean region and introduced into India. Lower leaves lyrate-pinnatisect with 1 -3 pairs of lateral lobes and a much larger terminal lobe, hispid on both surfaces; upper leaves linear-oblong, entire or sinuate; flowers yellow in corymbose racemes; siliqua 10-20 cm x 1.5-2.0 mm, attenuating into a slender seedless beak; seeds very small, angled, minutely pitted, 3-10 in a fruit, the seed-coat mucilaginous. The exact time of the introduction of this species into India is not known, but it is presumed to have been introduced comparatively recently. It is grown as a cool-season garden crop in small scale in Punjab, Delhi, Uttar Pradesh, Madhya Pradesh, and western and southern India, mainly for its seeds which are consumed as a condiment. It does not contribute to the supplies of mustard oil.

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| **Code** | **463** |
| **Title of the ITK** | Use of *hing* and turmeric powder to control wilt disease in brinjal |
| **Reference of the ITK*** | Volume 2, page 149 |
| **Names of the plants used in ITK** | *Hing* and turmeric<br>***Hing:*** Refer to ITK Code No. 702<br>**Turmeric:** Refer to ITK Code No. 481 |
| **Code** | 521 |
| **Title of the ITK** | Control of white grub by crushed seeds of apricot *(Prunus armenica)* |
| **Reference of the ITK*** | Volume 2, page 150 |
| **Name of the plant used in ITK** | Apricot |
| **Name in Indian languages** | Hindi: *Zardalu, khubani, chuari, kushmiaru;* Punjabi: *Hari, sari, chuli.* |

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|---|---|
| **English name** | Common Apricot |
| **Botanical name** | *Prunus armeniaca* Linn. |
| **Active ingredients** | Apricot leaves contain quercitin, cyaniding, kaempferol, caffeic acid and p-coumaric acid. |
| **Geographical indicators** | A moderate-sized tree, about 10 m. tall, with a reddish bark, found almost naturalized in the north western Himalayas, particularly in the valleys of Kashmir, Chenab, and Kulu and in Simla hills at altitudes up to nearly 3,000 m. Leaves ovate to round-ovate or sometimes sub-cordate, 5-9 cm. long; flowers pinkish white, fruits round, 5 cm. across, pubescent when young, but nearly glabrous at maturity, with a yellow skin overlaid with red; flesh yellow to yellowish orange, firm and sweet, mostly free from the flat, ridged stone; kernels sweet in some types and bitter in others. It is said to be native of China and the central Asiatic region, from where it has spread to India, Iran, Egypt and Greece by way of Armenia. |

Twig

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| **Code** | **522** |
| **Title of the ITK** | **Pest management through planting *of Datura alba*** |
| **Reference of the ITK*** | Volume 2, page 150 |
| **Name of the plant used in ITK** | *Dhatura* |
| **English names** | Angel's trumpet, jamestown-weed, jimson-weed, stinkweed, devil's trumpet, apple of Peru. |
| **Botanical name** | *Datura alba* Nees |
| **Active ingredients** | The principle alkaloid is scopolamine. The green leaves are used for dyeing of clothes. Dried leaves and flower tops are known for narcotic and anti-spasmodic properties. Dried leaves are used in medicine for the same purpose as the leaves of belladona and stramonium. |
| **Geographical indications** | A sub-glabrous spreading herb, sometimes becoming shrubby. It occurs throughout India, and is occasionally grown in gardens. Leaves triangular-ovate in outline, |

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Habit

unequal at the base; flowers 7 inc. long, often double or triple, white, violaceous, reddish-purple or purple on the outside and white within; fruit globose, tuberculate or muricate, borne on a short thick peduncle, capsule dehisces irregularly, exposing a mass of closely packed, light brown, flat seeds, which nearly fill the interior.

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| **Code** | **689** |
| **Title of the ITK** | **Control measure against insect pests** |
| **Reference of the ITK*** | Volume 2, page 151 |
| **Names of the plants used in ITK** | Tobacco, garlic, onion, *dhatura*, red chilli and *hing* |
| **Names in Indian languages** | **Tobacco:** Refer to ITK No. 139<br>**Garlic:** Refer to ITK No. 1116<br>**Onion:** Bengali: *palandu, piyaj;* Gujarati: *dungali;* Hindi: *piyaz;* Kannada: *irulli;* Malayalam: *ulli;* Marathi: *kanda;* Sanskrit: *nripakanda, palandu, raktakanda;* Tamil: *ira-vengayam, irulli, vella-vengayam;* Telugu: *nirulli, vulli gaddalu.*<br>***Dhatura:*** Refer to ITK No. 522<br>**Red chilli:** Refer to ITK No. 139<br>**Hing***:* Refer to ITK No. 702 |
| **English name** | **Onion:** Onion |
| **Botanical name Active ingredients** | **Onion:** *Allium cepa* Linn.<br>**Onion:** The bulbs contain several phenolic acids. Onion contains oleanolic acid. Onion finds varied medicinal uses. Externally it acts as a rubifacient. Roasted bulbs are used as poultice for boils and abscesses. The juice of onion is used for treating ophthalmia and earache. Onions possess tonic, which is stomachic, and diuretic, and has appetite improving properties. They are useful in jaundice and biliousness, as they stimulate bile production. Onions are stimulant and expectorant and are therefore, useful in respiratory affections. Onion is reported to possess aphrodisiac, anti-malarial and anti-rheumatic properties. It |

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is used for tumours and diseases of spleen. Fresh onion juice is used against flatulence, dysentery and cholera, and also for restoring consciousness in fainting and hysteric fits. Fresh juice of onion is bactericidal. Onion extract also reduces blood sugar during intravenous glucose tolerance test and adrenaline-induced hyperglycaemia in man.

**Geographical indications**

Different varieties of Onion

***Onion:*** *A* bulbous biennial cultivated throughout India. Scape 60-75 cm in height, ventricose; leaves sub-distichous, fistular, acute, shorter than the inflated scape; flowers greenish white, stellate, in large globular umbels with or without bulbils, enclosed by a thin membranous spathe; fruit capsule. The Middle Asiatic countries in the region of Iran and Pakistan are considered the primary centre of origin of onion; in these regions it has been in cultivation form pre-historic times. The Near East Asiatic and Mediterranean regions are considered to be the secondary centres of origin. Onion is grown in India, since remote times, as is evident from its reference in the *Charaka Samhita.* It has been in cultivation for over 5,000 years and its existence in the wild form is doubtful. The edible part of the plant comprises the swollen bases of the green foliage leaves and fleshy scales. In the early stages of growth when days are short, the foliage leaves develop, whereas with the approach of the long day conditions, the leaf bases begin to swell to form a bulb, and no further foliage leaves are formed; the swelling of the basal fleshy scales progresses till maturity.

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| **Code** | **694** |
| **Title of the ITK** | **Use of dried garlic rhizome for controlling gram *dhora* beetle in pulses** |
| **Reference of the ITK*** | Volume 2, page 151 |
| **Name of the plant used in ITK** | Garlic |
| | Refer to ITK Code No. 1116 |

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| **Code** | : | **695** |
| **Title of the ITK** | : | **Use of mustard oil to check spoilage by insect pests** |
| **Reference of the ITK*** | : | Volume 2, page 152 |
| **Name of the plant used in ITK** | : | Mustard<br>Refer to ITK Code No. 481 |

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| **Code** | **697** |
| **Title of the ITK** | **Pest control with cattle dung** |
| **Reference of the ITK*** | Volume 2, page 152 |
| **Name of the plant used in ITK** | *Cedrus* |
| **Names in Indian languages** | Bengali: *debdaru, devdar,* Gujarati: *devdar, vanseo deodar;* Hindi: *dedwar, deodar;* Kannada: *bhadradam, devadaru;* Dogri: *dadar, dair, deodar;* Malayalam: *devataram;* Marathi: *devadam, dewadar;* Punjabi: *dada, dewdar, kalain, keli;* Sanskrit: *bhadravata, deodaru, devadaru, mastadaru;* Tamil: *devadaram, devadari, devaduni;* Telugu: *devadari, devadaruva*. |
| **English names** | Deodar, Himalayan cedar, true cedar *Cedrus* |
| **Botanical name** | *deodara* (Roxb. ex Lamb.) G Don |
| **Active ingredients** | The Himalayan cedarwood, on steam distillation yields a golden-yellow essential oil, known as Himalayan Cedarwood oil, which has a characteristic balsamic odour. The bark is astringent, which is useful in fevers, diarrhoea and dysentery. The wood possesses diaphoretic, diuretic and carminative properties, and is useful in fever, and in pulmonary and urinary disorders. It is also used as a remedy for ulcers and eruptions, for mange in horses and buffaloes and sore feet in cattle. |
| **Geographical indications** | A large evergreen tree, often reaching 60 m in height and 10 m in girth, found throughout the western Himalayas from Afghanistan to Garhwal at elevations ranging from |

Habit

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| | 1,200 m to 3,000 m above the sea level, being most common from 1,800 m to 2,600 m. Deodar is also grown as an ornamental tree in the hill stations and does well where the soil is light. |
| **Code** | **1379** |
| **Title of the ITK** | **Control of leaf-eating insects in cabbage and cauliflower through neem leaves** |
| **Reference of the ITK*** | Volume 2, page 153 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |
| **Code** | **1383** |
| **Title of the ITK** | **Protection of field crops by planting trees of *arjun, karanj* etc.** |
| **Reference of the ITK*** | Volume 2, page 154 |
| **Names of the plants used in ITK** | *Ashan, palash,* neem, *karanj, arjun, bhelwa, jamun* and *parasi* |
| **Names in Indian languages** | ***Palash:*** Bengali, Malayalam and Marathi: *palas;* Gujarati: *khakharo;* Hindi: *dhak, palas;* Kannada: *muttuga;* Dogri: *dhak;* Oriya: *porasu;* Punjabi: *chichra, dhak, palas;* Sanskrit: *palasa;* Tamil: *parasa, pilasu;* Telugu: *mooduga, palasamu.*<br><br>***Arjun:*** Assamese: *orjun;* Bengali: *arjhan;* Gujarati: *sadado;* Hindi: *arjuna;* Kannada: *maddi;* Marathi: *sanmadat, sadaru, vellamarda;* Oriya: *arjuno, sahajo;* Punjabi: *arjan;* Tamil: *vellamatta;* Telugu: *yerramaddi.*<br><br>***Jamun:*** Bengali: jam, *kalajam;* Gujarati: *jambu, jamli;* Hindi: *jaman, jam;* Kannada: *nerale;* Malayalam: *naval, perinnaral;* Marathi: *jaman, jambul;* Oriya: *jamo;* Punjabi: *jammu;* Tamil: *neredam, naval, sambal;* Telugu: *neereedu.* |
| **English names** | ***Palash:*** bastard teak, Bengal kino tree, flame of the forest<br><br>***Jamun:*** jaman, jambolan, black plum, Java plum |
| **Botanical names** | ***Palash:****Butea monosperma* (Lam.) Taub. |

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***Arjun:*** *Terminalia arjuna* (Roxb.) Wight & Arn.

***Jamun:*** *Syzygium cuminii* (Linn.) Skeels.

**Active ingredients** : ***Palash:*** The bark is reported to possess astringent, bitter, pungent, alterative, aphrodisiac and anthelmintic properties. It is useful in tumours, bleeding piles and ulcers. The decoction is prescribed in cold, cough, fever, various forms of haemorrhages, in menstrual disorders and in the preparation of tonics and elixirs. The roots are useful in elephantiasis, and in curing night blindness and other defects of sight. The green leaves are commonly lopped for fodder; the yield of milk in buffaloes is reported to improve when they are fed *Butea* leaves. The leaves are also reported to contain alkaloids. They are credited with astringent, tonic, diuretic and aphrodisiac properties. They are also used to cure boils, pimples and tumorous haemorrhoids and are internally given in flatulent colic, worms and piles. The shoot apex is used by the *kani* tribal women of Kerala to prevent conception.

***Arjun:*** The bark has been used locally for many years for tanning. The dry bark from stem contains 20-24% tannin and that from lower branches 15-18%. The bark contains beta stosterol, ellagic acid and trihydroxy triterpene mono carboxylic acid. The leaves are fed to tassar silkworm. The bark is acrid and credited with styptic, tonic, febrifugal and antidysenteric properties. A decoction of the bark is used as a wash in ulcer. The fruit is tonic and deobstruent. The juice of the fresh leaves is used in earache.

***Jamun:*** The vitamins present are V-4 (80-IA), and malic acid is the major acid (0.59% of the weight of fruit). Galic acid and tannin account for astringency of fruit. Oleanolic acid is also found in the flower. Glucose and fructose are the principal sugars in the ripe fruits. The stem bark contains betulinic acid, beta-sitosteral. The leaves form palatable fodder for cattle, sheep and goats. The seeds are used as feed for livestock. They may be used as a replacement for oilcakes in animal feed up to 75%. The bark is used in dyeing and tanning and for colouring fishnets. Extract of bark stems, leaves, buds and flowers possesses moderate antibiotic activity against *Micrococus pyogens* var. *aureus*. An extract of the leaves also showed moderate activity against *Escherichia coli*. The bark is astringent and is used

in the preparation of gargles and mouth washes. A decoction of bark and also leaves is used in the treatment of diabetes. The bark extract is reported to have an effect on glycogenolysis and glycogen storage in animals. The fruits have been also used in the treatment of diabetes. Extract of the bark is toxic to *Pyricularia oryzae* and *Physalospora tucumanensis*.

## Geographical indications

Habit

Dried specimen

Branch

***Palash:*** A deciduous tree with a somewhat crooked trunk, up to 15 m in height and 1.6-2.0 m (sometimes up to 3.8 m) in girth; commonly found throughout India, except in the arid regions. Bark bluish-grey or light-brown; leaves long-petioled, 3-foliolate, leaflets coriaceous, broadly obovate from a cuneate or deltoid base, glabrescent above, densely finely silky below; flower buds dark brown, flowers bright orange-red, sometimes yellow, in 15 cm long racemes on bare branches; pods pendulous, silky-tomentose, 10-13 cm long, containing 1 seed at its apex; seeds flat, reniform, 3.3-3.8 cm x 2.2-2.5 cm. It is common throughout the greater part of India.

***Arjun:*** *A* large, evergreen tree, with a spreading crown and drooping branches, common in most parts of India and also planted in many parts for shade and ornament. Stems rarely long or straight, generally always buttressed and often fluted; bark very thick, grey or pinkish green, smooth, exfoliating in large, thin, irregular sheets; leaves sub-opposite, oblong or elliptic, coriaceous, usually 10-15 cm long, occasionally 25 cm, cordate, shortly acute or obtuse at the apex; flowers in panicled spikes; fruits 2.5-5.0 cm long, nearly glabrous, ovoid or ovoid-oblong, with 5-7 hard, winged angles. The tree is common throughout the greater part of the Indian peninsula along rivers, streams, ravines and dry water courses, reaching large size on fertile, alluvial loam. It is rare in the Karnataka, but is fairly plentiful in Tirunelveli and on West Coast. It extends northwards to the sub-Himalayan tract, where it is distributed along the banks of streams; in Punjab, it is a cultivated tree. It is common in Chotanagpur, Orissa and in the northern Circars.

***Jamun:*** A large, evergreen tree, attaining 30 m height and 3.6 m girth, with a bole up to 15 m, found throughout India up to an altitude of 1,800 m. Bark brown or greyish, fairly smooth, up to 2.5 cm. Thick, with shallow depressions, exfoliating in woody scales; leaves lanceolate, elliptic-

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oblong or broadly ovate-elliptic, 7.5-15.0 cm x 3.8-6.8 cm, coriaceous, gland-dotted, smooth and shiny; flowers greenish white, fragrant in trichotomous panicles; fruits ellipsoid or oblong, up to 2.5 cm. Long, black with pinkish juicy pulp; seeds single; shaped like the fruit, 1-2 cm long, or 2 to 5 seeds compressed together into a mass resembling a single seed, the whole enclosed in a coriaceous covering.

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| **Code** | **1385** |
| **Title of the ITK** | **Crop protection by ploughing and planking by weed of *kendu* etc.** |
| **Reference of the ITK*** | Volume 2, page 154 |
| **Name of the plant used in ITK** | *Kendu, ashan* or *parasi* |
| **Names in Indian languages** | Gujarati: *amrug;* Hindi: *tendu, timburni;* Kannada: *abanasi, bale, tumari;* Malayalam: *kari;* Marathi: *tendu, tumri;* Sanskrit: *dirghapatraka;* Tamil: *karai, karundumbi, tumbi;* Telugu: *mancigata, nallatumki, tumki;* Oriya: *kendu.* |
| **English name** | Coromandel ebony persimmon |
| **Botanical name** | *Diospyros melanoxylon* Roxb. |
| **Active ingredients** | The fruits are carminative and astringent. The leaves are diuretic, carminative, laxative and styptic. Dried flowers are reported to be useful in urinary, skin and blood diseases. The bark is astringent and its decoction is used in diarrhoea and dyspepsia. The dilute extract is used as an astringent lotion for the eyes. |
| **Geographical indications** | A moderate-sized to large tree, attaining a height of 60-80 ft and a girth up to 7 ft, with a straight cylindrical bole of 15-20 ft under favourable conditions. It bears coriaceous leaves, varying in size and form. It is distributed in the Indian peninsula, extending northward to Bihar, Madhya Pradesh, and Maharashtra, and is one of the most characteristic trees of the dry, mixed, deciduous forests in these regions. |

Habit

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| **Code** | **1392** |
| **Title of the ITK** | **Use of *sindwar (Vitex negundo)* in control of aphids in pumpkin, bottlegourd, beans etc.** |
| **Reference of the ITK*** | Volume 2, page 154 |
| **Name of the plant used in ITK** | *Sindwar*<br>Refer to ITK Code No. 702 |

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| **Code** | **1395** |
| **Title of the ITK** | **Control of pests and diseases in paddy** |
| **Reference of the ITK*** | Volume 2, page 155 |
| **Name of the plant used in ITK** | Cashewnut<br>Refer to ITK Code No. 353 |

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| **Code** | **1409** |
| **Title of the ITK** | **Management of pests and diseases by using plough made of neem tree** |
| **Reference of the ITK*** | Volume 2, page 155 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **1795** |
| **Title of the ITK** | **Use of *mahua* flower to control insect *gaywalan (Scalopendra* sp.)** |
| **Reference of the ITK*** | Volume 2, page 155 |
| **Name of the plant used in ITK** | *Mahua*<br>Refer to ITK Code No. 1389 |

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| **Code** | **1802** |
| **Title of the ITK** | Helicoverpa management by using chilli and garlic |
| **Reference of the ITK*** | Volume 2, page 156 |
| **Names of the plants used in ITK** | Chilli and garlic<br>***Chilli*** : Refer to ITK Code No. 139<br>***Garlic*** : Refer to ITK Code No. 1116 |

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| **Code** | **1804** |
| **Title of the ITK** | **Use of chilli and garlic extract for *Helicoverpa* management in cotton** |
| **Reference of the ITK*** | Volume 2, page 156 |
| **Names of the plants used in ITK** | Chilli and garlic |
| | ***Chilli:*** Refer to ITK Code No. 139 |
| | ***Garlic:*** Refer to ITK Code No. 1116 |

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|---|---|
| **Code** | **1806** |
| **Title of the ITK** | **Control of pests by use *of mahua* cake** |
| **Reference of the ITK*** | Volume 2, page 157 |
| **Names of the plants used in ITK** | *Mahua* and neem |
| | ***Mahua:*** Refer to ITK Code No. 1389 |
| | ***Neem:*** Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **1807** |
| **Title of the ITK** | **Control of pests by using tobacco** |
| **Reference of the ITK*** | Volume 2, page 157 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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| **Code** | **1808** |
| **Title of the ITK** | **Control of pests by using castor** |
| **Reference of the ITK*** | Volume 2, page 157 |
| **Name of the plant used in ITK** | Castor |
| **Names in Indian languages** | Bengali: *bheranda;* Gujarati: *diveligo:* Hindi and Marathi: *erandi;* Kannada: *haralu;* Malayalam: *avanakku;* Tamil: *amanakku, kottai muthu;* Telugu: *amudamuchettu.* |
| **English name** | Castor, castorseed |
| **Botanical name** | *Ricinus communis* Linn. |

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**Active ingredients**

Medicinal purpose castor oil is used as a cathartic. The seed cake obtained as a by-product is used mainly as manure. Small quantities of castor seed are used in the villages as a mild laxative for children. The yield of castor cake varies from 58 to 70% in case of whole seeds. It is entirely used as manure. It is rich in nitrogen.

**Geographical indications**

An annual on perennial bush of occasionally a soft-wooded small tree up to 6 m or more, found nearly throughout India mostly under cultivation up to an elevation of 2,000 m. Leaves green or reddish, 30-60 cm in diameter, palmately 5-11 lobed, lobes serrate and petioles with conspicuous glands; flowers monoecious, in spikes 30-60 cm long, with the staminate flowers on the lower and the pistillate flowers

Habit

Inflorescence Axis

on the upper part of the axis; fruit a capsule, covered with soft spine-like processes and dehiscing into three 2-valved cocci; seeds oblong, smooth, variously coloured, mottled, varying much in size. It is believed to be a native of tropical Africa. Its occurrence in the scrubby jungles of the outer Himalayas in what would appear to be a truly wild state—together with the undoubted antiquity of the knowledge of its use as a drug, as revealed by Sanskrit literature—are held to point to its being a native of India as well as of Africa.

**Code** **1825**

**Title of the ITK** **Use of ash to control insects**

**Reference of the ITK*** Volume 2, page 158

**Name of the plant used in ITK** Neem

Refer to ITK Code No. 151

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| **Code** | : | **1829** |
| **Title of the ITK** | : | **Use of neem extract for pest and disease control in cotton and vegetables** |
| **Reference of the ITK*** | : | Volume 2, page 158 : |
| **Name of the plant used in ITK** | : | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **1842** |
| **Title of the ITK** | **Control of Bihar hairy caterpillar and sorghum ergot by using bio-pesticide** |
| **Reference of the ITK*** | Volume 2, pages 158-159 |
| **Names of the plants used in ITK** | Garlic, green chilli, tobacco, brinjal and hing |
| **Names in Indian languages** | ***Brinjal:*** Assamese: *jati bengani;* Bengali: *begun, kuli-begun, bartaku, mahoti hinpoli;* Hindi: *baingan, bhanta, badanjan;* Kannada: *badanekayi, dodda badane;* Malayalam: *vazhuthana;* Marathi: *vangi;* Oriya: *baigun;* Sanskrit: *vartaku, vatigama, vatigana, bhantaki, jukutam, hingoli;* Tamil: *kathirikai, vankaya;* Telugu: *chirivanga, vangachettu* (plant), *niruvanga, mettavangu, eruvanga, vankaya.* |
| **English name** | ***Brinjal:*** eggplant, brinjal |
| **Botanical name Active ingredients** | ***Brinjal:*** *Solanum melongena* Linn.<br>***Brinjal:*** Root of brinjal plant is credited in the indigenous medicine as anti-asthmatic and in general stimulant. Leaves are said to possess sialagogue and narcotic properties, and are used in cholera, bronchitis, dysuria and asthma. The seeds are used as a stimulant but are apt to lead to dyspepsia and constipation. Brinjal is reported to stimulate the intra-hepatic metabolism of cholesterol. The various parts of the plant are known to contain steroidal alkaloid. The presence of solasodine in the green fruit has been reported. |
| **Geographical indications** | ***Brinjal:*** A herbaceous prickly or sometimes unarmed perennial 0.6—2.4 m tall, cultivated throughout India as an annual for its edible fruit. Leaves ovate, sinuate or lobed; flowers blue, in small clusters of 2-5; berries large, ellipsoid or elongate in various shades of white, yellow or dark-purple, 2.5-25 cm long, glabrous, with thick calyx; seeds |

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many, discoid. It is probably a native of South Asia. Some authors have suggested that it is a native of Africa and even Arabia. Vavilov is of the opinion that its centre of origin is the Indo-Myanmar region. From the study of ancient records it appears that the plant is native to India and was first cultivated in this country; later, its cultivation spread through Iran to Egypt and other North African countries and to Turkey and the Balkans. In China its cultivation has been known for the last 1,500 years.

Twig

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| **Code** | **2062** |
| **Title of the ITK** | **Neemcake as pesticide** |
| **Reference of the ITK*** | Volume 2, page 159 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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|---|---|---|
| **Code** | : | **2063** |
| **Title of the ITK** | : | **Non-pesticidal management programme** |
| **Reference of the ITK*** | : | Volume 2, page 159 |
| **Names of the plants used in ITK** | : | Neem, chilli, garlic and tobacco<br>*Neem:* Refer to ITK Code No. 151<br>***Chilli:*** Refer to ITK Code No. 139<br>***Garlic:*** Refer to ITK Code No. 1116<br>*Tobacco:* Refer to ITK Code No. 139 |

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| **Code** | **2091** |
| **Title of the ITK** | *Ocimum* as a botanical insecticide |
| **Reference of the ITK*** | Volume 2, page 160 |
| **Name of the plant used in ITK** | *Ocimum* |
| **Name in Indian languages** | Gujarati: *damaro, nasabo, sabza;* Hindi: *babui tulsi, gulal tulsi, kali tulsi, marua;* Kannada: *kama kasturi, sajjagida;* Marathi: *marva, sabza',* Oriya: *dhala tulasi, kapur kanti;* Sanskrit: *munjariki, surasa, varvara;* Tamil: *tirnirupachai, karpura tulasi;* Telugu: *bhutulasi, rudrajada, vapudupachha.* |
| **English name** | Sweet basil, common basil |
| **Botanical name** | *Ocimum basilicum* Linn. |
| **Active ingredients** | Oil is extensively used as a flavouring for confectionary. It is used also for scenting dental and oral preparations. The plant is considered stomachic, anthelmintic, diaphoretic, expectorant, carminative, stimulant and pectoral. Seeds possess demulcent, diuretic, stimulant, diaphoretic and cooling properties. |
| **Geographical indications** | An erect, almost glabrous herb, 30-90 cm. high, native of Central Asia and North-West India, cultivated throughout the greater part of India. Leaves ovate-lanceolate, acumi-nate, toothed or entire, glabrous on both surfaces, glandular; flowers white or pale purple, in simple or much-branched racemes, often thyrsoid; nutlets ellipsoid, black, pitted. |

Habit

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| **Code** | **2098** |
| **Title of the ITK** | **Keeping *ajwain* in the cupboard infested with cockroaches** |
| **Reference of the ITK*** | Volume 2, page 161 |
| **Name of the plant used in ITK** | *Ajwain* |

Contents

**Names in Indian languages**

Bengali: *jowan, juvani;* Gujarati: *ajamo, yavan;* Hindi: *ajowan, ajwain;* Kannada: *oma, omakki, omu;* Malayalam: *omam, ayamodakam;* Marathi: *owa, vova;* Tamil: *omum;* Telugu: *vaamu, asampadam, amam.*

**English name**

Carum, ajowan

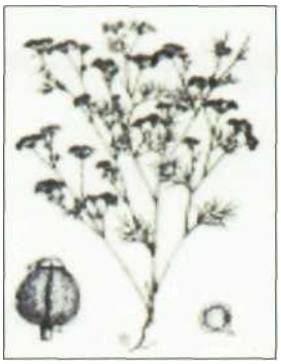
**Botanical name**

*Trachyspermum ammi* (Linn.) Sprague

**Active ingredients**

Ajowan with its characteristic smell and pungent taste is widely used as a spice in curries. It is also used in pickles, certain types of biscuits, confectionery and beverages. It is used as a remedy for indigestion. It is much valued for its antispasmodic, stimulant, tonic and carminative properties. It is administered in flatulence, atonic dyspepsia and diarrhoea, and often recommended for cholera. It is effective in relaxed sore throat and in bronchitis. It has been known to possess antibiotic activity against *Salmonella typhosa, Micrococcus pyogenes* var. *aureus* and *Escherichia coli.* The roots are reported to possess diuretic and carminative properties, and are used in febrile conditions and in stomach disorders. The oil is used in medicine. The action of the oil and its uses are similar to those of thymol. Preliminary pharmacological effect is the production of contraction of the isolated ileum and bronchial musculature in guinea pigs.

**Geographical indications**



Schemaic representation

An erect, glabrous or minutely pubescent, branched annual, up to 90 cm tall, cultivated almost throughout India. Stems striate; leaves rather distant, 2-3 pinnately divided, segments linear, ultimate segments 1.0 - 2.5 cm long; flowers in terminal or seemingly lateral pedunculate, compound umbels, white, small; fruits ovoid, muricate, aromatic cremocarps, 2-3 mm long, grayish-brown; mericarps compressed, with distinct ridges and tubercular surface, 1-seeded. The herb is said to be a native of Egypt. Although it is cultivated in the Mediterranean region and in South West Asian countries such as Iraq, Iran, Afghanistan and Pakistan, ajowan is chiefly produced in India. It is grown throughout the country, mainly in the plains, but flourishes equally well at higher altitudes in the plateaux and the hills. It is grown on a commercial scale in Madhya Pradesh, Andhra Pradesh, Gujarat, Maharashtra and Uttar Pradesh; it is also grown to a considerable extent in Rajasthan, Bihar and West Bengal.

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| **Code** | **2099** |
| **Title of the ITK** | **Neemseed-kernel extract against gram-pod borer** |
| **Reference of the ITK*** | Volume 2, page 161 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **19** |
| **Title of the ITK** | **Control of sucking pests in cotton and chilli** |
| **Reference of the ITK*** | Volume 2, page 162 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **126 (a)** |
| **Title of the ITK** | **Pest-control practices** |
| **Reference of the ITK*** | Volume 2, page 162 |
| **Names of the plants used in ITK** | *Thumbai, kuppaimeni, thulasi, datura, neem, nochi, varikkampattikaai* and *iluppai* |
| **Names in Indian languages** | ***Thumbai:*** Bengali and Hindi: *chhota halkusa;* Kannada: *thumbe gida;* Malayalam: *thumba;* Tamil: *thumbai;* Telugu: *tummachettu, tummi.*<br>***Kuppaimeni:*** Bengali: *muktajhuri;* Gujarati: *dadano vanchhi-kanto;* Hindi: *khokli, kuppi;* Kannada: *chalmari, kuppigidda, tuppakire;* Malayalam: *kuppamani;* Marathi: *khajoti, khokla;* Oriya: *indramaris;* Sanskrit: *harita-manjari;* Tamil: *kuppameni, poonamayakki;* Telugu: *kuppichettu, moorkondachettu, mulakandachettu, pappantichettu.*<br>***Thulasi:*** Hindi: *kali tulsi, mamri;* Sanskrit: *ajaka, gambhira, kuthera;* Kannada and Tamil: *nayi tulasi;* Malayalam: *kattu tulasi;* Telugu: *kukka tulasi.* |
| **English names** | ***Kuppaimeni:*** Indian acalypha<br>***Thulasi:*** Hoary basil |
| **Botanical names** | ***Thumbai:*** *Leucas aspera* Spreng. |

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***Kuppaimeni:*** *Acalypha indica* Linn.

***Thulasi:*** *Ocimum canum* Sims

**Active ingredients**

***Thumbai:*** The plant is fragrant and used as a pot herb. It is commonly used as antipyretic. The juice of leaves is used as an external application for psoriasis, chronic skin eruptions and painful swellings. In north Bengal, flowers are given with honey for cough and colds in children.

***Kuppaimeni:*** The herb is said to possess diuretic, carminative, expectorant and emetic properties, but it causes gastro-intestinal irritation. A decoction of the herb is used as a safe and speedy laxative; and also to cure tooth and earache. In Homoeopathy the herb is used as a remedy for severe cough associated with bleeding from the lungs, haemoptysis and incipient phthisis. A paste of the leaves is applied to burns; with lime juice it is useful in early cases of ringworm. Fresh juice of the leaves is applied with **oil,** salt or lime in rheumatoid arthritis and to cure scabies and other skin affections. The powdered leaves are used for bed-sores and maggot-infested wounds. Alcoholic extracts of the tender shoots, leaves and roots showed activity against *Micrococcus pyogenes* var. *aureus* and *Escherichia coli.*

***Thulasi:*** The leaves are used for flavouring sauces, soups and salads. The seeds are considered diuretic and tonic, and are used in the preparation of cooling drinks. A decoction of the plant is taken for coughs and that of leaves for dysentery; it is also used as a mouth wash for relieving toothache.

**Geographical indications**

***Thumbai:*** A herbaceous, much-branched, erect or diffuse annual, 30-60 cm high, found more or less throughout India as a weed in cultivated fields, waste lands and road sides. Leaves subsessile, linear or narrowly oblong-lanceolate, entire or crenate; flowers small, white, in dense terminal or axillary whorls; nutlets small, oblong, smooth, brown.

***Kuppaimeni:*** An erect, annual herb, 30-100 cm in height, occurring as a weed in gardens, in waste places and along the road-sides throughout the plains of India, ascending the hills in Orissa up to 210 m. Leaves ovate or rhombic-ovate, 2.5-7.5 cm long with slender petioles which may be longer than the blades; spikes slender, erect, up to 7.6 cm, terminal or axillary with male flowers minute, clustered at

the top, and female flowers with accrescent, broad, leafy bract; capsules often one-seeded, concealed in the bract; seeds pale-brown, ovoid, acute, smooth. The plant grows as an obnoxious weed.

Habit

**Thulasi***:* An erect, sweet-scented, pubescent herb, 30-60 cm high, found growing in abundance near cultivated fields and on waste lands nearly throughout India. Leaves elliptic-lanceolate, entire or faintly toothed, almost glabrous, gland-dotted; flowers small, white, pink or purplish, in more or less closely set whorls in spiciform racemes; nutlets narrowly ellipsoid, punctulate, black.

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| **Code** | : | **126 (c)** |
| **Title of the ITK** | : | **Pest management in cotton** |
| **Reference of the ITK*** | : | Volume 2, page 162 |
| **Names of the plants used in ITK** | | Turmeric and castor |
| | | **Turmeric:** Refer to ITK Code No. 481 |
| | | **Castor:** Refer to ITK Code No. 1808 |

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| **Code** | **144** |
| **Title of the ITK** | **Herbal pesticide for chilli and paddy** |
| **Reference of the ITK*** | Volume 2, page 163 |
| **Names of the plants used in ITK** | *Kattunotchi, siru thombai* and *peruthumbai* |
| **Botanical name** | **Peru thumbai*:*** *Leucas martinicensis* R. Br. |
| **Active ingredients** | **Peru thumbai*:*** Leaves possess insecticidal properties and are burnt in rooms for expelling mosquitoes in West Africa. An infusion of the plant is given for gastro-intestinal troubles and colds. |

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| **Geographical indications** | ***Peru thumbai:*** A tall, stout annual herb, 0.6-1,2 m high, found in Bihar, Chotanagpur, Deccan and South India. Leaves opposite, ovate, oblong or lanceolate, obtuse, coarsely crenate-serrate; flowers small, white, in axillary globose whorls; nutlets obovoid-oblong, dark brown, shining.  Habit |
| **Code** | **169 (a)** |
| **Title of the ITK** | **Control of heliothis in groundnut** |
| **Reference of the ITK*** | Volume 2, page 163 |
| **Name of the plant used in ITK** | *Prosopis juliflora*<br>Refer to ITK Code No. 149 |
| **Code** | **244** |
| **Title of the ITK** | **Control of cutworm in cotton** |
| **Reference of the ITK*** | Volume 2, page 164 |
| **Names of the plants used in ITK** | *Periya kumuttikai, perandai kodi, yellow arali, neem* and *Sesbania* |
| **Names in Indian languages** | ***Periya kumuttikai:*** Assamese: *mahakal;* Bengali and Hindi: *indrayan, makal;* Gujarati: *indrak, indravana, indrayan;* Kannada: *pavamekkakayi, tumtikayi;* Malayalam: *peykommutti;* Marathi: *indrayan, kuduvrindavana;* Sanskrit: *chitraphala, indravarooni, mehendravaruni;* Tamil: *peykkumutti, verittumatti;* Telugu: *eetiputcha, paparabundama;* Urdu: *indrayan.*<br>***Perandai kodi:*** Bengali: *harbhanga, harjora;* Gujarati: *chodhari, hadsand, vedhari;* Hindi: *hadjora, harsankari;* Kannada: *mangaravalli;* Malayalam: *changalamparanda, piranta;* Marathi: *chaudhari, hursanher, kandavela;* Oriya: *hadabhanga;* Sanskrit: *assthisandana, vajravalli;* Tamil: *pirandai, vachiravalli;* Telugu: *nalleeru-teega.*<br>***Yellow arali:*** Kannada: *koreneklar;* Tamil: *sonapatti;* Telugu: *pachagotla.* |

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| | ***Sesbania:*** Bengali: *agati, agusta, bak, bagphal;* Gujarati: *agathio, ayathio;* Hindi: *bak, agasti, basna, hatiya;* Kannada: *agase, agache;* Malayalam: *akatthi, athi;* Marathi: *madga, agasta, shevari;* Oriya: *buko, ogosti;* Sanskrit: *agati, agasti, anari;* Tamil: *agathi, peragathi;* Telugu: *avasinana, avesi.* |
| **English name** | ***Periya kumuttikai:*** bitter-apple, colocynth |
| | ***Perandai kodi:*** bone-setter, edible-stemmed vine |
| | *Sesbania:* agathi, swamp pea, sesban |
| **Botanical name** | ***Periya kumuttikai:*** *Citrullus colocynthis* (Linn.) Schrad. |
| | ***Perandai kodi:*** *Cissus quadrangula* Linn. |
| | ***Yellow arali:*** *Tecoma starts* (Linn.) H. B. & K. |
| | ***Sesbania:*** *Sesbania grandiflora* Pers. |
| **Active ingredients** | ***Periya kumuttikai:*** The meal left after extraction of oil is a good source of protein. The treatment of seeds with alcohol followed by defattening renders the meal non-toxic and suitable for use as cattle feed. The oilcake can be successfully blended in poultry feed. A compound preparation Livol, of colocynth is a remedy for hepatic disorders and promotes growth and production in farm animals. All parts of the plant are employed in indigenous system of medicine. The root is given in ascites, blood purification, ophthalmia, piles, jaundice, urinary diseases and rheumatism. |
| | ***Perandai kodi:*** The stem is useful in piles and its juice is beneficial as alterative in scurvy and irregular menstruation, and in diseases of the ear and in nose-bleeding. A paste of the stem is given in asthma, and may be useful for muscular pains, burns and wounds, bites of poisonous insects and for saddle-sores of horses and camels. The powder of dry shoots with dry ginger and black pepper is given for body-pains. The infusion of the plant is anthelmintic. The extract of the plant exhibits cardiotonic and androgenic properties. Alcoholic extract of the stem showed activity against *Escherichia coli* Castell. & Chalm. |
| | **Yellow arali:** The root is reported to be a powerful diuretic, vermifuge and tonic. Tecomine and tecostanine obtained from the leaves are reported to be potent hypoglycaemic agents when given intravenously. |

**Contents**

*Sesbania:* Applied to painful swellings, scabies, ulcerated tongue and bruises etc. for cure. Useful in diarrhoea and dysentery and in large doses it is emetic and aperient. Leaves are diuretic and laxative, and contain a non-poisonous saponin-like substance.

**Geographical indications**

***Periya kumuttikai:*** A scabrid perennial with prostrate or climbing angular stems and bifid tendrils, found wild in the warm, arid and sandy parts throughout India, up to 1,500 m. Leaves ovate or triangular, deeply 3-lobed, lobes sinuately pinnatifid; flowers monoecious, yellow, solitary, axillary; pepo or gourd 4-10 cm in diameter, smooth, globose, green mottled with yellow blotches, pulp bitter, spongy; seeds numerous, white or light-brown. Colocynth is most abundant in north-western plains of India, especially in the Barmer, Bikaner, Jaisalmer and Jodhpur districts of Rajasthan, and in Gujarat where it forms large patches on sandy dunes, sandy undulating plains and interdunal areas. Its quick-growing capacity and hardy and drought-resistant nature makes it suitable for stabilization of sand-dunes and afforestation of arid zones. On the other hand, its cultivation in forest plantations is unsuitable as *tumba* seeds attract some species of desert rats that cause damage to tree plantations. Colocynth grows best in bright light and an annual rainfall of 150-300 mm. Fully developed yellow ripe fruits are available by September-November.

Habit

Climber showing flowers

***Perandai kodi:*** A fleshy, cactus-like, jointed climber, distributed throughout India, particularly in the hotter parts; also cultivated in gardens. Stem slender, dichotomously branched, sub-angular, glabrous, brown, fleshy, fibrous, with 4-winged internodes and a leaf-opposed, persistent tendril at some nodes, aerial roots developing during the rainy season, leafless when old, 5-15 cm long; leaves cordate, broadly ovate or reniform, crenate-serrate, sometimes 3-7 lobed, glabrous, 2.5-7.5 cm x 3-9 cm; flowers small, greenish white, in short umbellate cymes; berries obovoid or globose, succulent, very acrid, pea-sized, 1 -seeded.

**Yellow arali:** An erect shrub or small tree, planted in gardens in the plains throughout India and in the hills, up to an altitude of 1,500 m. It is naturalized in most parts of India, and is also found as an escape in the waste, dry places near gardens and houses. Leaves odd-pinnate: leaflets 5-11, almost sessile, oblong-ovate, lanceolate, serrate; flowers yellow, fragrant, in terminal panicle, found throughout the

Flower

year; capsules linear, 12-20 cm x 7 cm, compressed; seeds numerous, each with 2, thin wings.

*Sesbania:* A short-lived, quick-growing, soft-wooded tree, 6-9 m high and 0.6 m in girth. It is a native of Malaysia and is grown in many parts of India such as Punjab, Delhi, West Bengal, Assam and the Andamans. Leaves 15-30 cm long, abruptly pinnate; leaflets 41-61, linear-oblong, glabrous, 2.5-5.0 cm x 0.5-1.6 cm; racemes 2 - 4-flowered, short, axillary; flowers 6.0-10 cm long with showy, fleshy, white, pink or crimson petals; pods pendulous 30.0-45.0 cm x 0.6-0.8 cm, rather flat and somewhat 4-cornered, non-torulose, septate with swollen margins and 15-50 pale-coloured seeds.

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| **Code** | 344 |
| **Title of the ITK** | **Management of yellow stem-borer in paddy by use of*parasi* *(Cleistanthus collinus)* leaf** |
| **Reference of the ITK*** | Volume 2, page 164 |
| **Name of the plant used in ITK** | *Cleistanthus collinus* Refer to ITK Code No. 357 |

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| **Code** | **1411** |
| **Title of the ITK** | **Biological control of pests** |
| **Reference of the ITK*** | Volume to 2, page 166 |
| **Name of the plantlised in ITK** | *Sindwar* Refer to ITK Code No. 702 |

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| **Code** | **1417** |
| **Title of the ITK** | **Control of shoot and fruit borers by tobacco-soaked water with soap** |
| **Reference of the ITK*** | Volume 2, page 167 |
| **Name of the plant used in ITK** | Tobacco Refer to ITK Code No. 139 |

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| **Code** | **1809** |
| **Title of the ITK** | **Control of fruit fly by *tulsi* leaf extract** |
| **Reference of the ITK*** | Volume 2, page 167 *Tulsi* |
| **Name of the plant used in ITK** | Bengali: *tulsi;* Gujarati: *tulsi;* Hindi: *tulsi, baranda, kala tulsi;* Kannada: *vishnu tulasi, kari lulasi, sri tulasi;* Malayalam: *trittavu;* Marathi: *tulasa, tulasi chajadha;* Sanskrit: *ajaka, brinda, manjari, parnasa, patrapushpha, suvasa tulasi;* Tamil: *thulasi;* Telugu: *tulasi, brynda, gaggera, krishna tulasi, nalla tulasi* |
| **Names in Indian languages** | Sacred basil, holy basil |
| **English name** | *Ocimum sanctum* Linn. |
| **Botanical name** | Juice of leaves possesses diaphoretic, anti-pyretic stimulating and expectorant properties. It is used in catarrah and bronchitis, applied to the skin and ringworm and other cutaneous diseases and dropped into the ear to relieve ear-ache, and infusion of the leaves is used as a stomachic and gastric disorder in children. A decoction of the leaves is given as a diaphoretic in malarial fever. The seeds are mucilagious and demulcent, and are given in disorder of genito-urinary system. |
| **Active ingredients** | |
| **Geographical indications** | An erect, herbaceous, much-branched, softly hairy annual, 30-75 cm high, found throughout India ascending up to 1,800 m in the Himalayas, and in the Andaman and Nicobar Islands. Leaves elliptic-oblong, acute or obtuse, entire or serrate, pubescent on both sides, minutely gland-dotted; flowers purplish or crimson, in racemes, close whorled; nutlets sub-globose or broadly ellipsoid, slightly compressed, nearly smooth, pale-brown or reddish, with small black markings. |

Habit

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| **Code** | **1923** |
| **Title of the ITK** | **Control of pests by using *gurvel,* onion and turmeric** |
| **Reference of the ITK*** | Volume 2, page 168 |
| **Name of the plant used in ITK** | *Gurvel,* onion, chilli and turmeric<br>***Onion:*** Refer to ITK Code No. 689<br>**Chilli:** Refer to ITK Code No. 139<br>***Turmeric:*** Refer to ITK Code No. 481 |

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| **Code** | **2305(d)** |
| **Title of the ITK** | **Crop production and protection** |
| **Reference of the ITK*** | Volume 2, pages 168-172 |
| **Names of the plants used in ITK** | *Kuda,* neem, *kadu nimb*, *kubhali* or *triphala*, *nigadi* and teak |
| **Name in Indian languages** | ***Kuda:*** Assamese: *dhutkhuri, dudkhuri;* Bengali: *kurchi;* Gujarati: *dhowda, kuda, kari;* Hindi: *kurchi, karchi, karra, kora, kuar, kureya, kura;* Kannada: *beppale, koodsaloo, korchie;* Malayalam: *kodagapala;* Marathi: *kodaga, kuda, dola-kuda, pandhara-kuda;* Oriya: *kherwa, pita korwa, patru kurwa;* Punjabi: *keor, kerwar;* Sanskrit: *kutaja, kalinga;* Tamil: *veppalei, kodagapalei, indrabam;* Telugu: *pala, kodaga.*<br>***Kadu nimb:*** Assamese: *thamaga;* Bengali: *mahanim, ghoranim;* Gujarati: *bakam limbodo;* Hindi: *bakain, drek;* Kannada: *arebevu, hutchu bevu;* Malayalam: *karin vembu, sima veppu;* Marathi: *pejri, Padrai;* Punjabi: *drek;* Tamil: *malai vembu;* Telugu: *turaka vepa.*<br>***Kubhali:*** Assamese: *bajarmani, bajarmali;* Bengali: *bazinali, kantahorina, tambol;* Gujarati: *tejabala;* Hindi: *badrang;* Kannada: *jummina, jimmi-mara;* Malayalam: *katmurrikkum, kallamanaku, mullillam;* Marathi: *tirphal, chirphal, tisal;* Sanskrit: *ashvaghra, atitejani, sutejasi;* Tamil: *iratehai, elarangom;* Telugu: *rhetsamaramu.*<br>***Teak:*** Assamese: *chingjagu;* Bengali: *segun;* Gujarati: *saga, sagach;* Hindi: *sagun, sagwan;* Kannada: *jadi, sagwani, tega, tyagadamara;* Malayalam: *thekku, tekka;* Marathi: *sag,* |

Contents

*saga, sagwan;* Oriya: *singuru;* Tamil: *tekkumaram, tekku;* Telugu: *adaviteeku, peddateeku* (tree), *teekuchekka* (wood), *teeku.*

**English names**

***Kadu nimb:*** Persian lilac, bead tree

***Teak:*** Teak

**Botanical names**

***Kuda*** *: Holarrhena antidysenterica* (Linn.) Wall.

***Kadu nimb:*** *Melia azadirach* Linn.

***Kubhali:*** *Zanthoxylum rhetsa* DC.

*Teak: Tectona grandis* Linn.

**Active ingredients**

***Kuda:*** The bark has astringent, antidysentric, anthelmintic, stomachic, fabrifuge and tonic properties. It is used in the treatment of amoebic dysentery and diarrhoea. Stem and root barks are medicinal and have long been used as in India in the treatment of dysentry. The principal alkaloid is conessine; it increases coronary outflow in the isolated rabbit heart, induces narcosis in frog and produces local anaesthesia in guinea pigs.

***Kadu nimb:*** Leaves contain alkaloids, carotenoid and meliatin which act as insect repellent. The leaf juice is considered anthelmintic, antilithic, diuretic and emmenagogue; a decoction of the leaves is regarded as astringent and stomachic. Apoultice of the flower is applied to eruptive skin diseases and for killing lice. The fruit contains an alkaloid azaridine and bitter principle named bakayanin.

***Kubhali:*** Bark is bitter and aromatic. Fruits are digestive and appetizing, and the tender leaves are cooked and eaten in Assam. Fruits are prescribed in atrabiliary dyspepsia and also used in asthma, bronchitis, heart troubles, toothache and rheumatism.

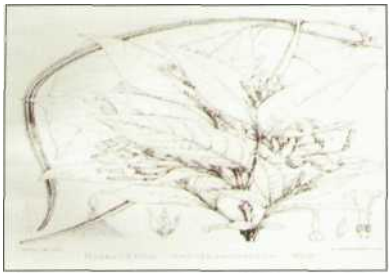
**Teak:** Wood contains petroleum ether, alcohol, benzene, pentosans, lignin, halocellulose, hemi-cellulose and silica. Most of the substituted anthrax-quinone and some other substances like lapachol, desoxy-lapachol and cresyl methyl ether are responsible for the termite-resistant property. Some constituents like lapachol have sensitizing effect and may cause allergic eczema or severe itching to some persons. The powder of teak wood is said to be useful in allaying

Contents

skin inflammation caused by *Melanorrhoea usitatissi.* The leaves contain about 6% tannin. Kernel oil is reported to promote the growth of hair. Flowers are considered in biliousness, bronchitis and urinary discharge. The bark contains tannin, petroleum ether, alcohol and benzene. The bark is regarded as an astringent and is considered useful in bronchitis.

**Geographical indications**

: ***Kuda:*** Adeciduous laticiferous shrub or small tree, 30-40 ft high and up to 4 ft in girth, with a clear bole of 10-20 ft, occurring almost throughout India, up to an altitude of 4000 ft, often gregariously, in deciduous forests and open waste lands; It is especially abundant in the sub-Himalayan tract. Bark rather rough, pale-brownish or grayish, peeling off in irregular flakes; leaves opposite, subsessile, elliptic or ovate-oblong, 4-12 in. x 2-5 in., membranous; flowers white, in terminal corymbose cymes; follicles divaricate, cylindric, 6-18 in. long and 0.2-0.4 in. in diameter, usually white spotted; seeds light-brown, 0.3-0.5 in. long, 900-1,000 seeds weighing 1 oz., 25-30 in a follicle: coma-brownish, spreading, 1-2 in. long.



Schematic representation

***Kadu nimb:*** *A* moderate-sized deciduous tree, 9-12 m. high, with a cylindrical bole 3.5 m long x 1-1.2 m girth, found growing wild in the sub-Himalayan tract up to 1,800 m. Bark dark-grey with shallow longitudinal furrows; leaves bi- or occasionally tripinnate; leaflets ovate or lanceolate, serrate; flowers lilac, fragrant, in axillary panicles; fruit an ellipsoid-globose drupe with 4-5 seeds. It is a native of West Asia and is now naturalized throughout the warm countries. In India it is often cultivated in the plains as an ornamental avenue tree.

Flowers

***Kubhali:*** A lofty, deciduous tree, up to 35 m tall, with a spreading crown and a bole of 4-6 m, commonly found in the evergreen monsoon forests of the foot-hills of Assam and Meghalaya and in the eastern and western ghats in peninsular India. Main stem generally armed with broad conical spines, 2-3 cm long; branchlets usually sparsely armed with straight or ascending prickles, often swollen and hollow, apparently housing ants; bark cream-coloured or yellowish-grey, studded with conical spines, thick, deeply and finely reticulate-fissured; leaves paripinnate or imparipinnate, 30-40 cm long, glabrous, clustered at the ends of branches: leaflets 5-8 pairs, opposite or subopposite,

ovate to elliptic, chartaceous, occasionally with scattered pellucid dots, oblique, entire to glandular-crenate; flowers white to yellowish-white, in terminal paniculate cymes which may sometimes be located in the upper leaf-axils; follicles globose, aromatic, red, rugose, 6-7 mm in diameter; seeds blue-black, subglobose, shining.

Habit

**Teak:** A tree with rounded crown, very variable in size according to **its** habitat, indigenous to the peninsular India and Madhya Pradesh, extending to parts of Rajasthan, southern Uttar Pradesh and Orissa. In favourable localities the tree attains large size, with tall, clean and cylindrical bole, carrying its girth well up the stem; but with advanced age the stem becomes more fluted and buttressed at the base. Branchlets characteristically quadrangular and channelled; bark fibrous, light-brown or grey, 4—18 mm, thick, exfoliating in long, thin strips; leaves broadly elliptical or obviate, 30-60 cm x 20-30 cm, gradually becoming smaller, finally becoming bract-like in inflorescence, often larger in coppice-shoots and young plants, coriaceous, rough above, stellately-grey tomentose beneath, possessing minute, red, glandular dots which turn black; flowers small, white, sweet scented, numerous in 45-90 mm long, terminal panicles which are conspicuous from a distance; fruits hard, bony, irregularly globose, somewhat pointed at the apex, 10-15 mm in diameter 4-celled, enveloped by light-brown, bladder-like calyx; seeds 1-3, rarely 4 in a fruit, marble-white, ovate, 4-8 mm long.

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| **Code** | **2389** |
| **Title of the ITK** | **Use of *vasambu* powder and cow urine for seed selection and seed treatment of rice** |
| **Reference of the ITK*** | Volume 2, supplement I, page 29 |
| **Name of the plant used in ITK** | *Vasambu*<br>Refer to ITK Code No. 138 |

| | |
|---|---|
| **Code** | **2417** |
| **Title of the ITK** | **Use of *Calotropis gigantea* to prevent attack of thrips in paddy nursery** |
| **Reference of the ITK*** | Volume 2, supplement I, page 29 |
| **Name of the plant used in ITK** | *Calotropis*<br>Refer to ITK Code No. 474 |

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| **Code** | **:** | **2403** |
| **Title of the ITK** | **:** | **Use of deodar oil for control of insect-pests in paddy nursery** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 29 : |
| **Name of the plant used in ITK** | : | Deodar |
| | | Refer to ITK Code No. 697 |

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|---|---|
| **Code** | **2414** |
| **Title of the ITK** | **Use *otneem* cake to control stem-borer, bacterial leaf blight and gall fly** |
| **Reference of the ITK*** | Volume 2, supplement I, page 31 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 15**1** |

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|---|---|
| **Code** | **2396** |
| **Title of the ITK** | **Use *of neem* leaves to control pest incidence in rice fields** |
| **Reference of the ITK*** | Volume 2, supplement I, page 31 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **2385** |
| **Title of the ITK** | **Use of *neem* oil, soil and fresh cowdung to control stem-borer and leaf-roller in rice** |
| **Reference of the ITK*** | Volume 2, supplement I, page 31 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **:** | **2398** |
| **Title of the ITK** | **:** | **Use of leaves and branches of *neem, sinduar, bhelwa* and *palas* to cure diseases in crops** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 32 : |
| **Names of the plant used in ITK** | : | Neem, *sindwar*, *bhelwa* and *palas*<br>***Neem**:* Refer to ITK Code No. 151<br>***Sinduar:*** Refer to ITK Code No. 702<br>***Palas:*** Refer to ITK Code No. 1383 |

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|---|---|
| **Code** | **2406** |
| **Title of the ITK** | **Use of *Strychnos nux-vomica* to control insects in rice fields** |
| **Reference of the ITK*** | Volume 2, supplement I**,** page 32 |
| **Name of the plant used in ITK** | *Strychnos*<br>Refer to ITK Code No. 168 |

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|---|---|
| **Code** | **2367** |
| **Title of the ITK** | **Use of *vasambu (Acorus calamus)* to prevent pest attack in rice** |
| **Reference of the ITK*** | Volume 2, supplement I, page 32 |
| **Name of the plant used in ITK** | *Vasambu*<br>Refer to ITK Code No. 138 |

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|---|---|
| **Code** | **2390** |
| **Title of the ITK** | **Use of *pirandai (Cissus quadrangularis)* to control pests of paddy fields** |
| **Reference of the ITK*** | Volume 2, supplement I, page 33 |
| **Name of the plant used in ITK** | *Pirandai*<br>Refer to ITK Code No. 244 |

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| **Code** | **2391** |
| **Title of the ITK** | **Use of fruits of *sausage (Kigelia pinnata)* tree to reduce pest incidence in rice** |
| **Reference of the ITK*** | Volume 2, supplement I, page 33 |
| **Name of the plant used in ITK** | *Sausage* |
| **English name** | Common sausage tree |
| **Botanical name** | *Kigelia pinnata* DC. |
| **Active ingredients** | Dry fruit may be used for the preparation of active carbon. The fruit is used in Africa as dressing for ulcers and for syphilis and rheumatism; it has purgative properties. The bark is used in rheumatism, dysentery and venereal diseases. |
| **Geographical indications** | A medium-sized spreading tree of rapid growth, with short trunk and long, distorted branches, cultivated in many parts of India as an ornamental and road-side tree. The bark of the tree is greyish-brown, rough; leaves imparipinnate: leaflets 7-9, elliptic-oblong or obovate, entire or serrate, 3-6 in. long; flowers deep chocolate-red, in long pendulous panicles; fruit gourd-like, up to 8 in. long x 5 in. in diameter, hanging by a rope-like peduncle up to 7 ft long; seeds many, embedded in fibrous pulp. |


Flower


Fruits

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| **Code** | **2386** |
| **Title of the ITK** | **Use of mixture of garlic, chilli and kerosene to control earhead bug in rice** |
| **Reference of the ITK*** | Volume 2, supplement I, page 34 |
| **Names of the plant used in ITK** | Garlic and chilli<br>**Garlic:** Refer to ITK Code No. 1116<br>**Chiili:** Refer to ITK Code No. 139 |

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| **Code** | **2394** |
| **Title of the ITK** | **Use of *Calotropis gigantea* to control brown planthopper in nursery as well as in field** |
| **Reference of the ITK*** | Volume 2, supplement I, page 36 |
| **Name of the plant used in ITK** | *Calotropis*<br>Refer to ITK Code No. 474 |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Use of extract of neem leaves and *Parthenium* to check infestation of *Helicoverpa sp.*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 31 |
| **Names of the plant used in ITK** | Neem and *Parthenium*<br>***Neem:*** Refer to ITK Code No. 151<br>***Parthenium:*** Refer to ITK Code No. 147 |

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| **Code** | **2383** |
| **Title of the ITK** | **Use of poultry manure and neem cake to control root rot and tiller rot** |
| **Reference of the ITK*** | Volume 2, supplement I, page 37 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |
| **Thematic area** | Pest and disease management |

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|---|---|
| **Code** | **2375** |
| **Title of the ITK** | **Control of blast in rice by application *oitulsi* extract** |
| **Reference of the ITK*** | Volume 2, supplement I, page 37 |
| **Name of the plant used in ITK** | Tulsi<br>Refer to ITK Code No. 2091 |

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|---|---|
| **Code** | **2374** |
| **Title of the ITK** | **Control of blast in rice by application *aibael*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 31 |
| **Name of the plant used in ITK** | *Bael*<br>Refer to ITK Code No. 1196 |

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| **Code** | 2373 |
| **Title of the ITK** | **Control of blast in rice by application of *karada (Xylia xylocarpa)* and cowdung slurry** |
| **Reference of the ITK*** | Volume 2, supplement I, page 38 |
| **Name of the plant used in ITK** | *Karada* |
| **Name in Indian languages** | Hindi: *jambu, suria;* Kannada: *tirawa, jambe, shilpe, aravutakku, betadavarike, hommavarika, takku;* Malayalam: *irumulla, irumul, kadamarom, irimpullam;* Marathi: *jamba, suria;* Oriya: *boja kongora, dhamoni, tangini;* Sanskrit: *scimsapa, kanakakuli;* Tamil: *irul, iruvel, aruvapalam;* Telugu: *kondatangeedu, eravalu, bojeh, errachennamangi.* |
| **Botanical name** | *Xylia xylocarpa* Roxb. |
| **Active ingredients** | A decoction of the bark powder is given with honey as a vermifuge and for vomiting, swellings, gonorrhoea, diarrhoea and ulcers. Bark is used for tanning. |
| **Geographical indications** | A large, deciduous, unarmed tree, up to 18 m. in height with a girth of 2 m, found throughout central and south India up to an elevation of 600 m, extending in the east up to Bihar and Orissa. Bark smooth, reddish-grey, exfoliating in large, irregular flakes; leaves bipinnate; leaflets 4-10, oblong, with glands on the rachis between the upper leaflets, 7.5-15.0 cm long; flowers white to yellowish white, sessile, in globose, peduncled head crowded on short branchlets; pods 10-15 cm long, flat, woody, 6-10 seeded; seeds brown. |

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| **Code** | **:** | **2402** |
| **Title of the ITK** | **:** | **Control of blast of paddy** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 38 |
| **Name of the plant used in ITK** | : | *Bad*<br>Refer to ITK Code No. 1196 |

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|---|---|---|
| **Code** | **:** | **2400** |
| **Title of the ITK** | **:** | **Treatment of maize seed with deodar oil** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 40 : |
| **Name of the plant used in ITK** | : | Deodar<br>Refer to ITK Code No. 697 |

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| **Code** | 2303 |
| **Title of the ITK** | **Spray of a mixture of garlic extract and monocrotophos to control bollworm in cotton** |
| **Reference of the ITK*** | Volume 2, supplement I, page 44 |
| **Name of the plant used in ITK** | Garlic<br>Refer to ITK Code No. 1116 |

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|---|---|
| **Code** | **2303** |
| **Title of the ITK** | **Use of tobacco decoction to control cotton bollworm** |
| **Reference of the ITK*** | Volume 2, supplement I, page 45 |
| **Name of the plant used in ITK** | Tobacco<br>Refer to ITK Code No. 139 |

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|---|---|
| **Code** | **2303** |
| **Title of the ITK** | **Use of garlic, and chilli extract to control pests in cotton** |
| **Reference of the ITK*** | Volume 2, supplement I, page 45 |
| **Names of the plants used in ITK** | Garlic and chilli<br>**Garlic:** Refer to ITK Code No. 1116<br>**Chiili:** Refer to ITK Code No. 139 |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Use of neem seed powder to control bollworm and sucking pests of cotton, chilli and onion** |
| **Reference of the ITK*** | Volume 2, supplement I, page 45 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Use of crude extract of custard apple leaves in castor and pigeonpea to control pests** |
| **Reference of the ITK*** | Volume 2, supplement I, page 45 |
| **Name of the plant used in ITK** | Custard apple<br>Refer to ITK Code No. 1387 |

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| **Code** | : | 2303 |
| **Title of the ITK** | : | **Use of neem oil+Nirma mixture to control pests and diseases of grapes** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 55 |
| **Name of the plant used in ITK** | : | Neem |
| | | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **2303** |
| **Title of the ITK** | **Use *oi hing* kada (asafoetida) to control microbes** |
| **Reference of the ITK*** | Volume 2, supplement I, page 55 |
| **Name of the plant used in ITK** | *Hing* kada |
| | Refer to ITK Code No. 702 |

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|---|---|
| **Code** | **2303** |
| **Title of the ITK** | **Control of whitefly by using leaves of *Lantana camara*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 56 |
| **Name of the plant used in ITK** | *Lantana camara* |
| | Refer to ITK Code No. 1656 |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Rat control in wheat by using flowers or inflorescence of *Glyricidia sepium* plant** |
| **Reference of the ITK*** | Volume 2, supplement I, page 57 |
| **Name of the plant used in ITK** | *Glyricidia sepium* |
| | Refer to ITK Code No. 1836 |

| | |
|---|---|
| **Code** | **2382** |
| **Title of the ITK** | **Control of rhinoceros beetle in coconut by castor-seed extract** |
| **Reference of the ITK*** | Volume 2, supplement I, page 58 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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| **Code** | **:** | **2393** |
| **Title of the ITK** | **:** | **Use of *bhang* as pesticide** |
| **Reference of the ITK*** | : | Volume 2, supplement I**,** page 59 |
| **Name of the plant used in ITK** | : | *Bhang*<br>Refer to ITK Code No. 1479 |

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# GRAIN/SEED STORAGE

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| **Code** | **37** |
| **Title of the ITK** | **Storage of foodgrains** |
| **Reference of the ITK*** | Volume 2, page 215 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **216** |
| **Title of the ITK** | **Storing of paddy with *Neem* leaves or coal fly-ash** |
| **Reference of the ITK*** | Volume 2, page 216 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **532** |
| **Title of the ITK** | ***Kothar* for storage of seeds and foodgrains** |
| **Reference of the ITK*** | Volume 2, page 216 |
| **Name of the plant used in ITK** | Deodar |
| | Refer to ITK Code No. 697 |

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|---|---|
| **Code** | **738** |
| **Title of the ITK** | **Use of turmeric powder and mustard oil for grain storage** |
| **Reference of the ITK*** | Volume 2, page 216 |
| **Names of the plants used in ITK** | Turmeric and mustard |
| | **Turmeric:** Refer to ITK Code No. 48 |
| | **Mustard:** Refer to ITK Code No. 481 |

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| **Code** | **753** |
| **Title of the ITK** | **Storage of foodgrains** |
| **Reference of the ITK*** | Volume 2, pages 216,217 |
| **Name of the plant used in ITK** | Walnut |

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| **Names in Indian languages** | *Akhrot, akrut, akhor, krot.* |
| **English name** | Common walnut, Persian walnut, European walnut |
| **Botanical name** | *Juglans regia* Linn. |
| **Active ingredients** | The immature fruits and leaves are one of the richest sources of ascorbic acid. Leaves are astringent, tonic and anthelmintic. The leaves and bark are alternative and detergent; they are used in herpes, eczema, scrofula and syphilis. The fruit used as alternative in rheumatism. |
| **Geographical indications** |  <br>Branch<br>  <br>Habit<br>A large, deciduous, monoecious tree with tomentose shoots, found throughout the Himalayas and hills of Assam at altitudes of 3,000-11,000 ft. Bark-grey, longitudinally fissured; leaves alternate, imparipinnate, 6-15 in. long: leaflets 5-13, sub-sessile, elliptic to oblong-lanceolate, 3-8 in. x 1.5-4 in., usually entire; flowers small, yellowish green: male in pendulous slender catkins, 2-5 in. long, female in 1-3 flowered, terminal catkins; fruit a green drupe with leathery exocarp, indehiscent, ellipsoid-globose, 2 in. across: endocarp hard, woody, wrinkled, 2-valved, enclosing 4-lobed, corrugated, oily, edible seed. It occurs in natural forests either in pure crops or in mixture with other broad-leaved species or conifers and often attains a height of 80-100 ft and a girth of 10-15 ft or more. |

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| **Code** | **1136** |
| **Title of the ITK** | **Use of neem and salt for storage of wheat** |
| **Reference of the ITK*** | Volume 2, page 217 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1137** |
| **Title of the ITK** | **Storage of rice by mixing with turmeric powder** |
| **Reference of the ITK*** | Volume 2, page 218 |
| **Name of the plant used in ITK** | Turmeric |
| | Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **1139** |
| **Title of the ITK** | **Storage of wheat grain using neem leaves** |
| **Reference of the ITK*** | Volume 2, page 217 |
| **Name of the plant used in ITK** | *Neem* |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **1145** |
| **Title of the ITK** | **Use of garlic bulbs to protect rice from storage pests** |
| **Reference of the ITK*** | Volume 2, page 218 |
| **Name of the plant used in ITK** | Garlic |
| | Refer to ITK Code No. 1116 |

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| **Code** | **1146** |
| **Title of the ITK** | **Wheat grain storage by neem leaf** |
| **Reference of the ITK*** | Volume 2, page 219 |
| **Name of the plant used in ITK** | *Neem* |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **1435** |
| **Title of the ITK** | **Traditional method of grain and seed storage** |
| **Reference of the ITK*** | Volume 2, page 219 |
| **Name of the plant used in ITK** | Paddy |
| | Refer to ITK Code No. 481 |

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| **Code** | **1439** |
| **Title of the ITK** | **Safe storage of seed of maize and wheat** |
| **Reference of the ITK*** | Volume 2, page 220 |
| **Name of the plant used in ITK** | *Bantulsi* |
| | Refer to ITK Code No. 2091 |

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|---|---|
| **Code** | **1441** |
| **Title of the ITK** | **Control of weevil in wheat by neem leaves during storage** |
| **Reference of the ITK*** | Volume 2, page 220 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **1445** |
| **Title of the ITK** | **Paddy-husk basket for paddy-seed storage** |
| **Reference of the ITK*** | Volume 2, page 221 |
| **Name of the plant used in ITK** | Paddy |
| | Refer to ITK Code No. 481 |

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| **Code** | **1464** |
| **Title of the ITK** | **Indigenous methods of grain and seed storage** |
| **Reference of the ITK*** | Volume 2, page 222 |
| **Name of the plant used in ITK** | *Sindwar* |
| | Refer to ITK Code No. 702 |

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|---|---|
| **Code** | **2144** |
| **Title of the ITK** | **Storing of rice grains with red chilli** |
| **Reference of the ITK*** | Volume 2, page 2234 |
| **Name of the plant used in ITK** | Chilli |
| | Refer to ITK Code No. 139 |

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| **Code** | **2152** |
| **Title of the ITK** | **Storing of rice bags by adding red chillies, crystallized salt and neem leaves** |
| **Reference of the ITK*** | Volume 2, page 224 |
| **Names of the plants used in ITK** | Chilli and neem |
| | ***Chilli:*** Refer to ITK Code No. 139 |
| | *Neem:* Refer to ITK Code No. 151 |

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| **Code** | **383** |
| **Title of the ITK** | **Storage** |
| **Reference of the ITK*** | Volume 2, page 224 |
| **Names of the plants used in ITK** | Paddy and neem |
| | ***Paddy:*** Refer to ITK Code No. 481 |
| | *Neem:* Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **32** |
| **Title of the ITK** | **Storage of pulse grain** |
| **Reference of the ITK*** | Volume 2, page 227 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **205** |
| **Title of the ITK** | **Storage of pigeonpea** |
| **Reference of the ITK*** | Volume 2, page 228 |
| **Name of the plant used in ITK** | *Vasambu* |
| | Refer to ITK Code No. **1**38 |

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| **Code** | **215** |
| **Title of the ITK** | **Storage of blackgram** |
| **Reference of the ITK*** | Volume 2, page 228 |

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| **Name of the plant used in ITK** | Fingermillet |
| **Names in Indian languages** | Bengali: *marua;* Gujarati: *bavto, nagli;* Hindi: *mandua, mandal;* Kannada: *ragi;* Malayalam: *muttari;* Marathi: *nagli, nachoni;* Sanskrit: *rajika;* Tamil: *ragi, kelvaregu;* Telugu: *ragulu.* |
| **English name** | *Ragi,* fingermillet, African millet |
| **Botanical name** | *Eleusine coracana* Gaertn. |
| **Active ingredients** | Protein content varies from 6 to 11 % and a strain of white *ragi* contains as much as 14% protein. At 5% level of protein intake, the biological values and digestibility coefficient of *ragi* protein are 89% and 80% respectively. It is usually converted into flour and a variety of preparations like cakes, puddings, porridge etc are made. *Ragi* straw is a nutritious fodder for cattle and may be fed green or as a hay. |
| **Geographical indications** | An erect annual grass, *2-A* ft high, with tillering tufted stems. Stems somewhat laterally flattened, bearing (when mature) a whorl of 2-7, but normally 4—6, digitate, straight or slightly incurved spikes; spikes about *Vi* in. broad and 5-6 in. long; spikelets numerous, about 70, arranged alternately on rachis; each spikelet contains 4—7 seeds, varying in diameter from 1 to 2 mm; seeds nearly globose or somewhat flattened, smooth or rugose, varying in colour from dark reddish brown to nearly white. It is considered to be of Indian or African origin and is a cultigen of the wild species, *E. indica,* which occurs throughout the warmer parts of the world. In Andhra Pradesh and Tamil Nadu *ragi* cultivation is concentrated in Anantapur, Coimbatore, Vishakhapatnam, Nellore, Cuddappah, Chingleput, and North and South Arcot districts. Other ragi growing areas are Karnataka, Konkan, Deccan and Gujarat. In Bihar and Jharkhand, *ragi* is grown mainly in the upland tracts of Bhagalpur, Darbhanga, Gaya, Hazaribagh and Ranchi districts. The principal *ragi* areas in Orissa lie in Koraput district. The southern region of Andhra Pradesh is also important for *ragi* cultivation. *Ragi* is a crop of minor importance in north India and is grown in the sub-Himalayan tracts of Uttar Pradesh and Punjab. |

Habit

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| **Code** | **217** |
| **Title of the ITK** | **Control of storage pests of cowpea** |
| **Reference of the ITK*** | Volume 2, page 228 |
| **Name of the plant used in ITK** | *Adhatoda* |

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| **Names in Indian languages** | : Bengali: *basak;* Gujarati: *aradusi;* Hindi: *arusa, bansa;* Kannada: *adusoge, kurchigida, pavate;* Dogri: *bahekar, baikar, basuth, bhenkar;* Malayalam: *adalodakam;* Oriya: *arusa, basung;* Punjabi: *bansa, basuti, bhekar, vasaka;* Sanskrit: *shwetavasa, vasa, vasaka;* Tamil: *adhatodai, pavettai;* Telugu: *addasaramu.* |
| **English names** | Malabarnut, vasaka |
| **Botanical name** | : *Adhatoda vasica* Nees. |
| **Active ingredients** | : An alcoholic extract of the leaves showed activity against *Micrococcus pyogenes* var. *aureus* and *Escherichia coli.* The flowers and fruits are bitter and aromatic. The root is administered as a decoction along with other expectorants. |
| **Geographical indications** | : An evergreen, gregarious, stiff, perennial shrub, 1.2-6.0 m in height, distributed throughout India, up to an altitude of 1,300 m. Leaves elliptic-lanceolate or ovate-lanceolate, |

Twig

Branch

entire, 5-30 cm long, hairy, light green above, dark below, leathery; flowers large, white with red- or yellow-barred throats, in spikes with large bracts; capsules clavate, longitudinally channelled, 1.9-2.2 cm x 0.8 cm; seed globular.

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| **Code** | **750** |
| **Title of the ITK** | **Use of turmeric powder and mustard oil for storage of pulses** |
| **Reference of the ITK*** | Volume 2, page 229 |
| **Names of the plants used in ITK** | Turmeric and mustard |

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| **Names in Indian languages** | **Turmeric:** Refer to ITK No. 481<br><br>**Mustard:** Bengali: *soda rai;* Hindi: *lahi, lutni, maghi, sarson, toria*. |
| **English name** | **Mustard:** Field mustard, Indian colza, turnip rape |
| **Botanical name** | **Mustard:** *Brassica campestris* Linn. |
| **Active ingredients** | **Mustard:** The oil is used in India for cooking purposes. It is also used for oil bath and it is believed to strengthen the skin and to keep it cool and healthy. With camphor it forms an efficacious embrocation in case of muscular rheumatism, stiff neck etc. The oilcake is a cattle feed. The tender leaves and shoot are relished as pot-herb. |
| **Geographical indications**<br><br>  <br>Habit | **Mustard:** A much-branched, very variable, annual or biennial herb, up to 1.5 m in height, cultivated in India as a cool-season crop. Taproot fusiform or tuberous; basal leaves lyrate-pinnatifid, lobes decreasing in size towards petiole, glaucous, glabrous, with a few bristly hairs, especially along the veins; lower cauline leaves several lobed, upper cauline leaves sessile, amplexicaul, oblong-lanceolate, sharply dentate; flowers yellow; siliqua, 50-100 mm x 2.5^.0 mm, attenuating into a long slender beak 5-30 mm long; seeds mucilaginous or non-mucilaginous. India is the third largest oilseed-producing country in the world. Rapeseed-mustard production accounts for nearly 15 to 20 per cent of the total oilseeds produced in India. The chief growing states are Uttar Pradesh, Punjab, Assam, Bihar, Madhya Pradesh, Rajasthan and West Bengal. *Rai*, *sarson* and *toria* are all grown in U.P. Brown sarson, *toria* and *taramira* are popular in Punjab. Brown sarson is more popular than yellow sarson in Assam. *Sarson* and *rai* are preferred in Bihar. |

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| **Code** | **1151** |
| **Title of the ITK** | **Protection of pulse grains from storage pests** |
| **Reference of the ITK*** | Volume 2, page 230 |
| **Name of the plant used in ITK** | Mustard and sesame |
| **Name in Indian languages** | **Mustard:** Refer to ITK No. 750<br><br>**Sesame:** Gujarati: *Tal;* Hindi & Marathi: *Til;* Kannada & Tamil: *Ellu;* Malayalam: *Karunthellu;* Oriya: *Khasa, rasi;* Sanskrit: *Tila;* Telugu: *Nuvvulu.* |

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| **English name** | **Sesame:** Sesame, Gingelly |
| **Botanical name** | **Sesame:** *Sesamum indicum* Linn. |
| **Active ingredients** | **Sesame:** The oleaginous edible seeds of *Sesamum indicum* are traditionally esteemed high for the oil (oilcake used as a cattle feed). Sesame seeds are considered emollient, diueretic, lactagogue and nourishing tonic. They are said to be helpful in piles. A decoction of the seed is said to be emmenagogue is also given in cough. Sesame oil is widely used as an ingredient of confectionary and for making margarine. It can be used in the manufacture of soaps, cosmetics, insecticides and pharmaceutical products. Sesame cake-meal obtained as a by-product of the oil-milling industry is highly esteemed as a livestock feed. It is valued also as an ingredient of poultry feed because of its methionine content in practical rations for farm animals (cows, calves and bullocks), the cakes from *ghani*, expeller and solvent-extraction process are comparable digestibility of total carbohydrates. The sesame cake or meal is a source of protein for human nutrition. |
| **Geographical indications** | *Sesame:* An erect, branched or unbranched annual 60-180 cm high, cultivated throughout the plains of India and up to an altitude of 1,200 m; leaves 7.5-12.5 cm, simple or, when variable, with upper ones narrowly oblong, middle ones ovate and toothed and the lower ones lobate or pedatisect; flowers white, pink or mauve-pink, with darker markings, borne in racemes in the leaf axils; fruit capsular, oblong-quadrangular, slightly compressed, deeply 4-grooved, 1.5-5 cm long; seeds black, brown or white, 2.5-3 mm long and 1.5 mm broad. It is one of the most ancient of the cultivated crops in India. It was perhaps introduced into India by the earliest human migrants from Africa. Widespread cultivation of sesame in Asia and Africa since ancient times has rendered it difficult to ascertain its original home. Several authors recognize the Abyssinian region of Africa as the primary centre of origin of sesame in their wild forms, whereas central India, Assam and Myanmar have been regarded as the primary centres of origin of the cultivated forms. The central and eastern mountainous regions of China are recognized as a secondary centre of origin of the cultivated forms. Besides these, two other centres of origin are Punjab, Kashmir, Pakistan and Afghanisthan region, and the Asia Minor region of Iran |

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| | and Turkey. From these primary and secondary centres, further progress of sesame took place along two lines: towards the east through China and Indo-China to Japan, and towards the west to the Mediterranean countries. |
| **Code** | **1444** |
| **Title of the ITK** | **Storage of pulses in bin or *mora* with neem and *chatpata* leaves** |
| **Reference of the ITK*** | Volume 2, page 231 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |
| **Code** | **2145** |
| **Title of the ITK** | **Storage of blackgram and redgram seed with ash and dried neem leaves** |
| **Reference of the ITK*** | Volume 2, page 232 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |
| **Code** | **2153** |
| **Title of the ITK** | **Pulse storage by using groundnut oil or sesame oil** |
| **Reference of the ITK*** | Volume 2, page 232 |
| **Names of the plants used in ITK** | Groundnut and sesame |
| **Names in Indian languages** | **Groundnut:** Bengali: *chini-badam;* Gujarati: *mugphali;* Hindi: *mungphali, vilayati mung;* Kannada: *nela-gadale;* Malayalam: *kappalandi, nela-kadala;* Marathi: *bhui mug;* Sanskrit: *buchanaka;* Tamil: *nelakadalai, verkadalai;* Telugu: *nelasenagalu, verusenagalu.* |
| **English name** | **Groundnut:** Groundnut, monkeynut, peanut |
| **Botanical name** | **Groundnut:** *Arachis hypogaea* Linn. |
| **Active ingredients** | **Groundnut:** Groundnut kernels constitute a good source of vitamins of the B-complex group, particularly thiamine and nicotinic acid but are notably deficient in vitamins A, C, D and $B_{12}$. Root nodules of the groundnut plant are rich |

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in riboflavin. The protein obtained from the leaves of the groundnut plant is adequate in all amino acids, except the sulphur-containing acids. Groundnut oil is a non-drying oil belonging to the oleo-linoleic acid group of oils. It is pale-yellow in colour with a nutty odour and bland taste. More than 200 compounds have been identified in the volatiles of roasted kernels. These include hydrocarbons, alcohols, carbonyls, acids, esters, pyrazines and others. Volatile compounds present in the aerial parts of the groundnut plant have been studied. Groundnut finds a wide range of uses not only in the daily life of the people but also in various industries. It is valued after simple processing such as roasting, as dessert and as a constituent of confections and snack foods. Groundnut milk is reported to be as good as cow's milk in promoting growth and may be given to infants aged 8 months and above. As a source of protein in mixed feeds for beef and dairy cattle, groundnut cake compares favourably with other vegetable proteins.

## Geographical indications

**Groundnut:** A small, prostrate, diffuse or erect, branched, annual herb, 30-60 cm in height; leaves binate, alternate, with adnate stipules: leaflets 3.5-5.0 cm x 2.0-2.5 cm, oval to oval-obovate; flowers yellow, ephemeral, axillary. After fertilization, the pedicel elongates rapidly and enters the ground, where the ovary begins to develop into a pod, maturing in about 2 months. Pods or nuts cylindrical, hard, reticulated, indehiscent and inflated, 2.5-5.0 cm long, 1-3 seeded, with the pericarp constricted between the seeds. Seed covered by a light or deep reddish brown seed coat, and consisting of two white fleshy cotyledons rich in oil and protein. The origin of groundnut is still uncertain. The restricted distribution of recent species in the central part of South America indicates that the original home and the centre of distribution of the genus may be in this area. Groundnut is believed to be native to Brazil. Groundnut was cultivated as early as 950 B.C. by the Indians in Brazil and Peru; it spread to Argentina, from where it was introduced into Jamaica, Cuba and other West Indies islands. It was probably brought to Africa from Brazil by the Portuguese early in the sixteenth century. It was taken to Asia somewhat later from the west coast of South America.

Branch
Habit

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| **Code** | **:** | **387** |
| **Title of the ITK** | **:** | ***Vitex negundo* leaf for preservation and storage of pulses** |
| **Reference of the ITK*** | : | Volume 2, page 233 |
| **Name of the plant used in ITK** | **:** | ***Vitex*** |
| | | Refer to ITK Code No. 702 |

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| **Code** | **33** |
| **Title of the ITK** | **Use of neem leaves for storage of groundnut** |
| **Reference of the ITK*** | Volume 2, page 233 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **531** |
| **Title of the ITK** | ***Kothari* or *nigal (Arundinaria falcate)* for grain storage** |
| **Reference of the ITK*** | Volume 2, page 235 |
| **Name of the plant used in ITK** | Walnut |
| | Refer to ITK Code No. 760 |

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| **Code** | **744** |
| **Title of the ITK** | ***Kuthar*** |
| **Reference of the ITK*** | Volume 2, page 237 |
| **Name of the plant used in ITK** | Walnut |
| | Refer to ITK Code No. 760 |

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| **Code** | **1140** |
| **Title of the ITK** | **Indigenous storage structures *bukhari* or *kunthla*** |
| **Reference of the ITK*** | Volume 2, page 238 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **208** |
| **Title of the ITK** | Grain storage for household use |
| **Reference of the ITK*** | Volume 2, page 245 |
| **Name of the plant used in ITK** | Neem and chilli |
| | **Neem:** Refer to ITK Code No. 151 |
| | **Chilli:** Refer to ITK Code No. 139 |

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| **Code** | **1438** |
| **Title of the ITK** | **Storage of vegetable seeds** |
| **Reference of the ITK*** | Volume 2, page 247 |
| **Name of the plant used in ITK** | *Sindwar* |
| | Refer to ITK Code No. 702 |

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| **Code** | **34** |
| **Title of the ITK** | **Grain storage with neem leaves** |
| **Reference of the ITK*** | Volume 2, page 249 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **212** |
| **Title of the ITK** | **Paddy and pulse seed storage** |
| **Reference of the ITK*** | Volume 2, page 250 |
| **Names of the plants used in ITK** | *Notchi*, *Pongamia* and castor |
| | *Notchi:* Refer to ITK Code No. 702 |
| | ***Pongamia:*** Refer to ITK Code No. 1376 |
| | **Castor:** Refer to ITK Code No. 1808 |

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| **Code** | **213** |
| **Title of the ITK** | *Storage of rice* |
| **Reference of the ITK*** | Volume 2, page 250 |

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**Names of the plants used in ITK**

*Karukkurachi* and *aalimaram*

**Names in Indian languages**

***Aalimaram:*** Bengali: *luvuni, nona;* Gujarati and Marathi: *raamaaphal;* Hindi: *anta, luvuni, nagnewa, nona, raamaaphal;* Kannada: *raamaaphala;* Malayalam: *manilanilam, parankichchkka, raamachchita, vlathi;* Oriya: *barhial, nena, raamopholo, raamositaapholo;* Sanskrit: *krishnabeejam, lavali, lavani, mruduphalam, raamaaphalam;* Tamil: *aninuna, manilvatta, raamsita;* Telugu: *raamaaphalamu, raamaseethaaphalamu* (fruit).

**English name**

***Aalimaram:*** Bullock's heart, West Indian custard-apple

**Botanical name**

***Aalimaram:*** *Annona reticulata* Linn.

**Active ingredients**

***Aalimaram:*** The fruit is brownish or yellowish red and is larger than that of *A. squamosa*, and fruits of about 1 kg each have been reported. The plant possesses insecticidal properties, the seed, leaf, stem and root being more potent than those of other species. The seed is reported to possess astringent and vermifugal properties, and is used in diarrhoea and dysentery. The seed-meal is rich in nitrogen. The oil is found to be toxic to aphids and can be used as a contact-poison. A water-suspension of the seed is reported to be lethal to green bugs.

**Geographical indications**

Ripen fruits

***Aalimaram:*** A small, deciduous or semi-deciduous tree, up to 10 m in height, native to tropical America, particularly the West Indies, completely naturalized in some parts of India and also cultivated. Bark rough, chocolate-brown, with longitudinal fissures, 1.4-4.0 mm thick, becoming double-quilled when dry; leaves oblong-lanceolate, 10-20 cm x *2.5-1 A* cm, with unpleasant odour; flowers solitary, leaves-opposed, fleshy, greenish-white, scattered on the branches; berries many, in heart-shaped syncarpium, yellowish or brownish-red when ripe, 7.5-18.0 cm in diameter, with pentagonal areoles; seeds smooth, black. The tree, introduced into India, has become completely naturalized in peninsular and eastern India, and also recorded from Uttar Pradesh and Nepal.

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| **Code** | **224** |
| **Title of the ITK** | **Seed storage** |
| **Reference of the ITK*** | Volume 2, page 250 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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| **Code** | **225** |
| **Title of the ITK** | **Seed storage using goat dung** |
| **Reference of the ITK*** | Volume 2, page 251 |
| **Name of the plant used in ITK** | *Pungam* |
| | Refer to ITK Code No. 1376 |

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| **Code** | **740** |
| **Title of the ITK** | **Innovative methods against stored grain pests** |
| **Reference of the ITK*** | Volume 2, page 251 |
| **Name of the plant used in ITK** | Turmeric and mustard |
| | **Turmeric:** Refer to ITK Code No. 481 |
| | **Mustard:** Refer to ITK Code No. 481 |

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| **Code** | **741** |
| **Title of the ITK** | **Use of dry leaves *of methi* or *bana* leaves to control insects during grain storage** |
| **Reference of the ITK*** | Volume 2, page 252 |
| **Name of the plant used in ITK** | *Methi* |
| **Name in Indian languages** | ***Methi:*** Bengali: *methi, methi-shak, methuka, hoemgreeb;* Gujarati: *methi, methini, bhaji;* Hindi: *methi, muthi;* Kannada: *menthya, mentesoppu, menk-palle, mente;* Malayalam: *uluva, venthiam;* Marathi: *methi;* Sanskrit: *methika, chandrika, asumodhagam;* Tamil: *vendayam;* Telugu: *mentikoora* (herb), *mentulu* (seeds). |

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| **English name** | ***Methi:*** Fenugreek |
| **Botanical name** | ***Methi:*** *Trigonella foenum-graecum* Linn. |
| **Active ingredients** | ***Methi:*** The roasted seeds are used as a substitute for coffee. The plant possesses insect-repellent properties. The seeds are aromatic, carminative, tonic and galactagogue. They are used externally in poultices for boils, abscesses and ulcer and internally as emolient for inflammation of the intestinal tract. They find application also in veterinary medicines, and are used in poultices, ointments and plasters, and form a constituent of 'condition powders' for cattle, horses and sheeps. The aqueous extract of seeds shows antibiotic activities against *Micrococus pyogenes* var. *aureus.* |
| **Geographical indications** | ***Methi:*** An aromatic annual, 30-60 cm tall, found wild in Kashmir, Punjab and the upper Gangetic plains, and widely cultivated in many parts of India. Leaves pinnate, 3-foliate; leaflets 2.0 -2.5 cm long, oblanceolate-oblong, obscurely dentate; flowers white or yellowish-white, 1 or 2, axillary; pods 3-15 cm long, 10-20 seeded; seeds greenish-brown, 2.5 - 5.0 x 2.0-3.5 mm oblong with a deep groove across one corner, giving the seeds a hooked appearance.  Habit |
| **Code** | 745 |
| **Title of the ITK** | **Grain or seed storage in wooden structure layered with cowdung and urine** |
| **Reference of the ITK*** | Volume 2, page 252 |
| **Names of the plants used in ITK** | Chilli and *laung* |
| **Name in Indian languages** | ***Laung:*** Bengali, Gujarati, Hindi and Marathi: *laung;* Kannada: *lavanga;* Malayalam: *karayampu, krambu;* Tamil: *kirambu;* Telugu: *lavangamuchettu* (tree), *lavangamulu* (buds). |
| **English name** | ***Laung:*** Clove tree |

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| **Botanical name** | ***Laung:*** *Syzygium aromaticum* (Linn.) Merrill & Perry |
| **Active ingredients** | ***Laung:*** The cloves are aromatic, stimulant and carminative. They are used in various forms of gastric irritation and dyspepsia. They are administered in the form of powder or infusion to relieve nausea and vomiting, to correct flatulence and to excite languid digestion. The oil is used as a local analgesic for hypersensitive dentines and carious cavities. Used externally, the oil is rubefacient and counter-irritant; internally, it is carminative and antispasmodic. |
| **Geographical indications** | *Laung:* A pyramidal or conical evergreen tree, 9-12 m high, sometimes taller. Main stems erect, 100 cm in girth, often forking at a height of 1.5-1.8 m; bark-smooth, grey; leaves lanceolate, in pairs, acute at both ends, 7.5-12.3 cm x 2.5-3.75 cm, gland-dotted, fragrant; flower-buds borne in small clusters at the ends of branches, greenish, turning pink at the time of maturity, aromatic; drupes (mother-of-clove), fleshy, dark-pink, 2.5 cm long x 1.5 cm thick; seeds oblong, soft, grooved on one side, 1.5 cm long. The clove tree is a native of some islands of the Malay Archipelago, especially Moluccas. |

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| **Code** | **746** |
| **Title of the ITK** | **Method of grain and seed storage** |
| **Reference of the ITK*** | Volume 2, page 253 |
| **Name of the plant used in ITK** | Walnut<br>Refer to ITK Code No. 760 |

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| **Code** | **748** |
| **Title of the ITK** | **Use of walnut and sweet flag leaves against pests in stored gram** |
| **Reference of the ITK*** | Volume 2, page 253 |
| **Names of the plants used in ITK** | Walnut and sweet flag<br>**Walnut:** Refer to ITK Code No. 760<br>**Sweet flag:** Refer to ITK Code No. 138 |

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| **Code** | **757** |
| **Title of the ITK** | **Insect pest control in stored grains** |
| **Reference of the ITK*** | Volume 2, page 253 *Akhrot* and |
| **Names of the plants used in ITK** | eucalyptus Refer to ITK Code |
| ***Akhrot*** | No. 760 |

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| **Code** | **1132** |
| **Title of the ITK** | **Use of neem leaves, onion and garlic in storage** |
| **Reference of the ITK*** | Volume 2, page 254 |
| **Name of the plant used in ITK** | *Neem*, onion, garlic |
| | **Neem:** Refer to ITK Code No. **1**51 |
| | **Onion:** Refer to ITK Code No.689 |
| | **Garlic:** Refer to ITK Code No. 1116 |

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| **Code** | **1141** |
| **Title of the ITK** | **Safe storage of food grains by adding neem leaves** |
| **Reference of the ITK*** | Volume 2, page 254 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1451** |
| **Title of the ITK** | **Control of ants in sugar** |
| **Reference of the ITK*** | Volume 2, page 255 |
| **Name of the plant used in ITK** | Clove |
| | Refer to ITK Code No. 745 |

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| **Code** | **1453** |
| **Title of the ITK** | **Use of neem leaves for grain storage** |
| **Reference of the ITK*** | Volume 2, page 255 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1460** |
| **Title of the ITK** | **Protection of seeds from insect pests** |
| **Reference of the ITK*** | Volume 2, page 255 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1463** |
| **Title of the ITK** | **Storage of foodgrains using *sinduar* leaves** |
| **Reference of the ITK*** | Volume 2, page 256 |
| **Name of the plant used in ITK** | *Sindwar* |
| | Refer to ITK Code No. 702 |

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| **Code** | **1868** |
| **Title of the ITK** | **Use of neem leaves for grain storage** |
| **Reference of the ITK*** | Volume 2, page 257 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 15**1** |

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| **Code** | **1869** |
| **Title of the ITK** | **Neem leaves for seed storage** |
| **Reference of the ITK*** | Volume 2, page 257 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. **1**51 |

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| **Code** | **1871** |
| **Title of the ITK** | **Use of mango leaves in stored parboiled rice to avoid rancid taste after cooking** |
| **Reference of the ITK*** | Volume 2, page 257 |
| **Name of the plant used in ITK** | Mango |

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**Name in Indian languages**

Bengali: *am;* Gujarati: *amri;* Hindi: *am, amb;* Kannada: *mavu;* Malayalam: *amran, cutarn, mavu;* Marathi: *amba;* Sanskrit: *amra, chuta;* Tamil: *manga;* Telugu: *mamidi, mavi.*

**English name**

Mango *Mangifera*

**Botanical name**

*indica* Linn.

**Active ingredients:** Ripe fruit is considered invigorating, refreshing and fattening. The juice along with aromatics is recommended as a restorative tonic. It contains vitamins A and C and is useful in heat apoplexy. The ash of burnt leaves is a household remedy for burns and scalds. Dried mango flowers are astringent. They are given for diarrhoea, dysentery, cattarah of the bladder and gleet. The bark is astringent, which contains mangeferin. It is used in diphtheria and rheumatism. The kernel powder is used as a astringent in bleeding piles and also used as anthelmintic.

**Geographical indications**

A large evergreen tree, 10.0-45.0 m high, with a heavy dome-shaped crown and a straight, stout bole; bark thick, rough, dark grey, flaking off when old; leaves linear-oblong or elliptic-lanceolate, 10-30 cm long and 2-9 cm wide, emitting when crushed an aromatic, resinous odour; inflorescence a large panicle, containing in some types more than 3,000 flowers; flowers tiny, reddish white or yellowish green, pungently odorous and melliferous: staminate and hermaphrodite flowers borne in the same panicle; fruit a large drupe exceedingly variable in form and size: fruit skin thick or thin, leathery, green, yellowish or red, often dotted with numerous glands: flesh (mesocarp) whitish yellow, yellow or orange, firm, soft or juicy, sub-acid or sweet, richly aromatic: fibres throughout the flesh in some types, absent or very little in others; seed solitary, ovoid-oblique, encased in a hard compressed fibrous endocarp (stone). It has been cultivated in India for at least 4,000 years and recent studies on the genus indicate that it probably originated in the Assam-Myanmar-Thailand region where truly wild mango trees, belonging to both *M. indica* and *M. sylvatica*, have been recorded. Mango occurs wild or semi-wild nearly throughout India, in tropical and subtropical hilly forests. It is common in sub-tropical Himalayas, hills of western or eastern parts and the forests of central India, Bihar, Orissa, Assam and Andaman Islands.

Habit

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| **Code** | **1872** |
| **Title of the ITK** | **Indigenous grain-storage practices** |
| **Reference of the ITK*** | Volume 2, page 257-258 Neem, |
| **Names of the plants used in ITK** | *nirgundi* and onion |
| | **Neem:** Refer to ITK Code No. 15 |
| | **Nirgundi:** Refer to ITK Code No. 702 |
| | **Onion:** Refer to ITK Code No. 689 |

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| **Code** | **2162** |
| **Title of the ITK** | **Indigenous method of storage of paddy seed** |
| **Reference of the ITK*** | Volume 2, page 259 |
| **Name of the plant used in ITK** | *Vailaku* |
| | Refer to ITK Code No. 702 |

| | |
|---|---|
| **Code** | **2314** |
| **Title of the ITK** | **Storage practices with inert dusts** |
| **Reference of the ITK*** | Volume 2, page 259 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

| | |
|---|---|
| **Code** | **447 (m)** |
| **Title of the ITK** | **Grain storage with paddy straw** |
| **Reference of the ITK*** | Volume 2, page 259 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 15**1** |

| | |
|---|---|
| **Code** | **693** |
| **Title of the ITK** | **Application of leaves of walnut, neem, *mentha* and eucalyptus as insect repellent for storaged food grains** |
| **Reference of the ITK*** | Volume 2, page 262 |

**Contents**

| | |
|---|---|
| **Names of the plants used in ITK** | Walnut, Neem, *mentha* and eucalyptus |
| **Name in Indian languages** | ***Mentha:*** Bengali, Gujarati, Hindi, Marathi and Telugu: *podina, pudina;* Kannada: *chetni maragu.* |
| **English names** | ***Mentha:*** Field mint, corn mint |
| **Botanical name** | ***Mentha:*** *Mentha arvensis* Linn. |
| **Active ingredients** | ***Mentha:*** Field mint is used as a stimulant and carminative. An infusion of leaves affords a remedy for rheumatism and indigestion. In addition to menthol, which is the main constituent, the oil contains menthyl acetate, amenthone and minor amounts of piperitone, furfural etc. |
| **Geographical indications** | ***Mentha:*** An erect, hairy or glabrous herb, 10-60 cm high, found throughout temperate north Asia up to the Himalayas and Europe. Leaves 2.5-5 cm long, shortly petioled or sessile, oblong-ovate or lanceolate, obtusely or acutely serrate, cuneate at the base, sparsely hairy or almost glabrous; flowers lilac, in axillary, capitate whorls, borne on axils of leaves on upper stem. This species grows wild in Kashmir at 1,500-3,000 m and is common near Gulmarg; it has also been recorded in a few other places in India. |

Habit

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|---|---|
| **Code** | **1052** |
| **Title of the ITK** | **Use of neem *(Azadirachta indica)* and eucalyptus leaves for storage-pest control** |
| **Reference of the ITK*** | Volume 2, page 262-263 |
| **Name of the plant used in ITK** | Neem and eucalyptus Refer |
| ***Neem*** | to ITK Code No. **151** |

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| | | |
|---|---|---|
| **Code** | : | **1313** |
| **Title of the ITK** | : | **Protection of sugar and sugar products from ants** |
| **Reference of the ITK*** | : | Volume 2, page 263 |
| **Name of the plant used in ITK** | : | Cloves |
| | | Refer to ITK Code No. 745 |
| **Code** | : | **1423** |
| **Title of the ITK** | : | **Protection of black&ram from insects bv storing \ and turmeric** |
| **Reference of the ITK*** | | Volume 2, page 264 |
| **Name of the plant used in ITK** | | Fingermillet |
| | | Refer to ITK Code No. 215 |
| **Code** | | **2149** |
| **Title of the ITK** | | **Neem leaves kept in paddy bags during storage** |
| **Reference of the ITK*** | | Volume 2, page 264 |
| **Name of the plant used in ITK** | | Neem |
| | | Refer to ITK Code No. 151 |
| **Code** | | **1862** |
| **Title of the ITK** | | **Control of storage pests of rice and pulses by use of neem leaves** |
| **Reference of the ITK*** | | Volume 2, page 264 |
| **Name of the plant used in ITK** | | Neem |
| | | Refer to ITK Code No. 151 |
| **Code** | | **2463** |
| **Title of the ITK** | | **Pre-fumigation of paddy-storage room with *sambrani*** |
| **Reference of the ITK*** | | Volume 2, supplement I, page 69 |
| **Name of the plant used in ITK** | | *Sambrani* |
| | | Refer to ITK Code No. 1418 |

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|---|---|---|
| **Code** | : | **2451** |
| **Title of the ITK** | : | **Storage of paddy seeds by using ash and neem leaves** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 69 |
| **Name of the plant used in ITK** | : | Neem<br>Refer to ITK Code No. 151 |

| | | |
|---|---|---|
| **Code** | : | **2462** |
| **Title of the ITK** | : | **Storage of paddy seeds by using *mahua*** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 70 |
| **Name of the plant used in ITK** | : | *Mahua*<br>Refer to ITK Code No. 1389 |

| | | |
|---|---|---|
| **Code** | : | **2456** |
| **Title of the ITK** | : | **Use of chilli and lemon to store seeds of millets** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 73 |
| **Name of the plant used in ITK** | : | Chilli and lemon<br>**Chilli:** Refer to ITK Code No. 139<br>**Lemon:** Refer to ITK Code No. 474 |

| | | |
|---|---|---|
| **Code** | : | 2437 |
| **Title of the ITK** | : | **Use of leaves of *naytholasi {Ocimum canum)* to prevent attack of borers in stored in stored pigeonpea** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 74 : |
| **Name of the plant used in ITK** | | *Naytholasi*<br>Refer to **ITK** Code No. 126 (a) |

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|---|---|---|
| **Code** | | **2438** |
| **Title of the ITK** | | **Storage of grains by mixing dried neem leaves or ash** |
| **Reference of the ITK*** | | Volume 2, supplement I, page 76 |
| **Name of the plant used in ITK** | | Neem<br>Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **2461** |
| **Title of the ITK** | **Use of neem leaves in controlling stored grain pests** |
| **Reference of the ITK*** | Volume 2, supplement I, page 76 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **2464** |
| **Title of the ITK** | **Use of walnut, *Mentha,* Neem and eucalyptus leaves in storing grains** |
| **Reference of the ITK*** | Volume 2, supplement I, page 76 |
| **Names of the plants used in ITK** | Walnut, *Mentha, neem* and eucalyptus |
| | **Walnut:** Refer to ITK Code No.753 |
| | **Mentha:** Refer to ITK Code No. 693 |
| | **Neem:** Refer to ITK Code No. 151 |

| | |
|---|---|
| **Code** | **2439** |
| **Title of the ITK** | **Use of *jungle pudina (Mentha arvensis)* for grain storage** |
| **Reference of the ITK*** | Volume 2, supplement I, page 77 |
| **Names of the plants used in ITK** | *Jungle pudina* |
| | Refer to ITK Code No. 693 |

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|---|---|
| **Code** | **2449** |
| **Title of the ITK** | **Use of *draink* leaves against storage-grain pests** |
| **Reference of the ITK*** | Volume 2, supplement I, page 77 |
| **Name of the plant used in ITK** | *Draink* |
| | Refer to ITK Code No. 2305 (d) |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Storage of foodgrains in bins made of bamboo and cotton sticks** |
| **Reference of the ITK*** | Volume 2, supplement I, page 78 |

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|---|---|
| **Names of the plants used in ITK** | Bamboo and cotton<br>**Bamboo:** Refer to ITK Code No. 359<br>**Cotton:** Refer to ITK Code No. 1269 |
| **Code** | **2454** |
| **Title of the ITK** | **Storage of paddy grains in container made of deodar** |
| **Reference of the ITK*** | Volume 2, supplement **I,** page 79 |
| **Name of the plant used in ITK** | Deodar<br>Refer to ITK Code No. 697 |
| **Code** | **2457** |
| **Title of the ITK** | **Storage of maize grain in structure made of deodar wood** |
| **Reference of the ITK-** | Volume 2, supplement I, page 80 |
| **Name of the plant used in ITK** | Deodar<br>Refer to ITK Code No. 697 |
| **Code** | **2450** |
| **Title of the ITK** | **Use of *methi* leaves to store grains** |
| **Reference of the ITK*** | Volume 2, supplement I, page 80 |
| **Name of the plant used in ITK** | *Methi*<br>Refer to ITK Code No. 741 |
| **Code** | **224** |
| **Title of the ITK** | **Use *of kalanjiam* and *ragi kuzhi* as storage structure** |
| **Reference of the ITK*** | Volume 2, supplement I, page 81 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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# HORTICULTURAL CROPS

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| **Code** | **40** |
| **Title of the ITK** | **Use of mustard oil and turmeric powder in mango tree for boosting flowering and fruit setting** |
| **Reference of the ITK*** | Volume 2, page 265 |
| **Names of the plants used in ITK** | Mustard and turmeric |
| | **Mustard:** Refer to ITK Code No. 481 |
| | **Turmeric:** Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **1156** |
| **Title of the ITK** | **Colour improvement during ripening of mango fruits** |
| **Reference of the ITK*** | Volume 2, pages 265,266 |
| **Name of the plant used in ITK** | Turmeric |
| | Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **1880** |
| **Title of the ITK** | **Use of green *arush* leaves for mango ripening** |
| **Reference of the ITK*** | Volume 2, page 266 |
| **Name of the plant used in ITK** | *Arush* |
| | Refer to ITK Code No. 217 |

| | |
|---|---|
| **Code** | **1883** |
| **Title of the ITK** | **Use of paddy straw for ripening of Alphonso mango** |
| **Reference of the ITK*** | Volume 2, page 266 |
| **Name of the plant used in ITK** | Paddy |
| | Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **2164** |
| **Title of the ITK** | **Use of neem cake in mango** |
| **Reference of the ITK*** | Volume 2, page 266 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **229** |
| **Title of the ITK** | **De-suckering in banana, herbal pesticide for eriophid mite, weed control in paddy and drip irrigation for watermelon** |
| **Reference of the ITK*** | Volume 2, page 267 |
| **Name of the plant used in ITK** | Chilli, tobacco, *malaipurasu* and neem<br>**Chilli:** Refer to ITK Code No. 139<br>**Tobacco:** Refer to ITK Code No. 139<br>**Neem**: Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **494** |
| **Title of the ITK** | **Use *of Albizia* leaves for faster ripening of banana** |
| **Reference of the ITK*** | Volume 2, pages 268,269 |
| **Name of the plant used in ITK** | *Albizia* |
| **Name in Indian languages** | Bengali: *sirish;* Gujarati: *pilo sarasio;* Hindi: *siris;* Kannada: *bagemara;* Malayalam: *vaga;* Marathi: *chichola, sirisha;* Sanskrit: *sirisha',* Tamil: *vagei;* Telugu: *dirasana.* |
| **English name** | East Indian walnut, siris tree |
| **Botanical name** | *Albizia lebbeck* Benth. |
| **Active ingredients** | The tree is a good substitute for teak *{Tectona grandis* Linn.) and sal *(Shorea robusta* Gaertn. f.) after suitable seasoning and preservative treatment. The plant is reported to have antiseptic, anti-dysenteric and anti-tubercular properties. The bark has acrid taste. It is recommended for bronchitis, leprosy, paralysis and helminth infections. The bark and seeds are astringent, useful in piles and diarrhoea, and act as tonic and restorative. A reddish-brown gum exudes from the bark and dries into stalactiform masses. The root-bark and root-gum are used as dental powder for strengthening the gums. The bark yields tannins. |
| **Geographical indications** | A large, erect, unarmed, deciduous, spreading tree common all over India, from the plains up to 900 m in the Himalayas, and also in the Andamans. Bark dark-brown to greenish-black, rough, with longitudinal and transverse fissures on outer surface; inner surface whitish with fine longitudinal striations; leaves bipinnate with 8-18 leaflets; inflorescence |

Contents

Tree in full bloom

Habit

in globose heads of greenish yellow flowers; pods yellowish brown, strap-shaped with 6-10 seeds. The tree, which attains a clear bole of 6-9 m and a girth of 1.8 m, prefers moist situations, and is found to grow on a variety of soils. It can be raised by direct sowing and planting out seedlings from nursery. Stump-planting also proved successful. The seeds are sown in the nursery during March-April and watered regularly but moderately and the beds kept well weeded. The young plants are ready for transplanting early in the rainy season. The tree is planted to check soil erosion, as shade tree in coffee and cardamom plantations and as green-manure. It is planted along road-sides and in gardens.

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| **Code** | **1889** |
| **Title of the ITK** | **General care of orchard** |
| **Reference of the ITK*** | Volume 2, page 270 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **1891** |
| **Title of the ITK** | **Ensuring fruit quality** |
| **Reference of the ITK*** | Volume 2, page 270 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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|---|---|
| **Code** | **1468** |
| **Title of the ITK** | **Use of lemon juice to increase the productivity of citrus** |
| **Reference of the ITK*** | Volume 2, page 270 |
| **Name of the plant used in ITK** | Lemon |

Contents

**Names in Indian languages**

Bengali: *baranebu, goranebu;* Gujarati: *motu limbu;* Hindi: *baranibu, jambira, paharikaghzi, paharinimbu;* Kannada: *bijapura, bijuri;* Marathi: *idalimbu, thoralimbu;* Tamil: *malai elumichai, periya elumichai;* Telugu: *bijapuram.*

**English name**

Lemon

**Botanical name**

*Citrus limon* (Linn.) Burm. f.

**Active ingredients**

Lemon is generally taken as fresh fruit. It is widely used in the preparation of lemonade, squash and home-made sherbet. Lemon juice may be used in preparing effervescent, diaphoretic and diuretic draughts. It is a well known French remedy for colds. The juice also possesses bactericidal property.

**Geographical indications**

Flowers

Habit

A tree up to 6 m in height, of spreading habit, thought to be native to India but not found growing wild anywhere. Spines small, stout; leaves light-green, oblong to elliptic ovate, lanceolate, sharp-pointed, sub-serrate, petioles narrowly winged; flowers purple in the bud, large; fruits ovoid or oblong, 7.5-12.5 cm long with a terminal nipple, very acrid; seeds few, small. The lemon presents a number of diverse forms. The common lemons in India are probably indigenous citron-lemon hybrids. Pati-lebu distributed throughout Assam is valued for its flavour and juice, which makes a refreshing sherbet.

**Code**

**234**

**Title of the ITK**

**Removal of fog in grape by smoking**

**Reference of the ITK***

Volume 2, page 272

**Name of the plant used in ITK**

Neem

Refer to ITK Code No. 151

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|---|---|---|
| **Code** | **:** | **158** |
| **Title of the ITK** | **:** | **Rhinoceros beetle control in coconut** |
| **Reference of the ITK*** | : | Volume 2, page 274 |
| **Name of the plant used in ITK** | : | Castor |
| | | Refer to ITK Code No. 1808 |

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|---|---|
| **Code** | **160** |
| **Title of the ITK** | **Control of termites in coconut** |
| **Reference of the ITK*** | Volume 2, page 274 |
| **Name of the plant used in ITK** | Curcuma |
| | Refer to ITK Code No. 460 (11) |

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|---|---|
| **Code** | **136** |
| **Title of the ITK** | **Control of insects in vegetable crops** |
| **Reference of the ITK*** | Volume 2, page 275 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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|---|---|
| **Code** | **394** |
| **Title of the ITK** | **Use of teak leaves in bitter gourd for multipurpose utility** |
| **Reference of the ITK*** | Volume 2, page 275 |
| **Name of the plant used in ITK** | Teak |
| | Refer to ITK Code No. 2305 (d) |

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|---|---|
| **Code** | 402 |
| **Title of the ITK** | **Use of *hing* to induce female flowering in cucurbitaceous crops** |
| **Reference of the ITK*** | Volume 2, page 276 |
| **Name of the plant used in ITK** | *Hing* |
| | Refer to ITK Code No. 702 |

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| **Code** | **1886** |
| **Title of the ITK** | **Use of sugarcane-juice solution for increasing yield of fruits in cucurbits** |
| **Reference of the ITK*** | Volume 2, page 278 |
| **Name of the plant used in ITK** | Sugarcane |
| **Names in Indian languages** | Hindi: *pundia, paunda;* Kannada: *pata patti kabbu, hottai kabbu;* Malayalam: *karimbu;* Sanskrit: ikshu, khanda, sarkara; Tamil: poovam karumbu; Telugu: cheruku. |
| **English name** | Sugarcane, noble cane |
| **Botanical name** | *Saccharum officinarum* Linn. |
| *Active ingredients* | The glucose fraction in the juice is generally on the higher side, which is not a disadvantage of chewing purposes. In many countries such as Barbados and Mauritius these canes were the mainstay of sugar production till the introduction of the hybrid varieties, and in India *gur* of excellent quality was being produced from the juice of the noble canes. |
| **Geographical indications** | A tall perennial grass, known only under cultivation, with culms of varying thickness and colour, ranging from pale or dark-green to dark-yellow, red, violet and often striped; canes with relatively low fibre and high sucrose content. Leaves long and narrow or relatively broad, erect or drooping, varying in colour from light to dark-green, sometimes with a purplish tinge; inflorescence large and plumose, with main axis glabrous without long hairs; glumes generally three, rarely four; lodicules not ciliate; the sessile spikelet of the pair always blooms first. |

Schematic representation

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|---|---|
| **Code** | **1892** |
| **Title of the ITK** | **Traditional practice for early germination of bitter gourd** |
| **Reference of the ITK*** | Volume 2, page 278 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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|---|---|
| **Code** | **366** |
| **Title of the ITK** | **Use of *kochilla (Strychnos nux-vomica)* and cowdung compost in brinjal for controlling fruit- and shoot-borer** |
| **Reference of the ITK*** | Volume 2, page 279 |
| **Name of the plant used in ITK** | *Kochilla*<br>Refer to ITK Code No. 168 |

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|---|---|
| **Code** | **1477** |
| **Title of the ITK** | **Pest control in vegetable crops by spraying leachate of bamboo pieces** |
| **Reference of the ITK*** | Volume 2, pages 279,280 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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|---|---|
| **Code** | **346** |
| **Title of the ITK** | **Control of tomato wilt by turmeric and asafoetida extraction** |
| **Reference of the ITK*** | Volume 2, page 280 |
| **Names of the plants used in ITK** | Turmeric and *hing*<br>**Turmeric:** Refer to ITK Code No. 481<br>***Hing:*** Refer to ITK Code No. 702 |

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|---|---|
| **Code** | 1470 |
| **Title of the ITK** | **Propagation of *Colocasia* sp.** |
| **Reference of the ITK*** | Volume 2, page 281,282 |
| **Name of the plant used in ITK** | Mango and guava |
| **Names in Indian languages** | **Guava:** Bengali: *goaachhi, peyara, piyara;* Gujarati: *jamrud, jamrukh, peru;* Hindi: *amrud, safed safari;* Kannada: *sebe hannu, jama phala;* Malayalam: *pera, koyya;* Marathi: *jamba, tupkel;* Tamil: *koyya;* Telugu: *ettajama, goyya, tellajama.* |
| **English name** | ***Guava:*** Common guava |

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**Contents**

**Botanical name**

***Guava:*** *Psidium guajava* Linn.

**Active ingredients**

***Guava:*** It is used in the preperation of guava cheese, canned guava and guava jelly. Leaves contain wax, resins, sugar, carotene, vitamin-B 1, B2 and B6. The leaves are used for wound ulcer and as an astringent for bowel. The young leaves are used as a tonic in the diseases of the digestive system. The decoction of leaves is used in cholera. The bark is valued for astringent properties and employed in diarrhoea in children. The flowers are said to cool the body and are used in bronchitis. The fruit is tonic, cooling and laxative, and is also used in diarrhoea and dysentery.

**Geographical indications**

***Guava:*** An arborescent shrub or small tree, up to 8.0 m high; leaves light green, finely pubescent and chartaceous; flowers white and fragrant; fruits green to light-yellow, but in some varieties red, varying in shape and size to a great extent; flesh creamish white to yellow and in some red. It is often referred to as the apple of the tropics; It is a native of tropical America, probably from Mexico to Peru, and has long been naturalized in India. It grows nearly throughout the country up to 1,500 m and is cultivated commercially in almost all the states of India.

Branch

**Code** **1475**

**Title of the ITK** **Reduction bitterness and controlling or preventing insect attack in sweet potato *(Ipomoea batatas)***

**Reference of the ITK*** Volume 2, page 282

**Name of the plant used in ITK** *Mahua*

Refer to ITK Code No. 1389

**Code** **766**

**Title of the ITK** **Techniques for raising horticultural crops**

**Reference of the ITK*** Volume 2, pages 286-287

**Name of the plant used hi ITK** Linseed

**Names in Indian languages** Bengali: *masina;* Gujarati: *alsi;* Hindi: *Alsi, tisi;* Kannada: *agasi;* Marathi: *javas;* Sanskrit: *atasi;* Tamil: *alivirai;* Telugu: *avisi.*

Contents

**English name** Linseed

**Botanical name** *Linum usitatissimum* Linn.

**Active ingredients** It is demulcent, emollient, expectorant and diuretic, it is astringent after roasting. The whole seed is prescribed as a laxative

**Geographical indications**

Flowers

Habit

An erect annual, 60-120 cm high, cultivated throughout the plains of India and up to an altitude of 1,800 m; flowers small, blue, bluish violet or white, in terminal panicles; fruits capsular, with five cells, each containing 2 seeds; seeds yellowish or blackish brown, small, flattened, oval, with smooth shining coat.

**Code** 240

**Title of the ITK** **Increasing the germination of solanaceous tropical vegetables**

**Reference of the ITK*** Volume 2, pages 287-288

**Names of the plants used in ITK** Coconut and palmyra

**Names in Indian languages**

***Coconut:*** Bengali: *dab, narikel;* Hindi: *nariyal;* Kannada: *tengu;* Malayalam: *thenna, thenga, narikelam;* Marathi: *narel, naral;* Sanskrit: *narikela;* Tamil: *tennaimaram, tenkai',* Telugu: *kobbarichettu, narikelamu, tenkaya.*

***Palmyra:*** Assamese: *tal;* Bengali: *tal, talgachh;* Gujarati: *tad;* Hindi: *tad, tal, tar-ka-jhar;* Kan: *taalimara, taatinungumara;* Malayalam: *karimpana, nongu* (kernel), *pana, talam;* Marathi: *tad, talat-mad, tamar;* Oriya: *talo, tanlo, tri-norajo;* Sanskrit: *thrinaraja;* Tamil: *karumpanei, nonku* (kernel), *panai-marom;* Telugu: *taadi* (taati-) *chettu, tooti.*

**English names**

***Coconut:*** Coconut

***Palmyra:*** Brab tree, palmyra palm

**Botanical names**

***Coconut:*** *Cocos nucifera* Linn.

***Palmyra:*** *Borassus flabellifer* Linn.

Contents

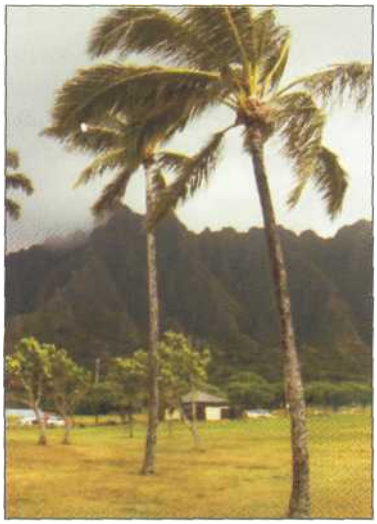
**Active ingredients**

***Coconut:*** The fresh kernel is consumed all over the India and it forms an ingredient of many Indian food preparations. Coconut cake forms a valuable feeding stuff for cattle.

***Palmyra:*** In Tamil Nadu the leaves are employed as green manure for paddy and also to reclaim saline and alkaline soils; they are said to be a source of potasium. Sometimes they are fed to cattle.

**Geographical indications**

**Coconut:** A tall and stately palm, growing to a height of 80 ft., or more when fully mature, bearing a crown of large pinnate leaves. The trunk is stout (l-l'/i ft diameter), straight or gently curved, rising from a swollen base surrounded by a mass of roots; rarely branched, it is marked by ring-like leaf scars which are not prominent. The leaves are 6-18 ft, long, pinnatisect; leaflets 2-3 ft long, narrow and tapering. In the axil of each leaf is a spathe enclosing a spadix, 4-6 ft long, stout, straw or orange-coloured, and simply branched. The palm is monoecious. The female flowers are relatively few, 1 in. long and globose, borne at the base of the panicle. The male flowers are numerous, small and sweet-scented, borne towards the top of the panicle. The fruit is ovoid, three-angled, 6-12 in. long, containing a single seed. The exocarp (outer husk) is thick and fibrous and encloses a hard and bony endocarp is the testa with a thick albuminous endosperm (meat). At one end of the shell are three pores, below one of which, and embedded in the meat, is the small embryo. The cavity of the endosperm is large and is filled in the unripe fruit with a watery fluid (coconut water); it is only partly filled in the ripe fruit. In India the bulk of the area under coconut is concentrated in the coastal and deltaic regions of south India. The principal areas of cultivation in India are: Travancore, Cochin and Malabar in Kerala, East Godavari in Andhra Pradesh and Tanjavur districts in Tamil Nadu, Puri and Cuttack districts in Orissa, Ratnagiri and North Kanra districts in Maharashtra and Mysore, Tumkur, south, north Kanara and Hassan districts in Karnataka.



**Palmyra:** A very tall**,** magnificent dioecious (rarely hermaphrodite) palm, 20-23 m in height and 1.0-2.2 m in girth, sometimes up to 31 m in height, with a fine crown of 30-40 large leaves, found throughout tropical India, especially along the peninsular coast and in West Bengal and Bihar. Trunk blackish grey, cylindric, with a dense mass

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of long rootlets near the ground, generally straight, swollen above the middle and again contracting upwards, old stems marked with black, narrow scars of petioles, young stems covered with dry leaves or with the bases of their petioles; leaves palmately divided, fan-shaped, petioles, 0.6-1.2 m long, stout, semi-terete, spinescent-margined, lamina, 0.9-1.5 m in diameter, rigidly coriaceous, divided into lanceolate or linear 2-fid lobes, segments 60-80, shining, folded along the midrib, spinulose; spadices very large, stout, male spadix stout, cylindric, branched, or sometimes double, bracts enclosing spikelets, flower yellow; female spadix sparingly branched, flowers yellow, solitary, few, scattered; drupes 15-20 cm in diameter, enclosed by the enlarged perianth, distinctly trigonous when young, almost spherical when old; pyrenes 3—1, rarely 4, obcordate, fibrous outside with hyaline edible endosperm. The palmyra, probably native to India, is the most striking of the palms and is a grand feature in the landscape of the tropical regions. It has run wild in many parts of India and has also been cultivated, chiefly in the dry or sandy localities of Andhra Pradesh, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu and West Bengal. Several large groves occur in some of these areas. It grows in isolated patches in other states such as Assam, Gujarat, Maharashtra and Uttar Pradesh.

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| **Code** | **539** |
| **Title of the ITK** | **Use of *binda (Colebrookea oppositifolia)* leaves for ripening of fruits** |
| **Reference of the ITK*** | Volume 2, page 288 |
| **Name of the plant used in ITK** | *Binda* |
| **Name in Indian languages** | Hindi: *binda, pansra.* |
| **Botanical name** | *Colebrookea oppositifolia* Sm. |
| **Active ingredients** | The leaves are applied for wounds and bruises. A preparation of the root is used by the Santals in epilepsy. The wood is used for making gun-powder charcoal. |
| **Geographical indications** | A densely woolly shrub met with in the hilly parts of India up to an altitude of 4,000 ft. |

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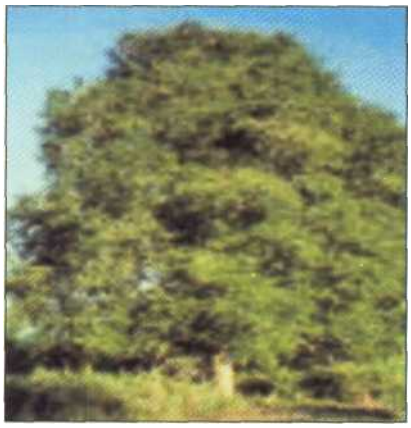
| **Code** | **125 (a)** |
| **Title of the ITK** | **Organic farming cultivation and coconut-based land use system** |
| **Reference of the ITK*** | Volume 2, pages 294-295 |
| **Name of the plant used in ITK** | Tamarind and vayvilangam |
| **Names in Indian languages** | **Tamarind:** Assamese: *tetuli;* Bengali: *tentul, anbli;* Gujarati: *amli, ambli;* Hindi: *imli, amli, anbli;* Kannada: *hull, amli;* Malayalam: *puli, amlam;* Marathi: *chinch, chichi;* Oriya: *tentuli, Konya;* Tamil: *puli, amilam;* Telugu: *chintachettu, sintachettu* (tree), *chintapandu* (fruit). |
| **English name** | **Tamarind:** Tamarind tree |
| **Botanical name** | **Tamarind:** *Tamarindus indica* Linn. |
| **Active ingredients** | **Tamarind:** Invert sugar (30-40%) is the most important constituent. Tartaric acid is the principal acid in the pulp. Pulp is much used in the Indian medicine as a refrigerant, carminative and laxative and is also commonly prescribed in febrile diseases and bilious disorders. The pulp is also reported to posses antiseptic and is recommended as a poultice on inflammatory swelling. The kernels of seed contain protein (17.1-20.1 g/100 g), fat, carbohydrate (65.1-72.2 mg/100 g), crude fibre and ash. The roasted kernels contain Ca (121 mg /100 g), P (237 mg/100 g). Replacement of 25% or less of rice by this kernel powder produced a significant improvement in the overall nutritive value of rice diet. Ground seed is useful for cattle feed. The seeds, particularly the testae, are said to be astringent and are used to cure diarrhoea and dysentery. An infusion of the leaves is said to be cooling and useful in bilious fever. The bark is astringent and is given in diarhhoea. The leaves have been found to contain the glycosides, bitaxin,orientin and iso-orientin. The leaves are eaten by goat and cattle. They may also be tried for green-manuring in soil. The flowers are considered a good source of honey. |
| **Geographical indications** | **Tamarind:** A moderate-sized to large, evergreen tree, up to 24 m in height and 7 m in girth, but generally smaller, cultivated or found naturalized almost throughout the plains and sub-Himalayan tracts of India, particularly in the south. Bark-brownish or dark-grey, longitudinally and horizontally fissured; leaves paripinnate, up to 15 cm long: leaflets |



Habit

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generally 10-20 pairs, sub-sessile, oblong, 8-30 mm x 5-10 mm; flowers small, yellowish with pink stripes, in lax, few-flowered racemes at the ends of the branchlets; pods 7.5-20.0 cm long, 2.5 cm broad and 1.0 cm thick, more or less constricted between the seeds, slightly curve, brownish ash-coloured, scurfy; seeds 3-12, obovate-oblong, compressed, with a shallow, oblong pit on each side of the flat faces, 1.5 x 0.8 cm smooth, dark-brown, shining. The seeds are contained in loculi, enveloped by a tough, leathery membrane, the so-called endocarp. Outside the endocarp is the light brownish, red, sweetish acidic, edible pulp, traversed by a number of branched, ligneous strands. The outermost covering of the pod is fragile and easily separable.

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| **Code** | **177** |
| **Title of the ITK** | **Manure from coconut waste** |
| **Reference of the ITK*** | Volume 2, page 296 |
| **Name of the plant used in ITK** | Coconut |
| | Refer to ITK Code No. 240 |

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| **Code** | **391** |
| **Title of the ITK** | **Lemon juice as a substitute of hydrochloric acid for tomato-seed extraction** |
| **Reference of the ITK*** | Volume 2, page 297 |
| **Name of the plant used in ITK** | Lemon |
| | Refer to ITK Code No. 1468 |

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| **Code** | 444 |
| **Title of the ITK** | **Preservation of *tal saj* (tender palm nuts) by green *karanja (Pongamia pinnata)* leaves** |
| **Reference of the ITK*** | Volume 2, page 298 |
| **Name of the plant used in ITK** | *Karanja* |
| | Refer to ITK Code No. 1376 |

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| **Code** | **2305 (c)** |
| **Title of the ITK** | **Management of fruit and vegetable crops** |
| **Reference of the ITK*** | Volume 2, pages 300-308 |
| **Names of the plants used in ITK** | *Ain, kuda, kinjal, neem, dinda, karanj, kumbhal, nivdunga, hurya, mi, cashewnut* and *van* |
| **Names in Indian languages** | *Ain:* Bengali: *asan;* Gujarati: *sadar;* Hindi: *asan, sain, saj;* Kannada: *sadada;* Marathi: *ain;* Oriya: *sahaju;* Tamil: *karramarda;* Telugu: *Irani.*<br><br>***Kinjal:*** Malayalam: *pilamuruthu, pillamurda;* Marathi: *kinjal;* Tamil: *pekadukkai;* Telugu: *neemeeri, nimiri.*<br><br>***Dinda:*** Bengali and Hindi: *dholsamudra;* Marathi: *dinda.*<br><br>*Nivdunga:* Bengali: *mansasij, hildaona;* Gujarati: *thor, tuaria;* Hindi: *pattonkisend, sehund, thohar;* Kannada: *yalekalli;* Malayalam: *illakalli;* Marathi: *nayadunga, mingut;* Sanskrit: *snuhi;* Tamil: *ilai-kalli;* Telugu: *akujemudu.* |
| **English name** | ***Kinjal:*** Flowering murdah |
| **Botanical name** | ***Ain:*** *Terminalia alata* Heyne ex Roth<br><br>***Kinjal:*** *Terminalia paniculata* Roth<br><br>***Dinda:*** *Leea macrophylla* Roxb.<br><br>*Nivdunga: Euphorbia neriifolia* Linn. |
| **Active ingredients** | *Ain:* The bark is bitter and styptic and has diuretic and cardiotonic properties. A decoction of the bark is taken internally in tonic diarrhoea and is used locally as an application to weak, indolent ulcers. The tree exudes a jelly-like fluid, which dry up to a light-yellow to umbel coloured. Gum is used as a purgative and as an adhesive. The isolation of galic, ellagic, chebulinic and chebulic acids from the leaves and fruits has been reported.<br><br>***Kinjal:*** Both the bark and the fruit contain tannin and are used for dyeing and tanning.<br><br>***Dinda:*** The leaves of the plant are eaten as vegetable; they are also used as platters. Fruits are edible. Root tubers are deep red in colour, mucilaginous and astringent and are credited with anodyne properties. They are applied to wounds and sores and used for guineaworm and ringworm. |

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*Nivdunga:* Latex is acrid, rubefacient, purgative and expectorant. It is liable to cause dermatitis. It is used to remove warts and eruptions. The juice is employed in ear-ache; mixed with soot. It is applied in ophthalmia. The juice of the plant is used in Gujarat for smearing cuts made by tappers in order to prevent the plam from the attack of red weevil.

**Geographical indications**

*Ain:* A large, deciduous, straight-stemmed tree, with spreading branches and heavy crown, attaining a height of 32 m or more, distributed in the Himalayas from Kangra eastwards to the Goalpara division of Assam and southwards throughout the peninsula, ascending to an altitude of 1,200 m. Bark grey to black, with deep, longitudinal fissures and transverse cracks; leaves elliptic or ovate, with 1-2 glands near the base; flowers dull yellow, in terminal and axillary panicles; fruits up to 5 cm long, with 5 broad, coriaceous, horizontally veined wings. The tree is one of the commonest and most widely distributed of all the important Indian timber species, avoiding only the very arid zones of Punjab and Rajasthan.

***Kinjal:*** A large deciduous tree, found in the tropical semi-evergreen and tropical moist deciduous forests of the western ghats and eastern ghats up to 1,200 m. Bark dark brown, rough, leaves oblong or elliptic, flowers in dense spikes; fruits brown-red, with one very broad and two narrow wings. The tree is found in the tropical semi-evergreen and the tropical moist deciduous forests of the western ghats from Kolaba (Maharashtra) southwards through North and South Kanara (Karnataka) to Kerala. Also found in western Andhra Pradesh, Tamil Nadu and Karnataka.

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***Dinda:*** A herb, 90 cm or more in height, with switchy branches and perennial tuberous roots, distributed throughout the hotter parts of India. Leaves simple, ovate-cordate, conspicuously large (lower leaves up to 60 cm diameter); flowers in corymbose cymes, whitish; berries depressed globose, black.

*Nivdunga:* A large succulent shrub or a small tree, up to 20 ft high, with a jointed, cylindrical or obscurely 5-angled branches bearing short, stipular thorns, more or less confluent in vertical or slightly spiral lines; leaves fleshy, deciduous, obovate-oblong, 6-12 in. long, terminal on the

branches. The trunk is covered with reticulate bark. The plant is common in rocky ground throughout the Deccan peninsula and is often cultivated for hedges in villages throughout India.

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| **Code** | **156** |
| **Title of the ITK** | **Control of Oryctes *rhinoceros* beetle in coconut** |
| **Reference of the ITK*** | Volume 2, page 310 |
| **Name of the plant used in ITK** | *Kollinchi* |
| **Names in Indian languages** | Bengali: *ban-nil-gachh;* Gujarati: *ghodakan, jhila, sarphankho;* Hindi: *dhamasia, sarphonka;* Kannada: *empali, vajuraneeli, koggili;* Malayalam: *kozhenjil, kaata miri;* Marathi: *sirapakha, udhadi, unhali;* Oriya: *kolothiyapokha, mohisiakolothiga, pokha, soropokha;* Sanskrit: *sharapunkha;* Tamil: *kolingi, paavali, katkolingi, kolluk-kay-velai.* |
| **English name** | Wild indigo |
| **Botanical name** | *Tephrosia purprea* Pers. |
| **Active ingredients** | The dried herb is considered to possess tonic, laxative diuretic and deobstruent properties. It is given for the treatment of boils, pimples and bleeding piles. It is reported to be useful in cough and in kidney disorders. The leaves are reported to be useful in jaundice. The roots and the seeds are reported to possess insecticidal and pesticidal properties. |
| **Geographical indications** | A polymorphic, much-branched, suberect, perennial herb, 30-60 cm high, found throughout India, ascending to an altitude of 1,850 m in the Himalayas. Leaves imparipinnate, 5-15 cm long; leaflets 9-21, narrow, oblanceolate, glabrous above, obscurely silky below, flowers red or purple, in leaf-opposed racemes; pods slightly recurved, 3.7-5.0 cm x 4.0 mm, glabrescent; seeds 5-10, greenish grey, smooth. |

Twig

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| **Code** | **399** |
| **Title of the ITK** | **Control of fruit- and shoot-borer in brinjal by using *ranbeli* tree bark** |
| **Reference of the ITK*** | Volume 2, page 311 |
| **Name of the plant used in ITK** | *Ranbeli* |
| **Names in Indian languages** | Bengali: *kait, katbei,* Gujarati: *kavit, kotha, kavith, kovit;* Hindi: *bilin, kait, kavitha;* Malayalam: *vila, vilatti;* Marathi: *kavatha, kavith, kovit;* Tamil: *vilanga;* Telugu: *velanga*. |
| **English name** | Elephant apple, wood apple |
| **Botanical name** | *Feronia limonia* (Linn.) Swingle |
| **Active ingredients** | The fruit is considered tonic, refreshing, cordiacal, astringent, anti-scorbutic and alexiformic. It is used as a substitute for *bael* in the treatement of diarrhoea and dysentery. The leaves are aromatic, carminative and astringent. |
| **Geographical indications** | A small deciduous tree with short, erect, cylindrical stem, 30-40 ft high, and *2-A* ft in girth, bearing thorny branches; leaves pinnate, 3-4 in. long, with small ovate or obovate leaflets; flowers polygamous in lax panicles; fruit large, globose or oblate, 1.0-2.5 in. in diameter with hard, rough, woody pericarp; seeds numerous, small, compressed, embedded in a sweetish aromatic edible pulp. The plant is native of India and Sri Lanka (Ceylon) and is found throughout the plains of India, particularly in dry situations. It occurs wild or cultivated, up to an elevation of 1,500 ft in western Himalayas. It is more common in Deccan, Thana district of Maharashtra and in Madhya Pradesh. It is also reported to occur in parts of Hazaribagh and Palamau in Jharkhand. |

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| **Code** | **520** |
| **Title of the ITK** | **Control of root-and stem-borer of apple by tobacco *tar*** |
| **Reference of the ITK*** | Volume 2, page 313 |
| **Name of the plant used in ITK** | Tobacco<br>Refer to ITK Code No. 139 |

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| **Code** | **683** |
| **Title of the ITK** | **Innovative methods against vegetable pests** |
| **Reference of the ITK*** | Volume 2, page 314 |
| **Names of the plants used in ITK** | Turmeric and mustard |
| | **Turmeric:** Refer to ITK Code No. 481 |
| | **Mustard:** Refer to ITK Code No. 481 |

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| **Code** | **1374** |
| **Title of the ITK** | **Control of fruit borer in brinjal by sindwar leaf extract** |
| **Reference of the ITK*** | Volume 2, page 120 |
| **Name of the plant used in ITK** | *Sindwar* and chilli |
| | **Sindwar:** Refer to ITK Code No. 702 |
| | **Chilli:** Refer to ITK Code No.139 |

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| **Code** | **1401** |
| **Title of the ITK** | **Control of wilt in tomato through use of tobacco leaves** |
| **Reference of the ITK*** | Volume 2, page 318 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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| **Code** | **1402** |
| **Title of the ITK** | **Control of pests in tomato by custard apple fruit solution** |
| **Reference of the ITK*** | Volume 2, page 318 |
| **Name of the plant used in ITK** | Custard apple |
| | Refer to ITK Code No. 1837 |

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| **Code** | **1415** |
| **Title of the ITK** | **Control of insects in vegetables by spraying urine of domestic animals and tobacco-soaked water** |
| **Reference of the ITK*** | Volume 2, page 319 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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| **Code** | **1798** |
| **Title of the ITK** | **Control of diamond-back larvae of cauliflower** |
| **Reference of the ITK*** | Volume 2, page 319 |
| **Name of the plant used in ITK** | Asafeotida |
| | Refer to ITK Code No. 702 |

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| **Code** | **1801** |
| **Title of the ITK** | **Control of potato tuber moth by using neem *khali*** |
| **Reference of the ITK*** | Volume 2, page 320 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 15**1** |

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| **Code** | **1803** |
| **Title of the ITK** | **Control of pests in vegetables by use of seeds of *Embelia ribes*** |
| **Reference of the ITK*** | Volume 2, page 320 |
| **Names of the plants used in ITK** | *Embelia* and neem |
| | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | **1828** |
| **Title of the ITK** | **Use of *Embelia ribes* seed extract for control of pests in vegetables** |
| **Reference of the ITK*** | Volume 2, page 321 |
| **Names of the plants used in ITK** | *Embelia* and *neem* |
| | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | 1833 |
| **Title of the ITK** | **Use of animal urine and neem oil for control of mealy bug in pomegranate** |
| **Reference of the ITK*** | Volume 2, page 321 |
| **Name of the plant used in ITK** | Neem |
| | Refer to ITK Code No. 151 |

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| **Code** | 2077 |
| **Title of the ITK** | **Keeping cement or mud tubs of fermented *neem* powder in the middle of coconut for attracting rhinoceros beetle** |
| **Reference of the ITK*** | Volume 2, page 322 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **2303** |
| **Title of the ITK** | **Use of castor around chilli crop** |
| **Reference of the ITK*** | Volume 2, supplement I, page 84 |
| **Name of the plant used in ITK** | Castor<br>Refer to ITK Code No. 1808 |

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| **Code** | 2303 |
| **Title of the ITK** | **Spraying of *hing* (asafoetida) solution to control leaf curling in chilli** |
| **Reference of the ITK*** | Volume 2, supplement I, page 84 |
| **Name of the plant used in ITK** | *Hing*<br>Refer to ITK Code No. 702 |

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| **Code** | **2470** |
| **Title of the ITK** | **Control of wilt in tomato** |
| **Reference of the ITK*** | Volume 2, supplement I, page 85 |
| **Name of the plant used in ITK** | *Hing* and turmeric<br>***Hing**:* Refer to ITK Code No. 702<br>**Turmeric:** Refer to ITK Code No. 481 |

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| **Code** | 2472 |
| **Title of the ITK** | **Control of mango malformation by application of neem leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, page 94 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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# VETERINARY SCIENCE AND ANIMAL HUSBANDRY

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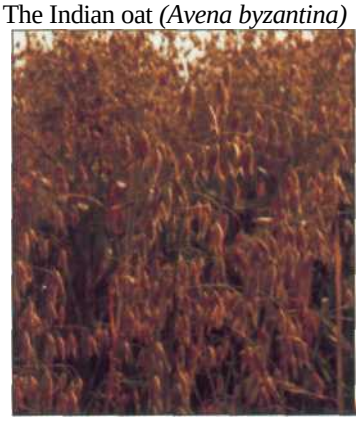
| **Code** | **1172** |
| **Title of the ITK** | **Feeding *oimaanpatta* and germinated oat to induce heat in cattle and buffalo** |
| **Reference of the ITK*** | Volume 2, page 326 |
| **Name of the plant used in ITK** | *Maanpatta* and oat |
| **Name in Indian languages** | ***Oat:*** Hindi: jai. |
| **English name Botanical name** | ***Oat:*** Oat |
| **Active ingredients** | ***Oat:*** *Avena sativa* Linn. |
| **Geographical indications** | ***Oat:*** Oat flour is used in the formulation of a skin-care baby powder and as a preservative for peanut butter and margarine. In medicine, oat is given as nerve stimulant, tonic, soporific, emollient, refrigerant and laxative. It is useful as diphtheric, refrigerant and laxative. It is useful as diphtheric paralysis and dysentery, and acts as an antidote in morphinism and alcoholism. Oat forms an important restorative in exhaustion after febrile diseases. It exerts a very beneficial action upon the heart muscles and on urinary organs; it is diuretic and speedily relieves spasmodic conditions of bladder and ureter. Oat exerts a powerful effect against dental decay.<br><br>***Oat:*** It is a cultivated annual herb, with erect, herbaceous, glabrous or villous culm, drooping or erect, simple, solitary, ligulate, sessile leaves; a loose, open panicle of spikelets; and caryopsis with albuminous seeds. Oat ranks fourth in importance in world production of cereals, exceeded only by wheat, rice and maize. The Indian oat *(Avena byzantina)* is generally cultivated in countries around the Mediterranean and in tropical and sub-tropical regions. In India it is cultivated on a large scale in Punjab, Haryana and Uttar Pradesh and to a limited extent in Himachal Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa, Bihar and West Bengal. |



Habit

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| **Code** | : | **1185** |
| **Title of the ITK** | : | **Making successful conception after natural service by giving a mixture *of kattha, chhoti dudhi* and coriander to the cow or buffalo** |
| **Reference of the ITK*** | | Volume 2, page 326 |
| **Name of the plant used in ITK** | | *Kattha, chhoti dudhi* and coriander |
| **Name in Indian languages** | | ***Coriander**:* Hindi: *dhania* |
| **English name** | | ***Coriander:*** Croton purging |
| **Botanical name** | | ***Coriander:*** *Coriandrum sativum* Linn. |
| **Active ingredients** | | ***Coriander:*** The leaves are acrid, astringent, aromatic, analgesic, anti-inflammatory and stypic, and are useful in halitosis, pharyngopathy, epistaxis, ulemorrhagia, chronic conjunctivitis, hiccough, inflammations, suppuration, haemorrhoids, jaundice and odontalgia. |
| **Geographical indications** | | ***Coriander:*** Coriander, an umbelliferous plant indigenous to southern Europe, is found occasionally in Britain in fields and waste places, and by the sides of rivers. It is frequently found in a semi-wild state in the east of England, having escaped from cultivation. A glabrous, aromatic, herbaceous annual, 30-90 cm in height; leaves decompound, lower petioled and upper ones short petioled or sub-sessile, imparipinnatisect into linear-setaceous lobes; flower small, white or pinkish purple in compound terminal umbels; fruits yellowish brown, globular and ribbed, separating into two halves (mericarps), each containing a seed. |

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| **Code** | **1545** |
| **Title of the ITK** | **Use of harad and mustard oil to bring cattle in heat** |
| **Reference of the ITK*** | Volume 2, page 327 |
| **Name of the plant used in ITK** | Mustard |
| | Refer to ITK Code No. 481 |

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| **Code** | **1583** |
| **Title of the ITK** | **Inducing heat in cows and buffaloes by feeding bamboo rhizome** |
| **Reference of the ITK*** | Volume 2, page 327 |
| **Name of the plant used in ITK** | Bamboo |
| **Names in Indian languages** | Bengali: *karail;* Gujarati: *nakor vans;* Hindi: *bans kaban, bans khurd, narbans;* Kannada: *kiri bidiru;* Malayalam: *kal mungil;* Marathi: *bhariyel;* Sanskrit: *vansha;* Tamil: *kalmungil;* Telugu: *sadanapa veduru*. |
| **English name** | Male bamboo, solid bamboo |
| **Botanical name** | *Dendrocalamus strictus* Nees |
| **Active ingredients** | Male bamboo is extensively employed as a raw material for paper manufacture in India. The pulp is suitable for use in the rayon industry. Dead and flowered bamboos appear quite satisfactory for paper manufacture provided they are not attacked by insects. |
| **Geographical indications** | A densely tufted bamboo with a strong, elastic, thick-walled or solid culms varying in size according to locality. It is found in deciduous forest and in dry or moderately dry regions practically all over India up to 3,500 ft Culms usually 20 to 50 ft high x 1-3 in. diameter, somewhat swollen at the nodes and bearing in open situations leafy, often deflexed, branches from the base; upper branches curved and drooping; internodes 12-18 in. long; culm sheaths variable. Flowering irregular and sporadic, at times gregarious over large areas. Seeds similar in form to, but about half the size of, unhusked wheat; weight, 800-1,560 to 28 g; germinating capacity 25-80%. |

Habit

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| **Code Title of the ITK** | **1915**<br>**Feeding of growing bamboo shoot *{karil)* to induce puberty to young animals** |
| **Reference of the ITK*** | Volume 2, page 328 |
| **Name of the plant used in ITK** | *Karil* |
| | Refer to ITK Code No. 1583 |

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| **Code** | **1954** |
| **Title of the ITK** | **Use of mustard vegetable extract to bring cow in heat** |
| **Reference of the ITK*** | Volume 2, page 328 |
| **Name of the plant used in ITK** | Mustard |
| | Refer to ITK Code No. 750 |

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|---|---|
| **Code** | **1955** |
| **Title of the ITK** | **Use of fried grains of lentil and salt for onset of heat in buffalo** |
| **Reference of the ITK*** | Volume 2, page 329 |
| **Name of the plant used in ITK** | Lentil |
| **Names in Indian languages** | Assamese: *masurmoha;* Bengali, Gujarati, Hindi and Marathi: *masur, masser, masuri;* Kannada: *massur, chanangi;* Telugu: *misurrpappu, chirisanagalu.* |
| **English name** | Lentil |
| **Botanical name** | *Lens culinaris* Medic. |
| **Active ingredients** | It is mostly used as a *dal.* The presence of trypsin-inhibitor in lentil has been reported. |
| **Geographical indications** | A small, erect, softly pubescent herb, 15-75 cm high with compound leaves and white, rose, red or violet flowers borne solitarily or in 2—4 flowered racemes; pods smooth, compressed, oblong or rhomboid, 1-1.5 cm long, containing two smooth, compressed, lenticular seeds, varying in colour from pale pinkish buff to Prussian red. It is widely grown in the Mediterranean countries, particularly in Spain, France, Italy and Greece in Europe, Morocco, Algeria, Egypt and Ethiopia in north Africa, Jordan, Syria and Turkey in Middle East. India and Pakistan are, however, the major producers at present. In recent years it is being grown also in Argentina, Ecuador and Chile. Its cultivation in India **is** quite ancient. It **is** grown throughout north India, particularly in Uttar Pradesh, Madhya Pradesh, Bihar and West Bengal and to a smaller extent in Punjab, Rajasthan, Maharashtra and Gujarat. |

Habit

Contents

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|---|---|
| **Code** | **2201** |
| **Title of the ITK** | **Use of ground brinjal to bring animal in heat** |
| **Reference of the ITK*** | Volume 2, page 329 |
| **Name of the plant used in ITK** | Brinjal<br>Refer to ITK Code No. 1842 |

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|---|---|
| **Code** | **2276** |
| **Title of the ITK** | **Anoestrus** |
| **Reference of the ITK*** | Volume 2, page 329 |
| **Names of the plants used in ITK** | Pearlmillet, clusterbean, castor and rice |
| **Names in Indian languages** | **Pearlmillet:** Bengali and Hindi: *bajra, lahra;* Gujarati and Marathi: *bajri;* Kannada: *sajje;* Tamil: *kambu;* Telugu: *sajja, ganti.* |
| **English name** | **Pearlmillet:** Pearlmillet, bulrush millet, spiked millet |
| **Botanical name** | **Pearlmillet:** *Pennisetum typhoides* (Burm. f.) Stapf & C.E. Hubbard |
| **Active ingredients** | **Pearlmillet:** It serves as a staple foodgrain in many parts of India. |
| **Geographical indications** | **Pearlmillet:** A **tall,** erect, annual with slender, culms, 1-3 m high, simple or branched; leaves lanciolate; inflorescence a false spike, compact, cylindrical, greenish yellow or with a slight pinkish tinge, varying in size from 6 to 35 cm in length and 0.5 to 4.25 cm in diameter, densely packed with spikelets and bristles; grains pale yellow or white and from pale grey to dull light blue in colour. |

Habit

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| **Code** | **44** |
| **Title of the ITK** | **Use of *shallu* or *hallu (Lepidium sativum)* in animal ration** |
| **Reference of the ITK*** | Volume 2, page 329 |
| **Name of the plant used in ITK** | *Shallu* or *hallu* |

Contents

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|---|---|
| **Names in Indian languages** | Bengali: *halim, aleveri;* Gujarati: *asalio, halim;* Hindi: *halim, hurf;* Kannada: *allibija, kurutige;* Marathi: *ahliva;* Punjabi: *halim, Shargundei, tezak;* Tamil: *aliverai;* Telugu: *adalavitulu, adeli, adityalu.* |
| **English name** | Garden cress *Lepidium* |
| **Botanical name** | *sativum* Linn. |
| **Active ingredients** | Its leaves are consumed as salad. It is also cooked with vegetable curry and is used as garnish. It also has medicinal use and is used in the treatment of asthma, cough and bleeding piles. Leaves are mildly stimulent and diuretic. The root is used in secondary syphilis and tenesmus. The seeds of the plant are rubefacient, galactagogue, emmenagogue, laxative, tonic, aphrodisiac and diuretic. |
| **Geographical indications** | A small, herbaceous, glabrous annual, 15-45 cm high, cultivated as a salad plant throughout India; it is found as an escape. Leaves variable, entire or variously lobed or pinnatisect; radicle leaves long-petioled, twice pinnatisect, cauline leaves sessile, linear, linear-oblong or pinnatifid; flowers small, white, in long racemes; pods small, orbicular-ovate, notched at apex, winged; seeds solitary in each cell. It is a poly-morphous species, considered to have originated primarily in the highland region of Ethiopia and Eritrea; Europe and western Asia are regarded as secondary centres of form origination. |

Habit

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| **Code** | **54** |
| **Title of the ITK** | **Barley feed for weak animals** |
| **Reference of the ITK*** | Volume 2, page 330 |
| **Name of the plant used in ITK** | Barley |

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**Contents**

**Names in Indian languages**

Bengali: *jabjau;* Gujarati:yaw, *jav, ymvah;* Hindi: *jau, jav;* Kannada:y'ave *godhi;* Marathi:y'ava; Punjabkjaon; Sanskrit: *yava;* Tamil: *barliyarisi;* Telugu: *barlibiyam, yavaka.*

**English name**

Barley

**Botanical name**

*Hordeum vulgare* Linn.

**Active ingredients**

The bark of barley is ground to flour for local consumption. Barley grain is demulcent. Powdered parched grains are used in the form of a gruel for painful and atonic dyspepsia. It is given in feverish disorder, inflammation of the membranes of the chest, diarrhoea and catarrhal disorder of bowel. The straw is used as a roughage for livestock or as a bedding.

**Geographical indications**

Habit

An annual erect, stout, tufted herb, *2-4* ft high, resembling wheat in habit; leaves few, linear-lanceolate, upper one close to the spike; sheath smooth, striate; ligules short, membranous; spikes terminal, linear-oblong, compressed, *2—2*$^{1}/_{2}$ in. long, densely flowered: spikelets sessile, arranged in threes on two sides of a flattened rachis, all fertile (6-rowed type), or lateral ones barren and occasionally rudimentary (2-rowed type); glumes 2, small, narrow, short-awned, enclosing three spikelets; lemma lanceolate, five-ribbed, tapering into a long, straight or recurved awn; palea a little smaller than lemma, with margins inflexed; lodicules 2; stamens 3; stigmas 2; fruit a caryopsis, elliptic, $^{3}/_{8}$ in. long, short-pointed, grooved on the inner face, smooth, free or adherent to palea or both to lemma and palea. The important producer of barley are USSR, China, USA, Canada and India, and countries bordering the Mediterranean, which together contribute more than 50% of the total world production. Barley has been cultivated since long in northern India. It is grown in the plains as well as in the hilly regions of the Himalayas up to an altitude of 14,000 ft. The chief producing states, in the order of importance are Uttar Pradesh, Rajasthan, Bihar and Madhya Pradesh. Other states producing barley are West Bengal, Himachal Pradesh, Jammu & Kashmir and Maharashtra.

**Code**

323

**Title of the ITK**

**Use of *bichchu (Urtica dioica)* grass to enhance milk production in animals**

**Reference of the ITK***

Volume 2, page 330

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|---|---|
| **Name of the plant used in ITK** | *Bichchu* grass Hindi: |
| **Name in Indian languages** | *Bichhu booti.* |
| **English name** | Stinging-nettle *Urtica* |
| **Botanical name** | *dioica* Linn. |
| **Active ingredients** | The irritant property of the nettle has long been used externally to excite activity in paralysed limbs, and internally for the treatment of haematoptysis and other haemorrhages. The herb is also used in sciatica, palsy and rheumatism. The treatment for paralysis is called flagellation or urtication. The urticadng properties of the hairs are attributed to the presence of acetylcholine, histamine, and 5: hydroxy-tryptamine (5-HT), and histamine-liberating enzyme is also present. |
| **Geographical indications** | A robust, dioecious herb, up to 2 m high with grooved stems abundantly armed with stinging hair, found in the Himalayas from Kashmir to Kumaun at altitudes of 2,100 - 3,200 m; leaves ovate or lanceolate, usually cordate, serrate; flowers greenish in axillary cymes.  Habit |

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| **Code** | **1188** |
| **Title of the ITK** | **Use of mixture *of ajwain,* fenugreek, sugar and pigeonpea to increase milk of cow and buffalo** |
| **Reference of the ITK*** | Volume 2, pages 331-332 |
| **Names of the plants used in ITK** | *Ajwain*, fenugreek, sugar and pigeonpea |
| **Names in Indian languages** | **Pigeonpea:** Bengali, Hindi and Marathi: *arhar, tur, tuver;* Gujarati: *tuver;* Kannada: *togari;* Malayalam: *thuvara;* Sanskrit: *adhaki, tuvarika, tuwari;* Tamil: *thovaray;* Telugu: *kandulu.* |
| **English name** | **Pigeonpea:** Congo pea, pigeonpea, red gram |
| **Botanical name** | **Pigeonpea:** *Cajanus cajan* (Linn.) Millsp. |

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**Contents**

**Active ingredients**

**Pigeonpea:** *Arhar* is largely consumed in the form of split pulse or dal or, when tender, as a vegetable. The green leaves and tops of the plant are used as fodder and as green manure. The husk of the pods and seeds constitutes a valuable cattle feed. *Arhar* is a good soil-renovator and is used against soil erosion and also as a cover crop.

**Geographical indications**

**Pigeonpea:** An erect, annual or perennial hairy, suffruticose herb or shrub, 0.75 to 4.3 m in height, cultivated nearly throughout India up to an altitude of 1,800 m in the Himalayas. Leaves trifoliolate, leaflets oblong-lanceolate, entire, acute mucronate, sub-coriaceous; flowers yellow, or yellow veined with red or purple, in sparse distinctly peduncled, densely hairy, corymbose racemes, often forming a terminal panicle; pods 5.0-7.5 cm x 0.6-1.25 cm, finely downy, 3-7 seeded; seeds greyish brown, red or pale yellow, often with a small caruncle. Although India is believed to be the native home of pigeonpea or *arhar*, some doubt exists whether the genus was originally a native of India or of Africa. The absence of any wild or even naturalized form anywhere in the Indian subcontinent, perhaps precludes an Indian origin to this genus.

Habit

**Code**

**1192**

**Title of the ITK**

**Use of a mixture of mustard oil, sugar, pulse grains and unripe banana finger to increase milk yield in cows and buffaloes**

**Reference of the ITK***

Volume 2, page 332

**Names of the plants used in ITK**

Mustard, sugar, pulse, banana

**Names in Indian languages**

**Banana:** Hindi: *kela;* Kannada: *bale;* Malayalam: *vazha;* Sanskrit: *kadali*, ramMa; Tamil: *vazhai*Telugu: *arati, anati*

**English name**

**Banana:** Edible banana, plantain

**Botanical name**

**Banana:** *Musa paradisiaca* Linn.

**Active ingredients**

**Banana:** Banana peel is a potential source of pectin. Banana fruit possesses mild laxative properties. The fruit aids in combating diarrhoea and dysentery and promotes the healing of intestinal region in ulcerative colitis. Banana powder is effective in the treatment of colic disease. The ripe fruit is useful in diabetes, uremia, nephritis, gout, hypertension and cardiac disease. Unripe fruit and cooked

Contents

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| | flowers are useful in diabetes. The ash of the root and also the entire plant is anthelmintic. |
| **Geographical indications** | **Banana:** Edible bananas of hybrid origin valued for their seedless fruits are included under this specific name. They |

Flowers and Fruits

Habit

comprise all the diploid, triploid or tetraploid clones, mainly hybrids of *M. acuminata* and *M. balbisiana*.

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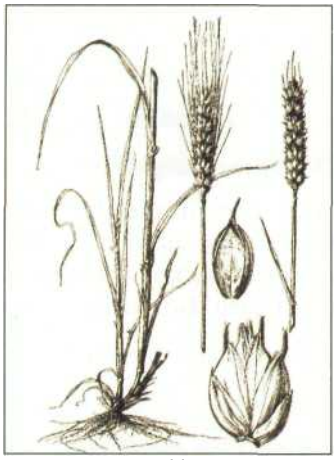
| **Code** | **1217** |
| **Title of the ITK** | **Prepartum feeding with special ration** |
| **Reference of the ITK*** | Volume 2, page 332 |
| **Names of the plants used in ITK** | Wheat and mustard |
| **Names in Indian languages** | **Wheat:** Bengali: *giun, gom, gam;* Gujarati: *ghavum, gawn, govum;* Hindi: gehun, giun, kanak, gandham; Kannada: godhi; Malayalam: gendum, kotanpam, godamba; Marathi: gahum, gahung; Tamil: godumai, godumbayarisi; Telugu: goodhumalu. |
| **English name** | **Wheat:** Common wheat, bread wheat |
| **Botanical name** | **Wheat:** *Triticum aestivum* Linn, emend. Fiori & Paol |
| **Active ingredients** | **Wheat:** The straw is used as bedding for cattle; it is also used for padding, as in mattresses, for packing fragile goods, for thatching, and for many other minor purposes. |
| **Geographical indications** | **Wheat:** An annual grass, commonly 60-150 cm in height, but may be as short as 30 cm when grown under very dry conditions, or considerably over 150 cm in height under conditions exceptionally favourable for vegetative growth. Stems tufted, erect or semi-erect to prostrate, generally hollow with thin walls, but in some varieties partially or completely filled with pith; nodes generally 5-7, wholly or |



Habit

partially covered by leaf sheaths; leaves long and narrow, with prominent parallel veins, and having ligule, and auricles, glabrous or hairy on one or both surfaces; inflorescence a spike of spikelets, commonly called 'ear', with a tough rachis, awned or awnless, glabrous or hairy; spikelets 2-ranked, compressed parallel to the rachis, closely or loosely imbricate, about as long as broad, 5-9-flowered, ripening 4-5 grains towards the centre, usually fewer at the base and apex: glumes loose and broad; lemmas thin, pale and rounded on back; fruit or the grain threshes free from the glumes and lemmas, highly variable, oblong with blunt ends, 5-10 mm long, usually plump and swollen, with a shallow groove on one face.

**Code** **1269**

**Title of the ITK** **Production of fat-rich milk from buffaloes by feeding cottonseed**

**Reference of the ITK*** Volume 2, page 332

**Name of the plant used in ITK** Cotton

**English name** Levant cotton

**Botanical name** *Gossypium herbaceum* Linn.

**Geographical indications** A diploid Old World species with n=13 chromosomes. It includes small shrubs 2-8 ft high, with thick and rigid stems; twigs and young leaves sparsely hairy, rarely glabrous; leaves flat, cleft up to half into 3-7 lobes: lobes ovate rotund, only slightly constricted at the base; bracteoles with 6-8 serrated teeth on the margin, broadly triangular, flaring widely from the flower or capsule, usually broader than long; flowers medium-sized, yellow with purple centre, rarely white; capsules rounded, rarely with prominent shoulders, beaked, with smooth surface and very few oil glands, *3-4* locular, opening slightly when ripe; seeds usually with two coats of hairs: lint hairs white, grey or red-brown in colour and fuzz hairs, nearly of the same colour and distributed uniformly over the seed: fuzz absent in rare cases. This species occurs in Africa, Middle East countries, Central Asia and western India. Commercially the cotton belonging to this species constitutes a fairly large percentage of medium-staple cotton grown in India.

Habit

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| **Code** | **1499** |
| **Title of the ITK** | **Increasing milk production in *desi* cow** |
| **Reference of the ITK*** | Volume 2, page 333 |
| **Names of the plants used in ITK** | Mustard, safflower and linseed |
| **Names in Indian languages** | **Safflower:** Bengali: *kusukphal, kusum;* Gujarati: *kasumbo;* Hindi: *karrah, kusum;* Kannada: *kusumba, kusume;* Marathi: *kardai, kurdi;* Punjabi: *kusumba;* Sanskrit: *kusumbha;* Tamil: *kusumba, sethurangam;* Telugu: *kusumbalu.* |
| **English name** | **Safflower:** Bastard saffron, false saffron, safflower |
| **Botanical name** | **Safflower:** *Carthamus tinctorius* Linn. |
| **Active ingredients** | **Safflower:** Flowers are used as dye for colouring food and cloth. Seeds yield an edible oil, which is also used for soap, paints, varnishes, linoleum and as an illuminant. Oilcake **is** used for healing sores and in rheumatism. |
| **Geographical indications** | **Safflower:** A slender, much-branched annual herb growing to a height of 45-60 cm (tall varieties 85-150 cm) native to Europe and Asia and cultivated throughout India. Leaves lanceolate, entire, unarmed or spinulose-serrate; flowerheads orange-red, sometimes white or yellow, globular; achenes obovoid, 4-angled, without pappus. India is the second largest producer of safflower in the world, Mexico producing the maximum. As an oilseed crop, saffloweris cultivated in the states of Maharashtra, Gujarat, Madhya Pradesh, Bihar, Andhra Pradesh, Karnataka and Tamil Nadu. It has also been tried in West Bengal in the drier tracts of Nadia, Purulia, Midnapore, Bankura and Birbhum. It has been cultivated successfully in the poor sandy soils of Kumaun hills. |

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| **Code** | **1512** |
| **Title of the ITK** | **Indigenous feed for animals** |
| **Reference of the ITK*** | Volume 2, page 333 |
| **Name of the plant used in ITK** | *Mahua*<br>Refer to ITK Code No. 1389 |

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| **Code** | **1555** |
| **Title of the ITK** | **Indigenous tonic for improving cattle health** |
| **Reference of the ITK*** | Volume 2, pages 333-334 Onion, |
| **Names of the plant used in ITK** | mustard and *mahua*<br>**Onion:** Refer to ITK Code No. 689<br>**Mustard:** Refer to ITK Code No. 481<br>**Mahua:** Refer to ITK Code No. 1389 |

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| **Code** | **2175** |
| **Title of the ITK** | **Feeding a mixture of celery seed and garlic to improve milk secretion during lactation period** |
| **Reference of the ITK*** | Volume 2, page 335 |
| **Names of the plant used in ITK** | Celery and garlic |
| **Names in Indian languages** | **Celery:** Bengali: *chandani, chanu, randhuni;* Hindi: *ajmod, ajmud, bari ajmod;* Kannada: *selerina;* Marathi: *ajmoda;* Punjabi: *salahri;* Sanskrit: *ajmoda, andhpatrika;* Tamil: *celery-keerai.*<br>**Garlic:**<br>Refer to ITK code No. 1116 |
| **English name** | **Celery:** Celery |
| **Botanical name** | **Celery:** *Apium graveolens* Linn. |
| **Active ingredients** | **Celery:** The fruits, commonly called seeds, contain apiin, apigenin, caffeic acid and chlorogenic acid. Celery seeds are employed as a substitute for fresh celery and in the manufacture of seasoning mixtures and spice aromas, for flavouring soups and salads, tomato juice, spreads and sauces, and meat dishes. As a flavouring agent they are used in the powder form. The powder is used in pickles and in the manufacture of celery salt, which is a mixture of ground celery seed and table salt. It is sprinkled on fish, egg, soup and cronquets. Celery pepper is another popular spice mix containing ground black pepper in place of salt. Celery seeds are credited with stimulant and carminative properties and are prescribed as nervine sedative and tonic. Their decoction is a popular household remedy for |

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rheumatism and they are said to be useful to some extent in liver and spleen trouble. The seeds yield a golden-yellow essential oil**.**

**Geographical indications**

**Celery:** An erect, annual or biennial herb, native to Europe and now naturalized and occurring wild in the foot-hills of north-western Himalayas and the outlying hills of Punjab, Himachal Pradesh and Uttar Pradesh. Roots succulent, well-developed, numerous; stems branching, angular or fistular, conspicuously jointed, up to 2.4 m in height; leaves oblong to obovate, 7-18 cm long, pinnate or trifoliolate, radical leaves with large deeply lobed segments, cauline tripartite, segments once or twice trifid, coarsely toothed; leaflets ovate to sub-orbicular, 3-lobed, 2.0-4.5 cm long; flowers white or greenish white, very small, in short-peduncled or sessile compound umbels; fruit a schizocarp consisting of two mericarps, sub-orbicular to ellipsoid, greyish brown to brown with pale ridges, 1-2 mm in diameter, aromatic and slightly bitter. It is largely cultivated in Amritsar and adjoining parts of Punjab, Haryana and some areas of western Uttar Pradesh for its seeds which are exported as condiment, and to a limited extent in the hills and in the plains in kitchen gardens for its leaves and roots used as vegetable.

Habit

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| **Code** | **2177** |
| **Title of the ITK** | **Grazing of fingermillet** |
| **Reference of the ITK*** | Volume 2, page 335 |
| **Name of the plant used in ITK** | Fingermillet |
| | Refer to ITK Code No. 215 |

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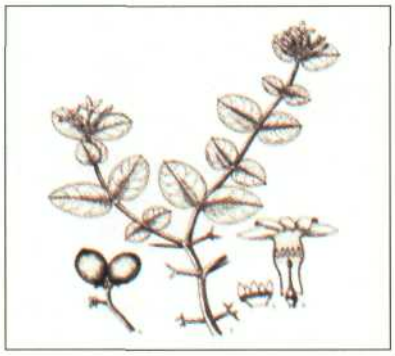
| **Code** | **: 2199** |
| **Title of the ITK** | **: Feeding cattle with *khali* and extract of *kalimi* plant leaves to check loose motion** |
| **Reference of the ITK*** | : Volume 2, page 335 |
| **Name of the plant used in ITK** | : *Kalimi* |
| **Names in Indian languages** | : Bengali: *karamcha;* Hindi: *karaunda;* Kannada: *karekayi;* Malayalam: *karakka, karavanda;* Marathi: *karvanda;* Oriya: *kerendokuli;* Sanskrit: *avighna, karamarda;* Tamil: *karaikkay;* Telugu: *vakkaaya*. |
| **English name** | : Christ's thorn, karaunda |
| **Botanical name** | : *Carissa carandas* Linn. |
| **Active ingredients** | : The wood is white with an irregular grey or orange-yellow heartwood, hard, smooth and close-grained. It is used for making combs and spoons. |
| **Geographical indications** | : An indigenous evergreen shrub or a small crooked tree up to 3 m in height with dichotomous branches armed with |



Schematic representation

Habit, fruits and flowers

simple or forked 2-4 cm long axillary thorns, found throughout India, and also frequently cultivated for its edible fruits. Bark yellowish brown, peeling in square flakes; leaves leathery, light green, elliptic or elliptic-oblong, rounded at both ends; flowers white or pink, faintly scented, in terminal corymbose cymes; berries ellipsoid, purple or pink and white, normally 8-seeded.

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| **Code** | **44** |
| **Title of the ITK** | **Use of *kalajeera (Nigella sativa)* as a medicine for animals** |
| **Reference of the ITK*** | Volume 2, page 336 |
| **Name of the plant used in ITK** | *Kala jeera* |
| **Names in Indian languages** | Bengali: *kalijira, mungrela;* Gujarati: *kalonji-jiram;* Hindi: *kalonji, kalajira, mugrela;* Kannada: *karejirage;* Malayalam: *karunchiragam;* Tamil: *karunjiragam;* Telugu: *nellajeelakaira.* |
| **English name** | Small fennel, black cumin |
| **Botanical name** | *Nigella sativa* Linn. |
| **Active ingredients** | The seeds are considered carminative, stimulant, diuretic, emmanagogue and galactagogue, and are used in the treatment of mild cases of fever. They are externally applied for eruption of skin. |
| **Geographical indications** | A small herb, 45 cm high, native of Levant, said to be cultivated or occasionally found as weed of cultivation in Punjab, Himachal Pradesh, Bihar and Assam. Leaves 2-3 pinnatisect, 2.5-5.0 cm long, cut into linear-lanceolate segments; flowers pale blue, 2.0-2.5 cm across, without an involucre, on solitary long peduncles; seeds trigonous, black, rugulose-tubercular. |

Habit

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| **Code** | **243** |
| **Title of the ITK** | **Control of bacterial infection in animals** |
| **Reference of the ITK*** | Volume 2, page 336 |
| **Names of the plants used in ITK** | Pepper and garlic |
| **Names in Indian languages** | **Pepper:** Bengali and Hindi: *kalimirch, kalamorich, golmorich;* Gujarati: *kalamari, kalomirich;* Kannada: *kare menasu;* Malayalam: *kurumulaku, nallamulaku;* Marathi: *kalimirch, mire;* Sanskrit: *maricha, ushana, hapusha;* Tamil: *milagau;* Telugu: *miriyala tige.* |
| **English name** | **Pepper:** Black pepper |
| **Botanical name** | **Pepper:** *Piper nigrum* Linn. |

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**Active ingredients** : **Pepper:** Pepper contains oleoresin, which is responsible for pungency and aroma. It is used as aromatic stimulant in cholera, weakness, vertigo and coma. Pepper retards the development of rancidity in oils and fats, frozen ground pork and beef.

**Geographical indications** : **Pepper:** A branching, climbing perennial shrub, mostly found cultivated in the hot and moist parts of India, Sri Lanka and other tropical countries. Branches stout, trailing and rooting at the nodes; leaves entire, 12.5-17.5 by 5.0-12.5 cm, very variable in breadth, sometimes glaucous beneath, base acute rounded or cordate, equal or unequal; flowers minute in spikes, usually dioecious, but often the female bears 2 anthers, and the male, a pistillode; fruiting spikes very variable in length and robustness, rachis glabrous; fruits ovoid or glabrous, bright red when ripe; seeds usually globose, testa thin, albumin hard.

Habit

**Code** **258**

**Title of the ITK** **Control of warts in cattle**

**Reference of the ITK*** Volume 2, page 336

**Names of the plant used in ITK** Onion and ginger

**Names in Indian languages** **Ginger:** Bengali: *ada*\ Hindi: *adrak, ada;* Kannada: *hasisunti;* Malayalam: *andrakam, inchi;* Marathi: *ale;* Sanskrit: *ardraka;* Tamil: *allam, inji;* Telugu: *allamu, sonthi* (dry).

**English name** **Ginger:** Ginger

**Botanical name** **Ginger:** *Zingiber officinale* Rose.

**Active ingredients** **Ginger:** Ginger contains small quantities of glucose and sucrose. The principle carbohydrate of rhizome is starch. The free amino acids present in ginger include glutamic acid, aspartic acid etc. The characteristic pleasant and aromatic odour of ginger is due to an essential oil. The oil contains sesquiterpenes hydrocarbons (50% or more), sesquiterpeas alcohol, monoterpenoids and associated compounds. The pungency of ginger is due to oleoresin known as gingerin. The pungent principle of ginger oil is oxymethyl phenol. Gingerin obtained from the oleoresin by hexane extraction is highly pungent. **It** is one of the

best known species. Green ginger is the raw rhizome and substantial quantities of it are locally used as a constituent in culinary preparation; some quantities are also utilized in the preparation of pickle and canned ginger and soft drinks like ginger cocktail.

**Geographical indications**

Habit

**Ginger:** A herbaceous, rhizomatous perennial, reaching up to 90 cm in height under cultivation. Rhizomes are aromatic, thick-robed, pale yellowish, differing in shape and size in the different cultivated types. The herb develops several lateral shoots in clumps which begin to dry when the plant matures. Leaves narrow, distichous, sub-sessile, linear-lanceolate, 17.0 cm x 1.8 cm dark green, evenly narrowed to form a slender tip, flowers in spikes, greenish yellow with a small dark purple or purplish black tip. The important ginger-growing states are Orissa, Haryana, West Bengal, Madhya Pradesh and Himachal Pradesh. The important ginger-growing districts are in these states are Kozhikode, Kottayam, Malappuram, Palghat and Ernakulam in Kerala. Phulbani and Balasore in Orissa, Shimoga and South Kanara in Karnatka; Darjeeling and Birbhum in West Bengal; and Tikamgarh and Chhindwara in Madhya Pradesh.

**Code**

**824**

**Title of the ITK**

**Use of *Micromeria biflora, Helmis lanceolatus* and *Trichodesma indicum* herbs for treatment of post-partum in cattle and buffalo**

**Reference of the ITK***

Volume 2, page 337

**Names of the plants used in ITK**

*Micromeria, Helmis* and *Trichodesma*

**Names in Indian languages**

***Trichodesma:*** Bengali: *chotokulpa;* Gujarati: *undhaphuli;* Hindi: *chhota-kulpha, ratmandi, sal-knota;* Kannada: *kattetumbesoppu, adhomukhi;* Dogri: *nilakrai, ratisurkha;* Marathi: *chhotaphulva, lahanakalpa;* Oriya: *hetamundia;* Punjabi: *kallributi ratmandu, nilakrai, andusi;* Tamil: *kazhuthaithumbai;* Telugu: *guvvagutti.*

**English name**

***Micromeria:*** Indian Wild thyme

**Botanical name**

***Micromeria:*** *Micromeria biflora* Benth.

***Trichodesma:*** *Trichodesma indicum* **R. Br.**

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| **Active ingredients** | ***Micromeria:*** It is an aromatic herb reported to be used by Mundas as an application for worm-infested wounds in cattle.<br><br>***Trichodesma****:* The herb is credited with emollient and diuretic properties and is used for making emollient poultices. It is prescribed by the Ayurvedic physicians for the expulsion of dead foetus. The root is pounded and made into paste for application on the swellings, particularly of the joints. The root is also used for the treatment of dysentery and fever. The flowers are reported to be employed as a pectoral. |
| **Geographical indications** | ***Micromeria:*** A dwarf herb, usually 5-10 cm high, rarely up to 30 cm high, found in tropical and temperate Himalayas from Kashmir to Bhutan and in Punjab (Gurdaspur), Bihar, north Circars, western ghats and hills of south India, ascending up to 2,100 m. Leaves sessile or sub-sessile, ovate or oblong, sub-acute; flowers pink or blue in axillary cymes.<br><br>*Trichodesma:* A hispid, erect or diffuse annual herb, found as a weed throughout the greater part of India, ascending to an altitude of 1,500 m in the Himalayas. Leaves very variable in shape, usually sessile with a semi-amplexicaul or cordate base, 2.5 -10.0 cm x 0.6-5.0 cm upper surface clothed with stiff hair arising from tubercles. Flowers pale blue, changing to pink or white, single, on drooping axillary stalks; fruits pyramidal, 4-ribbed, enclosed in enlarge calyx; nutlets 4, 1-seeded. |

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| **Code** | **827** |
| **Title of the ITK** | **Use of hot soup of *jeera* (cumin) and garlic** |
| **Reference of the ITK*** | Volume 2, page 337 |
| **Names of the plant used in ITK** | *Jeera* and garlic |
| **Names in Indian languages** | ***Jeera:*** Bengali: *jira;* Hindi: *jira, zeera;* Kannada: *jeerige; Malay alam:jorekam;* Marathi^'/reg/re; Sanskrit: *jiraka, jira;* Tamil: *siragam;* Telugu: *jilakara, jiraka.* |
| **English name** | ***Jeera:*** Cumin |
| **Botanical name** | ***Jeera:*** *Cuminum cyminum* Linn. |
| **Active ingredients** | ***Jeera:*** Cumin seeds have an aromatic odour and a spicy, somewhat bitter taste. Cumin seed is considered to be |

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stimulator and carminative. They are stomachic and useful in diarrhoea and dyspepsia. The oil (cumaldehyde) is used in perfumery and for flavouring liquors and cordials. It is also used as a carminative. Seed is a good source of vitamin A (870 IU/100 g). The chief constituent of volatile oil is formaldehyde. The residue left after the volatile oil extraction contains 17.2% protein and 30% fat. It can be used as cattle feed.

**Geographical indications**

*Jeera:* A small, slender annual herb about 1 ft high, with a much-branched angular or striated stem, bearing 2 or 3 partite linear leaves, bluish green in colour and having sheathing bases. The flowers are white or rose coloured, borne in compound leaves. The fruit greyish, about $^{l}A$ in. long, tapering towards both base and apex, and compressed laterally with ridges covered by papillose hairs. The hairs may be absent in some forms. The plant is grown extensively in south-eastern Europe and north Africa bordering the Mediterranean Sea, and in India and China. It is cultivated in almost all states in India except Bengal and Assam.

Habit

Code 1242

**Title of the ITK** **Treatment of FMD with *besan chapatti***

**Reference of the ITK*** Volume 2, page 337

**Name of the plant used in ITK** *Besan*

**Names in Indian languages** Assamese: *butmah;* Bengali: *but, chola;* Hindi: *but, chana, chhole;* Kannada: *kadale;* Malayalam: *kadala, kadalakka;* Marathi: *harbara;* Oriya: *booto;* Sanskrit: *chanaka, harimantha;* Tamil: *kadalai;* Telugu: *sanagalu.*

**English name** Bengal gram, caravance, chickpea, garbanzo, gram

**Botanical name** *Cicer arietinum* Linn.

**Active ingredients** The plant is refrigerant. The leaves are astringent and useful in bronchitis. Boiled leaves are applied to sprains and dislocated bones. The acid exudate from the plant is astringent and used in indigestion, diarrhoea and dysentery. The seeds are stimulant, tonic, aphrodisiac, anthelmintic and useful in bronchitis and biliousness. They are also useful in leprosy and other skin diseases. Powdered seeds along with seeds of *Psoralia corylifolia* Linn, and neem leaves

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| | are reported to cure leucoderma. The aqueous extract of the seed coat has diuretic activity. |
| **Geographical indications** | An erect or spreading much-branched annual herb, 30-50 cm in height covered all over with glandular hair, which are rich in oxalic acid and malic acid, which impart a sour taste to leaves and fruits. Leaves pinnately compound, leaflets 9-17, opposite or alternate, stipulate, strongly veined; flowers papilionaceous, white to various shades of pink or blue; pods one or two seeded; seeds attached to ventral suture, beaked, round or semiround, wrinkled or semi-wrinkled, exalbuminous, seed coat yellow, faun, green orange-brown, pink or black, smooth, puckered granular or tuberculate. |

Habit

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| **Code** | 1502 |
| **Title of the ITK** | **Preventive medicine for cattle** |
| **Reference of the ITK*** | Volume 2, page 338 |
| **Names of the plants used in ITK** | Onion, *bhelwa* and *sal* |
| **Names in Indian languages** | **Sal:** Assamese: *sal, dieng-blei, hal-orang, bolsal;* Bengali and Hindi: *sal, sakhu, shal;* Gujarati and Marathi: *ral, rala* (resin); Kannada: *kabba* (resin); Malayalam: *maramaram;* Oriya: *sal, sagua, salwa, sekwa;* Punjabi: ***sal,*** *seralb* (resin); Tamil: *kingiliyam* (resin); Telugu: *gugal, guggilamu* (resin). |
| **English name** | **Sal:** Sal |
| **Botanical name** | **Sal:** *Shorea robusta* Gaertn. |
| **Active ingredients** | **Sal:** It is most universally used as a timber in north, east and central India. It is the one of the primary hosts of tarar silkworm. A paste made from fruit is used in diarrheoa. It is a good source of resin and oil. Sal oilcakes contains 10 to 12% protein and about 50% starch and can be used as cattle and poultry feed. |
| **Geographical indications** | **Sal:** A large sub-deciduous tree, seldom quite leafless, found extensively in pacts of north east and central India. Bark reddish brown or grey, smooth or longitudinally fissured; leaves 10-30 cm x 5-18 cm, ovate-oblong, coraceous, shining when mature, flowes in lax, axillary or terminal |

panicles, yellowish, small; fruit 10-15 mm long, 10 mm in diameter, ovoid, reddish to pale yellowish green in colour, indehiscent, one-seeded with five, somewhat unequal, 5.0—7.0 cm long, wing-like persistent sepals, seed ovoid, with fleshy, unequal cotyledons.

Habit

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| **Code** | **540** |
| **Title of the ITK** | **Plastering of broken bones and joints by *harjodan (Acanthus ilicifolius)*** |
| **Reference of the ITK*** | Volume 2, page 339 |
| **Name of the plant used in ITK** | *Harjodan* |
| **Names in Indian languages** | Bengali: *hargoza, harkat, harkuchkanta;* Hindi: *hargoza;* Kannada: *holechudi, tudechudi;* Malayalam: *chakkaramulli, mendli, moranna, payinachhulli;* Marathi: *marandi, mendli, moranna;* Oriya: *harkanchi, kilichiri;* Sanskrit: *harikusa;* Tamil: ***attumulli,*** *kaludaimulli, kolimulli, kozhimullw,* Telugu: *alasyakampa, alchi, alisi, etichilla.* |
| **English name** | Sea holly |
| **Botanical name** | *Acanthus ilicifolius* Linn. |
| **Active ingredients** | A decoction of the plant with sugar candy and cumin is used in dyspepsia with acid eructations. It is also considered to be a diuretic and is used as a cure for dropsy and bilious swellings. Leaves are also used as expectorant. If the plants are cut before flowering and bruised to remove the spines, they can be used as fodder. Powdered leaves may be used as food for fishes and prawns in aquaculture. |
| **Geographical indications** | A gregarious, sparingly branched, evergreen shrub, 0.6-1.5 m in height, common in the tidal swamps of creeks and rivers along the east and west coasts; also distributed in Meghalaya and the Andamans. Leaves oblong or elliptic, pinnately toothed, acute or truncate, glabrous, spinous; |

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flowers blue, sessile in opposite pairs, in terminal crowded or interrupted spikes; capsules oblong, 2.5 cm long, brown; seeds broad-ovate, compressed, 0.6 cm in diameter, testa lax.

**Code**
**541**

**Title of the ITK**
**Plastering of bones by paste of blackgram and branches of *syaru* plant**

**Reference of the ITK***
Volume 2, page 340

**Names of the plants used in ITK**
Blackgram and *syaru*

**Name in Indian languages**
***Blackgram:*** Bengali: *mash-kalai;* Gujarati: *adad, arad;* Hindi: *urd;* Kannada: *uddu;* Malayalam: *uzhunnu;* Marathi: *udid, maga;* Tamil: *ulund;* Telugu: *minumulu, karuminimulu, nallaminumulu.*

**English name**
**Blackgram:** Blackgram

**Botanical name**
**Blackgram:** *Phaseolus aureus* (Linn.) Hepper

**Active ingredients**
**Blackgram:** It is mostly consumed in the form of *dal.* It has been occasionally used as a green-manure crop and grown in rice fields preparatory to arising paddy crop.

**Geographical indications**
***Blackgram:*** An erect, hairy plant, varying in height from 30 to 90 cm, sometimes long and twining, cultivated as a pulse crop nearly throughout India. Leaves trifoliolate; leaflets entire, ovate to rhombic-ovate in outline, acuminate, 5-10 cm long; flowers small, yellow on short but later elongating peduncles; pods cylindrical, erect or spreading, somewhat hairy, with long hairs and a very short, hooked beak, 3.75-4.35 cm long; seeds usually 4, but may be reduced to 1 in a pod, oblong with square ends, 3 mm long, generally black with a white hilum protruding from the seed, but concave in the middle, appearing therefore with two protruding ridges.

Habit

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| **Title of the ITK** | ***Chamarmeva (Ulmus wallichiana)* plaster for broken bones** |
| **Reference of the ITK*** | Volume 2, page 340 |
| **Name of the plant used in ITK** | *Chamarmeva* |
| **Names in Indian languages** | Hindi: *mored, pabuna, chambar may a* |
| **Botanical name** | *Ulmus wallichiana* Planch. |
| **Active ingredients** | The bark contains tannins. |
| **Geographical indications** | A tree up to 33 m tall and 2.7 m in girth, found growing in the Himalayas from Kashmir to Uttar Pradesh and Nepal, at altitudes of 900-3,000 m. It is often planted near villages for its leaves, which are fed to cattle. Bark very rough, exfoliating in diamond-shaped flakes; leaves large, obliquely elliptic, usually narrowed at the unequal base; flowers red-brown, in short, dense racemes; samaras 12-16 mm long, sometimes obcordate, wings rounded, reticulate. |

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| **Code** | **861** |
| **Title of the ITK** | **Treatment for bone fracture in cattle** |
| **Reference of the ITK*** | Volume 2, page 341 |
| **Names of the plant used in ITK** | Grape and *chulli* |
| **Name in Indian languages** | **Grape:** Bengali: *angurphal, drakhyaluta;* Gujarati: *darakh, draksha;* Hindi: *angur, dakh;* Kannada: *angura, draksha;* Malayalam: *mundiri, gostani;* Marathi: *draksha;* Oriya: *drakya, onguro, gostoni;* Tamil: *kodimundiri, gostanidraksha;* Telugu: *draksha, gostanidraksha.* |
| **English name** | **Grape:** Common grapevine, wine-grape, European grape |
| **Botanical name** | **Grape:** *Vitis vinifera* Linn. |
| **Active ingredients** | **Grape:** The leaves contain thiamine, niacin, biotin and tocopherol. Fresh grapes contain varying but small quantities of vitamin C. Grapes are a good source of bioflavonoids (Vitamin P), which are known to be useful in conditions such as purpura, capillary bleeding in diabetes, oedema and inflammation from injury, radiation damage, and atherosclerosis. Catechins and anthocyanogenic tannins present in grapes possess bioflavonoid activity. |

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**Geographical indications**

Habit

**Grape:** A large deciduous climber, climbing by means of intermittent, leaf-opposed, long, often bifid tendrils, cultivated in many parts of India. Stems up to 35 m long, but in cultivation usually much reduced by pruning, leaves orbicular-cordate, 5-15 cm, more or less deeply palmately-3,5 or 7 lobed, irregularly toothed, glabrescent above, often grey-tomentose beneath, thin, membranous; flowers green in large, leaf-opposed, rather dense, panicles, the peduncle sometimes bears an unbranched tendril below the flowers; berries very variable in size, ovoid to globose, greenish, purplish or bluish black, edible, generally sweet, seeds *2-A*, pear shaped, with a discoidal tubercle at the back. The leading grape-growing countries in different regions are Italy, France, USSR and Spain in Europe, Turkey, Iran, Afghanistan, Japan and Syria in Asia and Algeria, south Africa, and Morocoo in Africa. In India, it is cultivated in Karnataka, Maharashtra and Andhra Pradesh.

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| **Code** | **1202** |
| **Title of the ITK** | **Herbal preparation for fracture healing** |
| **Reference of the ITK*** | Volume 2, page 341. |
| **Names of the plants used in ITK** | Castor and *barna* |
| **Names in Indian languages** | **Barna:** Bengali: *barun;* Hindi: *barna, bilasi;* Marathi: *vayavarna, haravarna;* Sanskrit: *varuna, asmarighna;* Tamil: *maralingam.* |
| **Botanical name** | ***Barna:*** *Crataeva nurvala* Buch Ham. |
| **Active ingredients** | ***Barna:*** The bark, which contains tannin and also saponin, is bitter and anti periodic, tonic and demulcent, and has a stimulating action on the liver. Its extract is given as a laxative and promotes appetite. The root bark is rubefacient and counter-irritant. The flowers are astringent and cholagogue. |

Branch

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| **Geographical indications** | *Kama:* A moderate-sized deciduous tree, common throughout India, Myanmar and Sri Lanka, either wild or cultivated. |
| **Code** | **1961** |
| **Title of the ITK** | **Use of green leaves *otgurbel* to treat bone dislocation** |
| **Reference of the ITK*** | Volume 2, page 342 |
| **Names of the plants used in ITK** | *Gurbel*, banana, *mandar* and cactus |
| **Names in Indian languages** | ***Mandar:*** Bengali: *palita mandar;* Gujarati: *bangaro, panaraweo;* Hindi: *dadap, mandara;* Kannada: *varjipe, harivana;* Malayalam: *kalayanamurikku, mandaram;* Marathi: *mandar, pangara;* Sanskrit: *mandar, parijata;* Tamil: *kaliyanamurukku;* Telugu: *badisa, badita, baridamu, modugu.* |
| **English name** | ***Mandar:*** Indian coral tree |
| **Botanical name** | ***Mandar:*** *Erythrina variegata* Linn. var. *orientalis* (Linn.) Merrill |
| **Active ingredients** | ***Mandar:*** The leaves are laxative, diuretic, anthelmintic, galactagogue and emmenagogue. They are applied externally for dispersing venereal buboes and for relieving pain in joints. The fresh juice of the leaves is used for relief of earache and as anodyne in toothache; the juice is also used for killing worms in sores. |
| **Geographical indications** | ***Mandar:*** A medium-sized, quick-growing tree, reaching a height up to 60 ft; bark smooth, yellowish or greenish grey, shining, peeling off in thin papery flakes; branchlets armed with small dark-coloured conical prickles up to the third or fourth year; leaves trifoliate; leaflets 4—6 in. long and nearly as broad; flowers large, coral red in dense racemes; pods torulose, 6-12 in. long, containing up to 12 seeds; seeds oblong, smooth, red to dark purple or brown. The tree is found wild in deciduous forest throughout India and in Andaman and Nicobar Islands. |

Flowers

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| **Code** | **826** |
| **Title of the ITK** | **Feeding of *safeda* and bamboo leaves for treatment of diarrhoea and dysentery** |
| **Reference of the ITK*** | Volume 2, page 343 |
| **Names of the plants used in ITK** | *Safeda* and bamboo |
| **Name in Indian languages** | ***Safeda:*** Dogri: *fras;* Hindi: *safeda, jangli-frast, chitta bagnu.*<br>***Bamboo:*** Refer to ITK Code No. 359 |
| **English name** | ***Safeda:*** White poplar |
| **Botanical name** | ***Safeda:*** *Populus alba* Linn. |
| **Active ingredients** | ***Safeda:*** The bark possesses tonic, diuretic and antipyretic properties, and is reported to have been used as a substitute for quinine in Italy. It is also used in skin diseases. Salicin is a bitter tonic, and is used like quinine in intermittent fever; it is also administred in rheumatism, coryza and neuralgia. Both salicin and populin cause elimination of uric acid. |
| **Geographical indications** | ***Safeda:*** *A* medium-sized to large tree, native of Central Europe to Central Asia, found in the north-west Himalayas, at altitudes of 1,200-3,000 m, also commonly grown in avenues. Bark greyish or whitish, rough and furrowed on old trees; leaves variable in size and shape, 5-10 cm long, sinuate or lobed, white tomentose beneath; flowers small, in hairy catkins; capsules 6 mm long; seeds minute, hairy. |

Habit

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| **Code** | **852** |
| **Title of the ITK** | **Use of isabgol for control of diarrhoea and hookworm** |
| **Reference of the ITK*** | Volume 2, page 343 |
| **Name of the plant used in ITK** | Isabgol |
| **Name in Indian languages** | **Punjabi:** *isafghol.* |

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| **English name** | Ispaghul |
| **Botanical name** | *Plantago amplexicaulis* Cav. |
| **Active ingredients** | Seeds are considered astringent, and used in intermittent fever, pulmonary affections, and as an application to the eyes in ophthalmia. The endosperm contains protein and a fatty oil. |
| **Geographical indications** | A stemless or sub-caulescent herb widely distributed in the countries of the Mediterranean region, recorded occasionally from Rajasthan and Delhi. Leaves radical, narrowly lanceolate, entire or very sparingly toothed, flowers white, in ovoid spikes; capsules ovoid, sub-obtuse, pale brown, smooth, 2-seeded; seeds oblong, boat-shaped, brown or nearly black. |

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| **Code** | **1173** |
| **Title of the ITK** | **Feeding of *sheesham* leaves to control diarrhoea in animals** |
| **Reference of the ITK*** | Volume 2, page 344 |
| **Name of the plant used in ITK** | *Sheesham* |
| **Names in Indian languages** | Bengali: *shisu;* Gujarati: *sisam, tanach;* Hindi: *shisham, sissu, sissai;* Kannada: *agaru, biridi;* Malayalam: *iruvil;* Sanskrit: *shinahapa, aguru;* Tamil: *sisu itti, gette;* Telugu: *errasissu, sinsupa.* |
| **English name** | Sissoo |
| **Botanical name** | *Dalbergia sissoo* Roxb. |
| **Active ingredients** | It is mainly used for timber purposes. Leaves are used as a fodder. The leaves are bitter and stimulant. A decoction of leaves is said to be used for gonorrhoea. The leaf mucilage mixed with sweet oil is applied in excoriation. The roots are astringent and wood is useful in cutaneous affection. |
| **Geographical indications** | A deciduous tree, often with crooked trunk and light crown. Under favourable conditions the |

Branch

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| | tree attains a height of about 100 ft, a girth up to 8 ft and a clear bole up to 35 ft. It occurs throughout the sub-Himalayan tract, ascending up to 5,000 ft. It grows gregariously in alluvial forests characteristic of the riverbeds of these regions. It is extensively cultivated in Punjab, Uttar Pradesh, West Bengal and Assam. |
| **Code** | **1196** |
| **Title of the ITK** | **Control of diarrhoea by use of *bael* or baked *bael* (stone fruit)** |
| **Reference of the ITK*** | Volume 2, page 344 |
| **Name of the plant used in ITK** | Bael |
| **Name in Indian languages** | Assamese, Bengali, Hindi and Marathi: *bael, bel;* Gujarati: *bili;* Kannada: *bela, bilva;* Malayalam: *koovalam, vilvam;* Oriya: *belo;* Sanskrit: *bilva, sriphal:* Tamil: *bilva, vilvam;* Telugu: bilavamu, maredu; Urdu: bel. |
| **English name** | Bael tree, Bengal quince |
| **Botanical name** | *Aegle marmelos* (Linn.) Correa ex Roxb. |
| **Active ingredients** | The unripe or half-ripe fruit is regarded as astringent, digestive and stomachic. The fruit is used in chronic diarrhoea and dysentery, and is said to act as a tonic for heart and brain. In the after-treatment of bacillary dysentery, the fruit is a useful adjuvant as it helps remove constipation which hinders the healing of ulcerated surfaces of intestines. Clinical trials of unripe fruits showed anti-viral activity against Ranikhat disease virus, hypoglycaemic activity and significant results against intestinal parasites, viz. *Ascaris lumbricoides* Linn, and *Entamoeba histolytica*. Besides the fruits, the roots, bark, leaf and seed of bael are valued in the indigenous system of medicine. The root is an ingredient of the dasamula (ten roots), a medicine commonly used by the Ayurvedic practitioners. The roots as well as the bark are used in the form of a decoction as a remedy in melancholia, intermittent fevers and palpitation of the heart. The young leaves and shoots are used as fodder for cattle, sheep and goats. |
| **Geographical indications** | A moderate-sized, slender, aromatic tree, 6.0-7.5 m in height and 90-120 cm in girth, with a somewhat fluted bole |

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Ripen Fruit

Branch

of 3.0-4.5 m, growing wild throughout the deciduous forests of India, ascending to an altitude of 1,200 m in the western Himalayas and also occurring in Andaman Islands. It is extensively planted near Hindu temples for its leaves and wood, which are used for worship, and for its edible fruits which are valued in indigenous medicine. Branches armed with straight, sharp, axillary, 2.5 cm long spines; bark soft, corky, light grey, exfoliating in irregular flakes; leaves attenuate, trifoliolate, occasionally digitately five-foliolate, leaflets ovate or ovate-lanceolate, crenate, acuminate, lateral sessile, terminal long-petioled; flowers large, greenish white, sweet-scented, in short axillary panicles; fruits globose, grey or yellowish, rind woody; seeds numerous, oblong, compressed, embedded in sacs covered with thick orange-coloured sweet pulp.

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| **Code** | **1235** |
| **Title of the ITK** | **Use of camphor in treatment of diarrhoea in cattle and buffaloes** |
| **Reference of the ITK*** | Volume 2, page 344 |
| **Name of the plant used in ITK** | Camphor |
| **Names in Indian languages** | *Kapur, karpur, karpuram.* |
| **English name** | Camphor tree |
| **Botanical name** | *Cinnamomum camphora* (Linn.) Presl |
| **Active ingredients** | It is applied externally to the skin. Camphor act as a rubefacient, counter-irritant and local anodyne. It is a mild antiseptic. Camphor liniment is used for relief of pain in muscular rheumatism, sprains, fibrositis and neuralgia. Camphor taken externally acts as a carminative, reflex expectorant and reflex stimulant of heart and circulation as well as respiration. The compound tincture is used to liquefy bronchial secretion and relieve distressing cough in bronchitis and broncho-pneumonia. Camphor has also been used as nervous depressant in hysteria, epilepsy and convulsions and as an aphrodisiac. Camphor is considered to have emmenagogue and abortifacient properties. |

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Camphor oil is used externally in rheumatism; it is also used as cardiac stimulant and as a constituent of many medicinal preparations.

**Geographical indications**

A large, handsome, evergreen tree, native to China and Japan, introduced and cultivated in India as an ornamental and as a source of camphor. Leaves glabrous, chartaceous to sub-coriaceous, ovate-elliptic to elliptic to sub-ovate-elliptic, 3-10 cm x 1-5 cm; panicles axillary, slender, glabrous, many flowered; fruits one-seeded berries, globose, slightly fleshy, 5-10 mm in diameter, seated on a shallow, thin cup, turning black when ripe.

**Code**

**1585**

**Title of the ITK**

**Treatment of diarrhoea in goat by juice of *urhul* flower** *(Hibiscus rosa-sinensis)*

**Reference of the ITK***

Volume 2, page 348

**Name of the plant used in ITK**

*Urhul*

**Names in Indian languages**

Assamese and Bengali: *joba; Gv^dsdXi. jasuva;* Hindi: *jasut, jasum;* Kannada: *dasavala;* Malayalam: *chembarathi;* Marathi: *dasindacha phula, jasavanda;* Oriya: *mondaro;* Sanskrit: *japa, Java, rudra pushpam;* Tamil: *semparuthi;* Telugu: *Java pushpam.*

**English names**

Shoe flower, Chinese hibiscus

**Botanical name**

*Hibiscus rosa-sinensis* Linn.

**Active ingredients**

Crushed flowers yield a dark purplish dye that was formerly employed for blackening shoes. The flowers are considered demulcent, emollient, refrigerant, aphrodisiac and emmanegogue. A decoction of flower is given in bronchial catarrh. The leaves are emollient, apparient, anodyne and laxative. Decoction of leaves is used as a lotion in fever. Fresh root juice is given for gonorrhoea and powdered root for menorrhagia. Root is used in Mysore for some diseases of cattle.

Habit

**Geographical indications**

An evergreen woody, glabrous, showy shrub, 5-8 ft high; leaves bright green, ovate, entire below, coarsely toothed above; flowers solitary, axillary, bell-shaped, large, 4-6 in. in diameter, with pistil and stamens projecting from the centre; capsules roundish, many-seeded. It is a native of China. It is grown as an ornamental plant in gardens throughout India and often planted as a hedge or fence plant.

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| **Code** | **1900** |
| **Title of the ITK** | **Control of diarrhoea in animals by mixture of leaves** |
| **Reference of the ITK*** | Volume 2, page 349 |
| **Names of the plants used in ITK** | *Pipal, babool,* guava and fingermillet |
| **Names in Indian languages** | ***Pipal:*** Bengali: *ashathwa;* **Gujarati: *jari,*** *pipro,* ***pipul;*** Hindi: *pipal, pipli;* Kannada: *arali, ashwattha;* Malayalam: *arachu, arrayal, ashvatham;* Marathi: *ashvatha, pimpala;* Tamil: *arasu, aswattham;* Telugu: *ashvatthamu, bodhi.* |
| **English name** | ***Pipal:*** Peepal |
| **Botanical name** | ***Pipal:*** *Ficus religiosa* Linn. |
| **Active ingredients:** | ***Pipal:*** The fruits and tender leaf buds are occasionally eaten in times of scarcity. The leaves and twigs are lopped for cattle and elephant fodder. The tree is one of the recorded hosts of the Indian lac insect in Madhya Pradesh, Bengal and Assam. Leaves and tender shoots are used as purgative and in skin diseases. The fruit is laxative and the seeds are considered to be cooling, alterative and laxative. |
| **Geographical indications** | ***Pipal:*** A large deciduous tree, epiphytic when young, with spreading branches and rotund or broadly ovate, caudate, more or less pendulous leaves; fruits sessile in axillary pairs, depressed-globose, *Vi* in. in diameter, black or purple when ripe. The tree is found wild or cultivated nearly throughout India and is held sacred by Hindus and Buddhists. It is planted as an avenue or road-side tree. |

Habit

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| **Code** | **1967** |
| **Title of the ITK** | **Curing of diarrhoea in goats by using *takala* flower** |
| **Reference of the ITK*** | Volume 2, page 350 |
| **Name of the plant used in ITK** | *Takala* |
| **Names in Indian languages** | Bengali: *chakunda, panevar;* Gujarati: *kawario, konariya;* Hindi: *chakavat, chakunda, panevar,* Kannada: *gandutogache, taragasi;* Malayalam: *chakramandarakam, takara;* Marathi: *takala, tankli, tarota;* Oriya: *chakunda;* Sanskrit: *chakramarda, dadamari, prishnaparni;* Tamil: *senavu, tagarai, vindu;* Telugu: *chinnakasinda, tellakasinda.* |

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**English name** Foetid cassia, sicklesenna, Wild senna

**Botanical name** *Cassia tora* Linn.

**Active ingredients** *Chakramardha thailamu,* a compound ayurvedic oil of this herb, is beneficial in eczema, ringworm and other skin diseases. The extracts also show interferon-like anti-viral activity against Ranikhet disease virus in culture. The pounded leaves are applied as poultice on cuts and wounds like tincture-iodine, and for ulcers to hasten suppuration. The leaves are also used for the treatment of cough. Pounded with egg-albumin, they are applied as a plaster for fractured bones. A decoction of the leaves is given to children during teething and used for eye-troubles in Zambia; as a lotion it is applied in skin diseases. A paste made of equal parts of leaves and seeds is given for jaundice. The leaf extracts showed *in vitro* anti-fungal activity. The unripe fruits are cooked and eaten. The seeds can be introduced gradually as a protein-rich food for livestock.

**Geographical indications** A foetid, annual herb or undershrub, up to 1-2 m in height, found as a weed throughout India, ascending up to an altitude of 1,550 m in the Himalayas. Leaves 6.0-12.5 cm long, leaflets 3 pairs, 3-5 cm long, membranous, ovate-oblong, with glands in the last two pairs, showing sleeping movements; flowers bright yellow, usually in pairs, on very short axillary peduncles; pods stout, 15-25 cm long; seeds green, 25-30.

Habit

**Code** : **415**

**Title of the ITK** : **Treatment for dysentery in goats**

**Reference of the ITK*** : Volume 2, page 351

**Names of the plants used in ITK** : *Banjam* and *bonkurchi*

**Name in Indian languages** : ***Banjam.*** *Banjam*

**English name** : ***Banjam:*** Shoebutton ardisia

**Botanical name** : ***Banjam:*** *Ardisia solanacea* Roxb.

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| **Geographical indications** | ***Banjam:*** It is a native of India, Shrubs or trees 6 m tall, glabrous, branchlets prominently angular, 5-7 mm in diameter, petiole canaliculate, 1-2 cm; leaf blade elliptic or oblanceolate, 12-20 x 4—7 cm, papery, conspicuously black, punctate and punctate-lineate abaxially, not prominently punctate adaxially, base cuneate or narrowly decurrent on petiole, margin subrevolute, entire, apex acute; lateral veins 20 on each side of midrib, raised on both surfaces, marginal vein absent. Inflorescences at bases of new shoots, paniculate with racemose or rarely corymbose branches, 3-8 cm. Flowers leathery, pink, 1 cm. Sepals broadly ovate to reniform, 3 mm, densely black punctate, base subauriculate, margin subentire or crenulate, ciliate, scarious, apex rounded. Petals nearly free; lobes broadly ovate, 9 mm, punctate, margin entire, hyaline, apex obtuse or acute. Stamens subequalling petals; filaments 1/4 anther length; anthers linear-lanceolate, densely punctate dorsally, longitudinally dehiscent, apex acute. Pistil subequalling petals; ovary globose, densely punctate; ovules numerous, multiseriate. Fruit purplish red or blackish, oblate, 7-9 mm in diameter, densely black punctate. |
| **Code** | **813** |
| **Title of the ITK** | **Treatment of dysentery problem due to overgrazing** |
| **Reference of the ITK*** | Volume 2, page 351 |
| **Name of the plant used in ITK** | *Amla* |
| **Names in Indian languages** | **Amla:** Bengali: *amla, amlaki;* Gujarati: *amali, ambala;* Hindi; *amla, amlika, aonla;* Kannada: *amalaka;* Malayalam and Tamil: *nelli;* Sanskrit: *adiphala, dhatri, amalaka;* Telugu: *amalakamu*. |
| **English name** | ***Amla:*** Emblic myrobalan, Indian gooseberry |
| **Botanical name** | ***Amla:*** *Emblica officinalis* Gaertn. |
| **Active ingredients** | ***Amla:*** Its fruits are rich source of vitamin C. The fruit is acrid, cooling, refrigerant, diuretic and laxative. Raw fruit is eaten as an aperient. Dried fruit is useful in haemorrhage, diarrhoea and dysentery. In combination with iron, it is used as a remedy for anaemia, jaundice and dyspepsia. A fermented liquor prepared from the fruit is used in jaundice, dyspepsia and cough. The flowers are cooling, refrigerant |

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and aperient. The root and bark are refrigerant. The fruits are used in the preperation of writing inks and hair dye. The dried fruit is detergent and is used as shampoo for the head. The seeds are used in the treatment of asthma, bronchitis and biliousness.

**Geographical indications**

Branch

***Amla:*** A small or medium-sized deciduous tree with smooth, greenish grey, exfoliating bark. Leaves feathery with small narrowly oblong, pinnately arranged leaflets. Fruits depressed globose, V^-lin. in diameter, fleshy and obscurely 6-lobed, containing 6 trigonous seeds. The tree is common in the mixed deciduous forest in India ascending to 4,500 ft on the hills. It is often cultivated in gardens and homeyards.

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| **Code** | **833** |
| **Title of the ITK** | **Treatment for stomach problem in ruminants** |
| **Reference of the ITK*** | Volume 2, page 354 |
| **Names of the plants used in ITK** | *Harad*, *beheda*, *amla*, *long*, garlic, *ajwain*, *methi* and tobacco |
| **Names in Indian languages** | ***Harad:*** Assamese: *silikha;* Bengali: *haritaki;* Gujarati: *hardo;* Hindi: *hardo;* Marathi: *hirda;* Oriya: *haridra;* Tamil: kadukkai; Telugu: *karakkai.*<br><br>***Beheda:*** Bengali: *bhairah;* Hindi: *bahera;* Malayalam: *thani;* Marathi: *beheda;* Oriya: *bhara;* Tamil & Telugu: *tani.*<br><br>***Ajwain:*** Bengali: *khorasaniajowan;* Hindi: *khurasaniajvayan;* Gujarati: *khorasaniajmo;* Kannada: *khurasanivadaki;* Marathi: *khorasanivova;* Sanskrit: *dipya, parasikaya;* Tamil: *kurasaniyomam;* Telugu: *khurashanivamam.* |
| **English names** | ***Harad:*** Chebulic myrobalan<br><br>***Beheda:*** Belliric myrobalan<br><br>***Ajwain:*** Henbane, black henbane |
| **Botanical names** | ***Harad:*** *Terminalia chebula* Retz.<br><br>***Beheda:*** *Terminalia bellirica* Roxb.<br><br>***Ajwain:*** *Hyoscyamus niger* Linn. |

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## Active ingredients

***Harad:*** The dried flesh surrounding the seed is rich in tannin (30-32%). The carbohydrate present in myrobalan are glucose and sebitalas a major constituent. It is one of the principle bloom-yielding tans, due to its high ellagitannic acid contents and it is useful specially in the production of sole leather. The extract has been successfully tried for pretanning cow and buffalo hides. Root, bark, heart wood, sap wood and leaves also contain In the tree maximum concentration of tannins occurs in fruits, followed by root, bark, heart wood, sap wood and leaves. The fruits are credited with laxative, stomachache, and alterative properties. The fruit pulp **is** used as a dentifrice to cure bleeding and ulceration of gums.

***Beheda:*** The non-edible oil from the kernels can be used in the manufacture of soap. The kernels possess narcotic properties and in Konkan are sometimes eaten with betel-nut and betel-leaf for the treatment of dyspepsia.The ripe fruit is used as an astringent, usually in combination with chebulic myrobalan.

***Ajwain:*** It has anodyne, narcotic and mydriatic properties. It is principally employed as a sedative in nervous affection and irritable conditions, such as asthma and whooping cough. It is also used to counteract the gripping action of purgative and to relieve spasms in the urinary tract. The principal alkaloid present in the various parts of the plant are hyoscyamine and hyoscine. It is employed as a sedative in nervous affection and irritable condition, such as asthma and whooping cough.

## Geographical indications

Branch

***Harad:*** A tree 15-24 m in height and 1.5-2.4 m in girth, with a cylindrical bole of 4-9 m, a rounded crown and spreading branches, found throughout the greater parts of India. Bark dark-brown, often longitudinally cracked, exfoliating in woody scales; leaves ovate or elliptic with a pair of large glands at the top of the petiole; flowers yellowish white, in terminal spikes; drupes ellipsoidal, obovoid or ovoid, yellow to orange-brown, sometimes tinged with red or black and hard when ripe, 3-5 cm long, become 5-ribbed on drying; seeds hard, pale yellow. It is found in the sub-Himalayan tracts ascending up to an altitude of 1,500 m in the Himalayas.

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Habit

*Beheda: A* handsome tree, with characteristic bark, attaining a height up to 40 m and a girth of 1.8-3.0 m, found in deciduous forests throughout the greater part of India, but not in the arid regions. Stems straight, frequently buttressed when large; leaves broadly elliptic, clustered towards the end of branches; flowers in solitary, simple, axillary spikes, fruits globular, 1.3-2.0 cm in diameter, obscurely 5-angled.

*Ajwain:* An erect, viscidly hairy, foetid annual or biennial, up to 5 ft high, occurring in western Himalayas from Kashmir to Kumaon, at altitudes of 5,000 to 12,000 ft. Leaves radical and cauline, coarsely dentate to pinnately lobed; flowers yellowish green, sessile or sub-sessile, in terminal scorpioidal cymes; pyxidium, 0.5 in. diameter; seeds numerous, minute, oval or slightly kidney-shaped, 1.5 mm long, brown, marked with fine but conspicuous reticulations.

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| **Code** | **1479** |
| **Title of the ITK** | **To protect cattle and goat from loose motion** |
| **Reference of the ITK*** | Volume 2, page 355 |
| **Name of the plant used in ITK** | Indian hemp |
| **Names in Indian languages** | Assamese, Bengali, Gujarati, Hindi, & Marathi: *bhang, charas, ganja;* Kannada: *bangi;* Malayalam: *kanchanchotti;* Oriya: *ganjaie;* Punjabi: *bhang;* Sanskrit: *bhanga, vijaya;* Tamil: *bhangi, ganja;* Telugu: *ganjai, kalpam-chettu.* |
| **English name** | Soft hemp, true hemp |
| **Botanical name** | *Cannabis sativa* Linn. |
| **Active ingredients** | *Cannabis* is cultivated for its narcotic resin, fibre and seed. But the plants cultivated for fibre and seed are not used simultaneously for extracting the narcotic resin. The hilly areas are more suitable for the cultivation of the fibre and seed crop, whereas the arid areas are ideal for the crop yielding the narcotic drugs. The seeds from the seed crop are sent to the areas where the crop is grown for the drugs. |

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**Geographical indications**

A strong-smelling annual of variable height (1-5 m) occurring wild throughout the western Himalayas, and abundantly found as an escape throughout the greater part of India. It is cultivated in the warm valleys of the Himalayas in Himachal Pradesh and in the adjoining plains from Kashmir eastwards to Assam. It is also grown in Uttar Pradesh, Madhya Pradesh and Orissa. Some wild growth is reported from Tamil Nadu, Rajasthan, Bihar and Kerala. Stem slender, angular, grooved; leaves 7-20 cm long, palmately 3-11 partite, stalked; leaflets sessile, narrow-lanceolate, serrate, upper surface scabrid, lower slightly hairy; male flowers yellow, in short dense cymes uniting into a lax foliate terminal panicle, female flowers light green, solitary, in the axils of small membranous bracts; achene, smooth, shining, 4-5 mm long.

Habit

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| **Code** | **784** |
| **Title of the ITK** | **Control of constipation or bloat in animals** |
| **Reference of the ITK*** | Volume 2, page 356 |
| **Names of the plants used in ITK** | *Ajawain, amla, harad, bahera* and *amaltas* |
| **Names in Indian languages** | *Amaltas:* Assamese: *honalu, sonaru;* Bengali: *amultas, bandarlati, sundali;* Gujarati: *garmalo;* Hindi: *amaltas, bandarlauri;* Kannada: *kakkemara, rajataru;* Malayalam: *kanikonna, kritamalam, svarnaviram;* Marathi: *bahava, boya, chimkani;* Oriya: *soturongulo, sunari;* Sanskrit: *aragwadha, kritamala, svannavriksha;* Tamil: *arakkuvadam, konnei, sarakkondai;* Telugu: *aragvadhamu, kolaponna, rellachettu;* Urdu: *amaltas.* |
| **English name** | *Amaltas:* Golden-shower, Indian laburnum, purging *cassia or fistula* |
| **Botanical name** | *Amaltas: Cassia fistula* Linn. |

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**Active ingredients** : ***Amaltas:*** The bark possesses tonic and anti-dysenteric properties. It is also used for skin complaints. The wood is given in dysentery; the ash is reported to be employed as caustic to open abscesses. The powder or decoction of the bark is administered in leprosy, jaundice, syphilis and heart diseases. The stem bark is reported to be eaten raw for stomachache. The pods are known for their laxative properties. The drug consists of the dried pod, known as cassia-fruit, or cassia-pod, and its pulp, cassia pulp. The pulp is a safe purgative, and is recommended for children and pregnant women. It is given in disorders of liver and in biliousness, and acts as a tonic; it is also applied in gout and rheumatism. The leaves are eaten. Though reported not to be grazed by cattle and goats, they are used as fodder for livestock. They are also a source of green-manure. The flowers contain methyleugenol. Methyleugenol is reported to attract the fruitfly, *Dacus dorsalis* (Hendel).

**Geographical indications** : *Amaltas:* A deciduous, medium-sized tree up to 24 m in height and 1.8 m in girth, with a straight bole up to 15 m, found both wild and cultivated almost throughout India. Bark grey, smooth, exfoliating in small, woody scales up to 1.5 cm thick; leaves 20-40 cm, rachis and petiole glandless, leaflets 4-8 pairs, distinctly stalked, 5-15 cm long, oblong or ovate, clothed with young, caducous, silvery pubescence; flowers bright yellow, in axillary, pendulous, lax racemes; pods cylindrical, pendulous, smooth, hard, dark brown or black, up to 60 cm x 2.5-3.0 cm; seeds light brown, hard, smooth, shiny, 0.7-1.0 cm x 0.5-0.7 cm, biconcave, 40-100, embedded in sweetish pulp.

Habit

**Code** **846**

**Title of the ITK** **Treatment for *afara***

**Reference of the ITK*** Volume 2, page 357

**Names of the plants used in ITK** Onion and turmeric

*Onion:* Refer to ITK Code No. 689

*Turmeric:* Refer to ITK Code No. 481

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| **Code** | **1189** |
| **Title of the ITK** | **Treatment of stomach pain with *mandar* leaves** |
| **Reference of the ITK*** | Volume 2, page |
| **Names of the plants used in ITK** | 357 *Mandar*, garlic and turmeric<br>**Garlic:** Refer to ITK Code No. 1116<br>**Turmeric:** Refer to ITK Code No. 481 |

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| **Code** | **1575** |
| **Title of the ITK** | **Cure from stomach pain in animals by bengsag** |
| **Reference of the ITK*** | Volume 2, page 358 |
| **Name of the plant used in ITK** | *Bengsag* |
| **Names in Indian languages** | Assamese: *Manimuni;* Bengali: *thankuni, tholkuri;* Hindi: *brahma-manduki, khulakhudi, mandookaparni;* Kannada: *brahmisoppu, vandelaga-illikiwigidda;* Malayalam: *kodangal, muyalchevi;* Marathi: *karinga, karivana;* Oriya: *thalkudi;* Sanskrit: *mandukaparni, mutthil;* Tamil: *vallarai;* Telugu: *brahmi, saraswataku.* |
| **English names** | Centella, Indian pennywort |
| **Botanical name** | *Centella asiatica* (Linn.) Urban |
| **Active ingredients** | The plant is valued in indigenous medicine for treatment of leprosy and skin diseases and also to improve memory. In pharmacological and clinical trials it has been found to improve the power of concentration and general ability and behaviour of mentally retarded children. The plant shows good therapeutic effects on peptic ulcers. It is one of the components of the drug Geriforte, which is used for senile prurit. A paste of the plant is applied on boils and tumours. A syrup of the leaves with ginger and black pepper is taken for cough. Leaf juice with palm jaggery is given to women as a tonic after delivery. The leaf juice is rubbed on the forehead to cure severe headache. Mixed with bath water, it is used in eczema. The leaf extract is used in the preparation of a medicated oil for bone fracture. An alcoholic extract of the herb gives an essential oil possessing the strong odour of the herb, a fatty oil, tannin and a resinous substance. |

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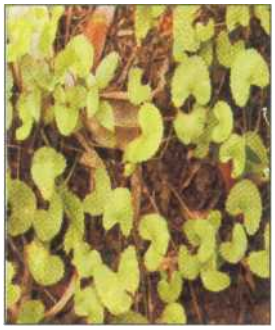
**Geographical indications**



Habit

A prostrate, faintly aromatic, stoloniferous perennial herb, up to 2 m long, commonly found as a weed in crop fields and other waste places throughout India up to an altitude of 600 m. Stem glabrous, pink and striated, rooting at the nodes; leaves fleshy, orbicular-reniform, crenate-dentate, base cordate and often lobed, long-petioled, smooth on the upper surface and sparsely hairy on the lower; flowers red, pink or white, in fascicled umbels; fruits oblong, dull brown, laterally compressed, pericarp hard and thickened, woody, white. The plant is found in abundance on moist, sandy or clayey soils, often in large clumps forming a dense green carpet. It is a useful cover crop in plantations; its cultivation is also recommended for preventing surface run-off on steep slopes. It is propagated from seeds or from stolons.

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| **Code** | **2173** |
| **Title of the ITK** | ***Takingjeera* (cumin seeds) water against indigestion** |
| **Reference of the ITK*** | Volume 2, page 359 |
| **Name of the plant used in ITK** | *Jeera* |
| | Refer to ITK Code No. 827 |

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| **Code** | **2174** |
| **Title of the ITK** | **Asafoetida to relieve stomach and backaches** |
| **Reference of the ITK*** | Volume 2, page 359 |
| **Name of the plant used in ITK** | Asafoetida |
| | Refer to ITK Code No. 702 |

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| **Code** | **2176** |
| **Title of the ITK** | ***Dhania* (Coriander seed) *sharbat* to relieve stomachache** |
| **Reference of the ITK*** | Volume 2, page 359 |
| **Name of the plant used in ITK** | *Dhania* |
| | Refer to ITK Code No. 1185 |

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| **Code** | : | **1225** |
| **Title of the ITK** | : | **Use of neem juice for treatment of fever of calves** |
| **Reference of the ITK*** | | Volume 2, page 366 |
| **Name of the plant used in ITK** | | Neem |
| | | Refer to ITK Code No. 151 |

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| **Code** | **1253** |
| **Title of the ITK** | **Herbal preparation for cough and cold** |
| **Reference of the ITK*** | Volume 2, page 367 |
| **Name of the plant used in ITK** | *Apamarg* |
| **Names in Indian languages** | Assamese: chik-kai-rek, non-phak-pe, soh-byrthied; Bengali: *apang, chirchiti;* Gujarati: *aghedo, anghedo;* Hindi: *chirchira, chirchitta, latjira;* Kannada: *utranigida, uttaraanne;* Malayalam: *kadaladi;* Marathi: *aghada, aghara;* Oriya: *apamaranga, apamargo;* Sanskrit: *apamaraga;* Tamil: *chirukadaladi, naayurivi;* Telugu: *apamargamu, uttareeni.* |
| **English name** | Prickly, chaff flower |
| **Botanical name** | *Achyranthes aspera* Linn. |
| **Active ingredients** | The young leaves are eaten as a pot-herb; also the plant is grazed by cattle and goats. The seeds are nutritious when cooked with milk and are a potential source of food; their chemical composition showed close similarity to that of bengal gram. It is reported to be pungent, astringent, pectoral and diuretic. It is used as an emmenagogue, and in piles and skin eruptions. A decoction of the plant is useful in pneumonia and renal dropsy; in large doses, however, the decoction or juice acts as an ecbolic. The juice of the plant is reported to be used in ophthalmia and dysentery. The benzene extract of stem bark showed significant abortifacient activity. A decoction of the roots is used for stomach troubles, and an aqueous extract for stones in the bladder. The flowers, ground and mixed with curd and sugar, are given as a medicine for menorrhagia. The flower-tops are stated to be employed for the treatment of rabies. Powdered seeds are soaked in butter-milk and given for biliousness; the seeds are said to be emetic. |

Contents

**Geographical indications**

Habit

An erect or procumbent, annual or perennial herb, 1-2 m in height, often with a woody base, commonly found as a weed of waysides and waste places throughout India, up to an altitude of 2,100 m, and in the south Andaman Islands. Stems angular, ribbed, simple or branched from the base, often tinged with reddish purple colour; leaves thick, ovate-elliptic or obovate-rounded, but variable in shape and size; flowers greenish white, numerous in axillary or terminal spikes up to 75 cm long; seeds sub-cylindric, truncate at the apex, rounded at the base, reddish brown.

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| **Code** | **1483** |
| **Title of the ITK** | **Control of ephemeral fever of cattle and buffalo** |
| **Reference of the ITK*** | Volume 2, page 367 |
| **Names of the plants used in ITK** | Bamboo, *sindwar* and neem<br>*Bamboo:* Refer to ITK Code No. 359<br>*Sindwar:* Refer to ITK Code No. 702<br>Neem: Refer to ITK Code No. 151 |

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| **Code** | **1519** |
| **Title of the ITK** | **Administration *oimahua* fruit to cure fever in animals** |
| **Reference of the ITK*** | Volume 2, page 367 |
| **Name of the plant used in ITK** | *Mahua*<br>Refer to ITK Code No. 1389 |

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| **Code** | **1535** |
| **Title of the ITK** | **Treatment of cold, cough and fever in animals through use of aniseed, garlic and onion** |
| **Reference of the ITK*** | Volume 2, page 368 |
| **Names of the plants used in ITK** | Aniseed, garlic, onion and mustard |
| **Names in Indian languages** | **Aniseed:** Bengali: *muhuri, mitha-jira;* Gujarati: *anisa;* Hindi: *saung, sawonf, badian;* Kannada & Tamil: *shombu;* Marathi: *somp, badishep;* Oriya: *sop;* Telugu: *kuppi, sopu.* |

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**English name** : **Aniseed:** Anise, aniseed

**Botanical name** : **Aniseed:** *Pimpinella anisum* Linn.

**Active ingredients** **: Aniseed**: Fruits are considered mild expectorant, stimulating, carminative, diuretic and diaphoretic, and are used in flatulent colic, in the preparation of asthma powders and in veterinary medicine. Alcoholic extract of aniseeds possesses fungicidal activity.

**Geographical indications** : **Aniseed:** An annual herb, 30-60 cm. high; leaves pinnatifid or ternately pinnate; flowers small, white, in compound umbels; fruit (schizocarp or cremocarp), ovoid or pyriform, laterally compressed, 3-5 mm in length and 2-3 mm broad, greyish green to greyish brown; mericarp broadly ovoid, 5-ridged with short hairs and numerous vittae. It is a native of the eastern Mediterranean region, is widely cultivated in southern and central Europe, U.S.S.R., north America, and to less extent in Mexico and South America.

Habit

**Code** **: 1577**

**Title of the ITK** **: Use of garlic as anticold in poultry**

**Reference of the ITK*** : Volume 2, page 368 : Garlic

**Name of the plant used in ITK** Refer to ITK Code No. 1116

**Code.** **: 1948**

**Title of the ITK** **: Application of fried beladonna leaf and mustard oil paste to control high fever in animals**

**Reference of the ITK*** : Volume 2, page 370

**Names of the plants used in ITK** : Belladonna and mustard

**Names in Indian languages** : **Belladonna:** Bengali: *yebruj;* Dogri: *mait-brand;* Hindi: *angurshefa, lukmuna, sagangur;* Kannada: *nati belladonna;* Punjabi: *angur-shefa, suchi*

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Contents

**English names**

**Belladonna:** Belladonna, deadly nightshade, Indian belladonna

**Botanical name**

**Belladonna:** *Atropa belladonna* C. B. Clarke

**Active ingredients**

**Belladonna:** Belladonna has a stimulating effect on respiration and circulation. It checks the action of the secretory glands and has a sedative action on the movements of the stomach, intestines, uterus, bladder, etc. It possesses the property of overcoming the spasm of involuntary muscles, dilating pupils and relieving pain when applied externally. It finds manifold uses as a stimulant, antispasmodic and sedative. It is a valuable antidote in cases of poisoning by opium, muscarine, chloral hydrate, etc., which have a strong depressant action. Belladonna is a highly toxic drug.

**Geographical indications**

Ripen Fruit

**Beladona:** A tall, erect, perennial herb, up to 2 m in height, woody below, found in the western Himalayan ranges extending from Kashmir at altitudes of 1,800-3,600 m to adjoining hills of Himachal pradesh up to 2,500 m. Leaves 7.5-20.0 cm long, elliptic or ovate-lanceolate, acuminate; flowers dirty yellow, bell-shaped, solitary or in twos or fours, axillary; berries shining, purple-black, globose; seeds many. It occurs chiefly in the valleys of Jhelum, Chenab and the Kishanganga rivers, and the forests of Bhadarwah and Kishtwar in Jammu & Kashmir. In Himachal Pradesh, it occurs in the Kangra reserve forests, the Kullu Forest Division in Kinnaur and the Narkanda forests in Shimla hills. In Uttar Pradesh it is found growing near Chakrata, and in West Bengal near Darjeeling.

Habit

Contents

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|---|---|
| **Code** | **1904** |
| **Title of the ITK** | **Use of banyan tree sap and cow ghee to remove blood clotting in animal eyes** |
| **Reference of the ITK*** | Volume 2, page 372 |
| **Name of the plant used in ITK** | Banyan |
| **Names in Indian languages** | Bengali: *bar, hot;* Gujarati: *vad, vadlo, vor;* Hindi: *bar, bargad, bor;* Kannada: *dla, alada mara, vata;* Malayalam: *ala, vatam;* Marathi: *vada, wad, war;* Sanskrit: *bahupada, vata;* Tamil: *al, alam;* Telugu: *marri, peddamarri.* |
| **English name** | Banyan |
| **Botanical name** | *Ficus benghalensis* Linn. |
| **Active ingredients** | The bark contains tannin. The banyan tree is one of the recorded hosts of the Indian lac insect. The milky juice is externally applied for pains and bruises and as an anodyne in rheumatism and lumbago. It is also used as a remedy for toothache. The leaves are heated and applied as poultic astingent and are used in dysentery, diarrhoea and diabetes. An infusion of young bud is useful in diarrhoea and dysentery. The seeds are considered cooling and tonic. |
| **Geographical indications** | A very large tree, with spreading branches, attaining at times a height of 100 ft; aerial roots many, some developing into accessory trunks and helping the lateral spread of the tree indefinitely; leaves 4-8 in. long, coriaceous, ovate to elliptic, with rounded or subcordate base; fruits sessile in pairs, $^{1}/_{2}$- $^{3}/_{4}$ in. in diameter, subglobose, puberulous, scarlet when ripe. The tree occurs throughout the forest tracts of India, both in sub-Himalayan region and in the deciduous forests of Deccan and south India. |

Habit

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|---|---|
| **Code** | **2198** |
| **Title of the ITK** | **Use of fresh bitter gourd leaves to control pus formation and watery eye problem in cattle** |
| **Reference of the ITK*** | Volume 2, page 373 |
| **Name of the plant used in ITK** | Bitter gourd |

Contents

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|---|---|
| **Name in Indian languages** | Bengali: *karela;* Hindi: *karela, kareli;* Kannada: *hagai,* Malayalam: *kaippa, kaippavalli;* Marathi: *karle;* Tamil: *Pakal, pavakka.* |
| **English name** | Bitter gourd, carilla fruit |
| **Botanical name** | *Momordica charantia* Linn. |
| **Active ingredients** | Fruit contains ascorbigen, a bound form of ascorbic acid. The fruits and leaves of the plant contain two alkaloids, one of them being momordicin. The roots are also bitter. The fruits are considered tonic, stomachic, carminative and cooling. They are used in rheumatism, gout and diseases of liver and spleen. The fruits of uncultivated forms are used as febrifuge. The fruits, leaves and roots have been used in India as folk remedy for diabetes mellitus. |
| **Geographical indications** | A monoecious climber found throughout India, often under cultivation, up to an altitude of 1,500 m stem slender, more or less pubescent; leaves sub-orbicular, 5-7 lobed, pubescent or sub-glabrous; flowers yellow, solitary; fruits 5.0-25.0 cm long, pendulous, fusiform, beaked, ribbed with numerous tubercles; seeds brownish, 13.0-16.0 mm long, compressed, embedded in red pulp. The plant is cultivated throughout India as a vegetable crop. |

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| **Code** | **241** |
| **Title of the ITK** | **Control of respiratory tract infection in poultry birds** |
| **Reference of the ITK*** | Volume 2, page 373 |
| **Name of the plant used in ITK** | *Tulsi*<br>Refer to ITK Code No. 1809 |

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|---|---|
| **Code** | **1587** |
| **Title of the ITK** | **Remedy for flatulence in cattle** |
| **Reference of the ITK*** | Volume 2, page 375 |
| **Names of the plants used in ITK** | *Tori* and *ghia tori* |
| **Names in Indian languages** | *Tori:* Bengali: *jhinga, sataputi;* Gujarati: *ghisoda;* Hindi: *kali tori, jhinga tori;* Kannada: *hirekayi;* Malayalam: *pichenga;* Marathi: *shirola;* Sanskrit: *jhongaka, koshataki;* Tamil: *pirkankai;* Telugu: *birakaya.* |

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***Ghia tori:*** Bengali: *dhundal;* Gujarati: *turia;* Hindi: *ghiya tori;* Kannada: *tuppahirekai;* Malayalam: *kattupeechal;* Marathi: *ghosali;* Sanskrit: *rajakoshataki, dirgha patolika;* Tamil: *mozhuku pirkankai;* Telugu: *guthibira.*

**English names**

***Tori:*** Ridged or ribbed gourd

***Ghia tori:*** Sponge gourd, vegetable sponge

**Botanical names**

***Tori:*** *Luffa acutangula* (Linn.) Roxb.

***Ghia tori:*** *Luffa cylindrica* (Linn.) M. J. Roem.

**Active ingredients**

***Tori:*** Leaves of the plant are used as poultice in haemorrhoids and leprosy. The juice of fresh leaves is reported to be useful in granular conjuctivitis in children. Ripe seeds are bitter, they are reputed to possess emetic and purgative properties.

***Ghia tori:*** Dried fruits yield fibrous substances which are used as substitute for bath sponges; also make good packing materials and stuffing for pillows, mattresses, shoulder pads and saddles; also used in the manufacture of sun helmets, because of good insulation against heat. Dried fruits also possess good shock- and sound-absorbing properties. Seeds yield an edible oil.

**Geographical indications**

Flower

Fruit

***Tori:*** A large climber with palmately 5-7-angled or lobed leaves found wild in northwest India, Bihar, Bengal, Sikkim and Assam, and also in Tamil Nadu. Plants monoecious; male flowers with 3 stamens, in 10 to 20-flowered racemes, female flowers solitary, in same axils as males; fruits 15-30 cm. Long (rarely up to 1 m. or more), cylindrical or club-shaped, with 10 prominent almost wing-like, longitudinal ribs or ridges; seeds much compressed, 10-12 mm long, slightly corrugated on edges, black when ripe. Ridge gourd cultivated throughout India. A strain grown in Bihar, and locally known as *satputria* or *satputiya*, bears hermaphrodite flowers and fruits in clusters. A cross of *satputiya* with the common monoecious strain is reported to yield five times as much fruit as the monoecious parent; unlike the *satputiya* parent, it is suitable for summer cultivation. Pusa Nasdar, a strain evolved from the common cultivated form, is reported to be early maturing; it produces club-shaped fruits of good length and is suitable for cultivation in summer.

Contents

Flowers Fruit

***Ghia tori:*** A large climber in habit, but it mainly having five stamens in the flower and in the shape of fruit and seed. Fruit smooth, cylindrical, usually 20-50 cm. long, rarely reaching 250 cm; seed narrowly winged, blackish. It is said to be indigenous to India.

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| **Code** | **1908** |
| **Title of the ITK** | **Use of tamarind pulp, mustard oil, cowdung ash and common salt to control flatulence disease in cattle** |
| **Reference of the ITK*** | Volume 2, page 375 |
| **Names of the plants used in ITK** | Tamarind and mustard |
| | **Tamarind:** Refer to ITK Code No. 125 (a) |
| | ***Mustard:*** Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **1265** |
| **Title of the ITK** | **Treatment of *haemorrhagic septicaemia* (H.S.) in animals** |
| **Reference of the ITK*** | Volume 2, page 376 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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|---|---|
| **Code** | **1272** |
| **Title of the ITK** | **Treatment for *galghotu*** |
| **Reference of the ITK*** | Volume 2, page 376 |
| **Name of the plant used in ITK** | Castor |
| | Refer to ITK Code No. 1808 |

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|---|---|
| **Code** | **1285** |
| **Title of the ITK** | **Treatment of *haemorrhagic septicaemia* disease by *kala jeera*** |
| **Reference of the ITK*** | Volume 2, page 376 |
| **Name of the plant used in ITK** | *Kala jeera* |
| | Refer to ITK Code No. 44 |

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|---|---|
| **Code** | **1554** |
| **Title of the ITK** | **Use of elephant yam in controlling the *haemorrhagic septicaemia (galghotu)* disease in milch animal or cow** |
| **Reference of the ITK*** | Volume 2, page 377 |
| **Name of the plant used in ITK** | Elephant yam |
| **Name in Indian languages** | Assamese and Bengali: *ol;* Gujarati and Marathi: *suran;* Hindi: *jangli suran, jimikand, suran, zaminkand;* Kannada: *suvarna gedda;* Malayalam & Tamil: *chena, kachul, karanai-kilangu, shaenai kizhangu;* Oriya: *farasi, olna, simba;* Sanskrit: *arsaghna, suran, suranah;* Telugu: *manshikanda, potigunda, theeyakanda.* |
| **English name** | Elephant-foot yam |
| **Botanical name** | *Amorphophallus campanulatus* Blume ex Decne |
| **Active ingredients** | The corms are aperient, carminative and expectorant; the fresh ones are acrid stimulant and expectorant, and increase appetite and taste. They are applied externally as an irritant to treat acute rheumatism. The corms are administered internally, particularly in the treatment of dysentery, piles and haemorrhoids. The active principle of the stem is reported to inhibit the growth of bovine strain of *Mycobacterium tuberculosis.* |
| **Geographical indications** | A tuberous, stout, indigenous herb, 1.0-1.5 m in height, found almost throughout India and also cultivated. Tubers depressed, globose or hemispherical, 20-30 cm in diameter, dark brown outside, pale dull brown inside or sometimes almost white, with numerous, long terete roots; leaves solitary, tripartite, 30-90 cm broad or even more, appearing long after the flowers: petioles 60-90 cm long, stout, warted, dark green and mottled with paler blotches; segments 5-18 cm long and 2.5-9.0 cm broad, obovate or oblong, acute, sessile; peduncle short, stout, elongating in fruit. The occurrence of the wild plant has been reported all over the plains of north India, extending to West Bengal and Assam, and in Konkan (Maharshtra). Its origin is, however, presumed to be in eastern India. It is widely cultivated throughout the upper Gangetic plains and in peninsular India. |

Flower

Habit

Contents

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|---|---|---|
| **Code** | : | **1909** |
| **Title of the ITK** | : | **Use of tamarind, chillies and palm oil to control throat infection in cattle** |
| **Reference of the ITK*** | : | Volume 2, page 379 : |
| **Names of the plants used in ITK** | | Tamarind and chilli |
| | | **Tamarind:** Refer to ITK Code No. 125 (a) |
| | | **Chilli:** Refer to ITK No. 139 |

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|---|---|
| **Code** | **1962** |
| **Title of the ITK** | **Use of tamarind, chillies and turmeric for cure of throat infection in animals** |
| **Reference of the ITK*** | Volume 2, page 379 |
| **Names of the plants used in ITK** | Tamarind, chilli and turmeric |
| | **Tamarind:** Refer to ITK Code No. 125 (a) |
| | **Chilli:** Refer to ITK Code No. 139 |
| | **Turmeric:** Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **45** |
| **Title of the ITK** | **Technique of removing placenta in animals** |
| **Reference of the ITK*** | Volume 2, pages 379-380 |
| **Names of the plants used in ITK** | *Sinia*, bamboo, *ajwain*, *kneep*, *arjan* and chickpea |
| **Names in Indian languages** | *Kneep:* Gujarati: *khip;* Punjabi: *kip.* |
| | ***Arjan:*** Gujarati: *adusa*, *arduri*, *moto-arduso;* Hindi: *maharuk, maharukha;* Kannada: *doddamara, hemaraheera mara;* Malayalam: *mattipongilyam;* Marathi: *maharuk;* Oriya: *mahala, mahanim;* Sanskrit: *madala, madala aralu;* Tamil: *perm, perumaruttu;* Telugu: *peddamanu.* |
| **English name** | *Arjan:* Tree of heaven |
| **Botanical name** | ***Kneep:*** *Leptadenia pyrotechnica* (Forsk.) Decne. |
| | *Arjan: Ailanthus excelsa* Roxb. |

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**Contents**

**Active ingredients** : ***Kneep:*** The plant yields a fibre used for rope making. It is reported to be suitable for paper manufacture. The plant provides fodder for cattle, horses and camels. It is also used for thatching purposes. The tuberous root is consumed as vegetable.

*Arjan:* The bark is bitter, astringent, febrifuge and anthelmintic. It has anti-spasmodic and expectorant properties, and is used for asthma, bronchitis and dysentery. It is also used for dyspepsia and earache, and has antiseptic properties. The bark is a good substitute for *kurchi (Holarrhena antidysenterica* Wall.) bark, and is used in indigenous veterinary practice. Quassinoids are isolated from the stem- and root-bark. The tree yields an inferior quality of bassora or hog gum.

**Geographical indications**

*Kneep:* A much-branched, often leafless shrub up to 1.8 m high, found chiefly in dry and sandy places in Punjab, western U.P., Rajasthan and northern parts of Maharashtra along the sea coast. Leaves linear or linear-lanceolate, 2.5-5.6 cm long, glabrous; flowers yellow, in small umbellate cymes; follicles lanceolate, terete, 8.7-11.2 cm long.

*Arjan:* A large, deciduous tree, up to 24 m in height and 2.5 m in girth, with a straight cylindrical bole, indigenous to central and southern India and found throughout Madhya Pradesh, in Broach and Panchmahal districts in Gujarat, some coastal districts in Andhra Pradesh, and Ganjam and Puri districts in Orissa. Bark light grey and smooth in young trees, with large leaf-scars, rough, granular and greyish-brown in older trees; leaves pinnately compound, up to 90 cm long with 8-14 pairs of leaflets; flowers small, yellowish, in panicles; fruits one-seeded samara. *A. excelsa* is fast growing tree, and is extensively cultivated in many parts of India in the vicinity of villages.

**Code** : **61**

**Title of the ITK** : **Placenta removal in animals by use of chickpea and milk**

**Reference of the ITK*** : Volume 2, page 380

**Name of the plant used in ITK** : Chickpea

Refer to ITK Code No. 1242

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| **Code** | **816** |
| **Title of the ITK** | **Use of fig and *gur* for expulsion of placenta *(jer ka rukna)* in cattle** |
| **Reference of the ITK*** | Volume *2*, page 380 |
| **Names of the plants used in ITK** | Fig and *gur* |
| **Names in Indian languages** | *Fig:* Bengali, Gujarati, Hindi and Marathi: *anjir;* Kannada: *anjura;* Malayalam: *simayatti;* Tamil: *simaiyatti, tenatd;* Telugu: *anjura, manjimedi, simayatti.* |
| **English name** | *Fig:* Common fig ***Fig:*** |
| **Botanical name** | *Ficus carica* **Linn.** |
| **Active ingredients** | *Fig:* The principal acids in fresh fig are citric and acetic. The fruits fresh or dried are valued for their laxative properties. It is diuretic, demulcent, emollient and nutritive. Figs are considered useful in the preservation of nutritional anaemia. Fig leaves are used as podder, for which purpose they are gathered after the fruits have ripened. |
| **Geographical indications** | *Fig:* A small or moderate-sized deciduous tree, 15-30 ft high, with broad ovate or nearly orbicular leaves, more or less deeply 3-5 lobed, rough above and pubescent below; fruits axillary, usually pear-shaped, variable in size and colour. The fig plant is considered to be a native of Carica in Asia Minor and is grown in nearly all tropical and sub tropical countries. In India, its commercial production is limited to a few centres near Pune (Maharashtra), Bellary (Karnataka) and Anantapur districts (Andhra Pradesh). In Punjab, U.P. and Karnataka, it is mostly grown scattered in gardens or in homey ards. |

Branch

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|---|---|
| **Code** | **825** |
| **Title of the ITK** | **Treatment of cow for expulsion of placenta** |
| **Reference of the ITK*** | Volume 2, page 381 |
| **Names of the plants used in ITK** | Bamboo and paddy<br>**Bamboo:** Refer to ITK Code No. 359<br>**Paddy:** Refer to ITK Code No. 481 |

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**Code** : **854**

**Title of the ITK** : **Treatment for eating of placenta in cattle**

**Reference of the ITK*** : Volume 2, page 381

**Name of the plant used in ITK** : *Sembal*

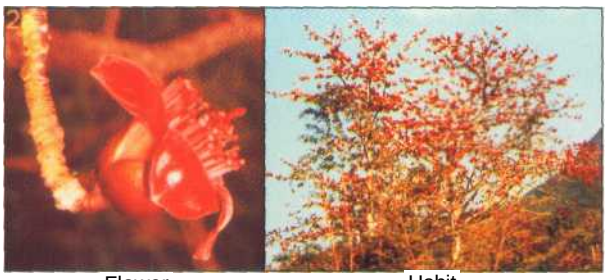
**Names in Indian languages** : Bengali: *pagan, roktosimul, simul;* Gujarati: *sawar, shimalo;* Hindi: *kaantisenbal, pagun, rakatsenbal, semul;* Kannada: *booruga, kempubooruga, mullelava, Mullubooruga;* Malayalam: *mullilabpoola, mullilavau;* Marathi: *kantasavar, saur, simalo;* Oriya: *bouroh;* Sanskrit: *kantakadruma, raktapushpa, salmali;* Tamil: *illavam, mullilavau, pulai;* Telugu: *boorugachettu, kondabooruga-chettu, mundlaboorugachettu.*

**English name** : Silk-cotton tree

**Botanical name** : *Bombax ceiba* Linn.

**Active ingredients** : Seeds are used as fodder, and the silky floss, obtained from inner wall of fruit, is used for stuffing pillows and mattresses. Gum or dried juice from trunk is used as an adhesive. Wood is used for a variety of purposes, the chief are plywood, packing-case manufacture, matches and mechanical pulp for newsprint; also commonly used as board-making for various purposes such as ceiling-boards, picture frames and for use in plywood tea-chests.

**Geographical indications** : A lofty, deciduous tree buttressed at the base, up to 40 m or more in girth, with a clear bole of 24-30 m, widely distributed throughout India, including the Andamans, up to 1,500 m or even higher. Branches horizontally spreading, more or less in whorls; young stems and branches covered with stout, hard prickles; bark pale ash to silver-grey, smooth in the early years, later becoming rough, with irregular vertical cracks; leaves large, spreading, glabrous, digitate, leaflets 5-7, lanceolate, 10-20 cm long; flowers numerous, large, 10-13 cm in diameter, fleshy, bright crimson, yellow or orange, clustered at the end of branches, bisexual, very rarely unisexual; capsules oblong-ovoid, woody, 10-19 cm long; seeds many, obovoid, smooth, 6-9 mm long, oily, with dense silky hairs. In peninsular India the tree is very common in the dry as well as moist, mixed deciduous



Flower Habit

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forests; in West Bengal and Assam it is found in the mixed evergreen forests as well. The tree grows sporadically in the mixed deciduous forests in the sub-Himalayan region and lower valleys, and is typical of the alluvial-savannah-type forests, tending to be gregarious near the river-banks. It also occurs in the sal *(Shorea robusta* Gaertn. f.) forests. Though generally scarce in the hills, it is very common in the *bhabar* tracts of Uttar Pradesh and Bihar, especially in the open grazing-grounds in the forests.

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| **Code** | **863** |
| **Title of the ITK** | **Treatment for removal of placenta in cattle** |
| **Reference of the ITK*** | Volume 2, page 381 |
| **Name of the plant used in ITK** | Banana |
| | Refer to ITK Code No. 1192 |

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|---|---|
| **Code** | **1216** |
| **Title of the ITK** | **Expulsion of retained placenta** |
| **Reference of the ITK*** | Volume 2, page 382 |
| **Name of the plant used in ITK** | Barley |
| | Refer to ITK Code No. 54 |

| | |
|---|---|
| **Code** | **1233** |
| **Title of the ITK** | **Expulsion of retained placenta** |
| **Reference of the ITK*** | Volume 2, page 382 |
| **Names of the plants used in ITK** | *Ajwaine*, *shatawar*, bamboo, mango and paddy |
| **Names in Indian languages** | *Shatawar:* Bengali: *shatamuli;* Gujarati: *ekalkanto, satavari;* Hindi: *chatwal, satawar, satmuli, shakakui,* Kannada: *aheruballi, ashadhi, majjigegadde, sipariberuballi;* Malayalam: *chatavali, satavari;* Marathi: *asvel, shatavari, shatmuli;* Oriya: *chhotaru, mohajolo, sotabori;* Sanskrit: *satavari;* Tamil: *ammaikodi, inli-chedi, kadumulla, shimai-shadavari;* Telugu: *pilli-gaddalu, toala-gaddalu.* |

**Botanical name**

***Shatawar:*** *Asparagus racemosus* Willd.

**Active ingredients**

***Shatawar:*** The roots of A. *racemosus* are borne in a compact bunch and are fleshy and spindle-shaped. They are marketed in pieces 5-15 cm in length and 2 cm in thickness. They are silvery white or light ash-coloured externally and white internally, more or less smooth when fresh, developing longitudinal wrinkles when dry. They lack a well-marked odour, but are sweet and bitter in taste. The bark exhibits anti-bacterial and anti-fungal activities, whereas the aerial parts produce carcinoma of the pharynx in animal trials. The aqueous extract of roots has inhibitory activity on the hatching of eggs of *Meloidogyne arenaria* (Neal) and *M. javanica* (Treub.). The fresh roots, cleaned and chopped, can be fed to buffaloes; they increase the milk yield. They are also eaten as a vegetable in the Kumaun hills. The tubers are often candied in Maharashtra. The flowers impart a perfume to the air to a considerable distance.

**Geographical indications**

***Shatawar:*** An extensively scandent, much-branched, spinous under-shrub, with tuberous, short rootstock bearing numerous fusiform, succulent tuberous roots 30-100 cm long and 1-2 cm thick, found growing wild in tropical and sub-tropical parts of India including the Andamans; and ascending in the Himalayas up to an altitude of 1,500 m. Stems woody, whitish grey or brown, armed with strong, straight or recurved spines 5-13 mm long; cladodes more or less acicular, falcate, finely acuminate; leaves reduced to sub-erect or sub-recurved spines; flowers white, fragrant, small, profuse in simple or branched racemes up to 7 cm long; berries globose, scarlet, trilobed, 4-6 mm in diameter. The plant is very common in the upper Gangetic plains and the Bihar plateau, flowering after the rains, when it becomes conspicuous by its masses of white fragrant flowers.

Stem

**Code**

**1274**

**Title of the ITK**

**Use of leaves *oijaiphal* and *kaiphal* for removing placenta from animal**

**Reference of the ITK***

Volume 2, page 383

**Names of the plants used in ITK**

Mango, *jaiphal* and *kaiphal*

Contents

**Names in Indian languages**

***Jaiphal:*** Assamese: *naga-tenga;* Bengali: *kaiphal, satsarila;* Gujarati: *kariphal;* Hindi: *kaiphal;* Kannada: *kirishivani;* Malayalam: *maruta;* Marathi: *haya phala;* Punjabi: *kaiphal, kahela, kahi;* Tamil: *marudam;* Telugu: *kaidaryamu.*

***Kaiphal:*** Kannada: *jajikai;* Malayalam: *patthapanu;* Marathi: *jayaphal;* Tamil: *katjathikai.*

**English name**

***Jaiphal:*** Box myrtle

**Botanical name**

***Jaiphal:*** *Mystica esculenta* Buch.-Ham.

***Kaiphal:*** *Myristica beddomei* King

**Active ingredients**

***Jaiphal:*** The bark of the plant is astringent, carminative and antiseptic. A decoction of the bark is considered useful in asthma, diarrhoea, fevers, lung affections, chronic bronchitis, dysentery and diuresis. The bark is chewed to relieve toothache and a lotion prepared from it is used for washing putrid sores.

***Kaiphal:*** The wood is suitable for tea boxes, match boxes and splints.

**Geographical indications**

***Jaiphal:*** A small or moderate-sized evergreen tree, 3-15 m high, found in sub-tropical Himalayas and in Khasi, Jaintia, Naga and Lushai hills at altitudes of 900-2,100 m. Bark grey or brownish grey, rough with deep vertical wrinkles; leaves lanceolate, oblong-obovate; flowers minute, unisexual, in axillary spikes; fruit an ellipsoid or ovoid drupe of the size of cherry, tubercled, reddish or cheese-coloured when ripe, with rugose nut.

Habit

***Kaiphal:*** Alarge evergreen tree, up to 27 m in height and 2.2 m in girth, found in western ghats from Konkan southwards and in Annamalai and Nilgiri hills up to an altitude of 1,500 m. Leaves oblong or elliptic lanceolate; flowers in cymes, dioecious; fruits subglobose (6 cm diameter), borne singley or in pairs; seeds globose with red, fleshy aril extending to the apex.

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| **Code** | **1921** |
| **Title of the ITK** | **Use of turmeric powder with mustard oil to prevent infection in cut portion of placenta** |
| **Reference of the ITK*** | Volume 2, page 383 |
| **Names of the plants used in ITK** | Turmeric and mustard<br>**Turmeric:** Refer to ITK Code No. 481<br>**Mustard**: Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **1937** |
| **Title of the ITK** | **Removal of placenta** |
| **Reference of the ITK*** | Volume 2, page 383 |
| **Name of the plant used in ITK** | *Mahua*<br>Refer to ITK Code No. 1389 |

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|---|---|
| **Code** | **49** |
| **Title of the ITK** | **Treatment of uterus outings in animals** |
| **Reference of the ITK*** | Volume 2, page 384 |
| **Names of the plants used in ITK** | *Methi, haldi and* opium |
| **Names in Indian languages** | **Opium:** Bengali: *pasto:* Gujarati: *aphina, khukhus, posta;* Hindi: *afim, afyun, kashkash, post;* Kannada: *afim, biligasgase, khasakhasi;* Malayalam: *afiun, kashakhasa;* Marathi: *aphu, khuskhus, posta;* Sanskrit: *ahifen, chosa, khasa;* Tamil: *abini, gashagasha, kasakasa, postaka;* Telugu: *abhini, gasalu, kasakasa.* |

Flower

Pod

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|---|---|---|
| **English name** | : | **Opium:** Opium poppy, white poppy |
| **Botanical name** | : | **Opium**: *Papaver somniferum* Linn. |
| **Active ingredients** | : | **Opium:** It is used as narcotic, sedative, anodyne, antispasmodic, hypnotic and sudorific. Morphine is used to relieve pain, anxiety and sleeplessness due to pain. |
| **Geographical indications** | : | **Opium:** An erect, rarely branched, usually glaucous annual, 60-120 cm high; leaves ovate-oblong or linear-oblong, amplexicaule, lobed, dentate or serrate; flowers large, usually bluish white with a purple base or white, purple or variegated; capsules large, 2.5 cm in diameter, globose, stalked; seeds white or black, reniform. |

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| **Code** | **1234** |
| **Title of the ITK** | **Curing of mastitis by using flat *thohar {Opuntia tuna)* as a drug** |
| **Reference of the ITK*** | Volume 2, page 386 |
| **Name of the plant used in ITK** | Flat *thohar* |
| **Names in Indian languages** | Bengali: *nagphana;* Gujarati: *chorhathalo;* Hindi: *hathhathoria, nagphana;* Kannada: *papaskalli;* Malayalam: *palakakkalli;* Marathi: *chapal;* Oriya: *nagophenia;* Tamil: *nagathali, sappathikalli;* Telugu: *nagajemudu.* |
| **English name** | Prickly pear, slipper thorn |
| **Botanical name** | *Opuntia dillenii* Haw. |
| **Active ingredients** | The plant yields a coarse fibre, which when dried is a source of paper pulp. The baked fruit is said to be given for whooping cough and a syrup of the fruit is said to increase the secretion of bile and control spasmodic cough and expectoration. |
| **Geographical indications** | An erect shrub, about 2.0 m high, with broadly ovate, dull bluish joints, bearing 4-6 pale yellow or light horn-coloured spines on each areole; spines usually somewhat curved, the largest very stout, 2.5-3.8 cm long; flowers yellow, tinged with orange at the base; fruits pyriform, truncate, depressed at the apex, deep reddish purple when ripe. This species is found nearly throughout India, but more commonly in south India. |

Habit

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| **Code** | **1250** |
| **Title of the ITK** | **Herbal preparation for prolapsed uterus in animals** |
| **Reference of the ITK*** | Volume 2, page 386 |
| **Name of the plant used in ITK** | *Bhring raj* |
| **Name in Indian languages** | Bengal: *kesuti, keshukti, keshori;* Gujarat: *bhangra, kaluganthi, dodhak, kalobhangro;* Hindi: *bhangra, mochkand, babri;* Kannada: *garagadasoppu;* Malayalam: *kyonni;* Marathi: *bhringuraja, maka;* Sanskrit: *bhringaraja, kesaraja, ajagara;* Tamil: *garuga, kayanthakara;* Telugu: *galagara, guntagalijeru* |
| **Botanical name** | *Eclipta alba* (Linn.) Hassk. |
|  Habit | The herb is used as a tonic and deobstruent in hepatic and spleen enlargement and in skin diseases. Plant juice is administered in combination with aromatics for catarrhal jaundice. The expressed leaf juice along with honey is a popular remedy for catarrh in infants. A preparation from the juice of the leaves boiled with sesame or coconut oil is used for anointing the head to render the hair black and luxuriant. Root is emetic and purgative. It is applied externally as antiseptic to ulcers and wounds in cattle. The shoot extract shows antibiotic activity against *Staphylococcus aureus* and *Escherichia coli.* |
| **Active ingredients** | |
| **Geographical indications** | An erect or prostrate, much branched, strigosely hirsute, annual, often rooting at the nodes; leaves opposite, sessile, oblong-lanceolate, 1-4 in. long; flower-heads white, 0.25 to 0.35 in. in diameter. This plant is a common weed in moist situations throughout India, ascending up to 6,000 ft on the hills. |

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| **Code** | **1273** |
| **Title of the ITK** | **Treatment of prolapse of uterus** |
| **Reference of the ITK*** | Volume 2, page 387 |
| **Name of the plant used in ITK** | Barley |
| | Refer to ITK Code No. 54 |

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|---|---|
| **Code** | **1579** |
| **Title of the ITK** | **Traditional method of avoiding abortion in cattle** |
| **Reference of the ITK*** | Volume 2, page 388 |
| **Name of the plant used in ITK** | *Gular* |
| **Names in Indian languages** | Bengali: *dumur, jagyadumbar;* Gujarati: *umar, gular,* Hindi: *gular, umar,* Kannada, Malayalam and Tamil: *athi;* Marathi: *umbar;* Oriya: *dimri;* Telugu: atti**,** *bodda, paidi, udumbaramu.* |
| **Botanical name** | *Ficus glomerata* Roxb. |
| **Active ingredients** | The coagulum of the latex may be used in the manufacture of ground sheet and waterproof bonded paper. The plant is one of the recorded hosts of Indian lac insect. Bark decoction is used as a wash for wounds. The root is useful in dysentery. The fruit is astringent and stomachic and carminative. The milky juice is administered in piles and diarrhoea. |
| **Geographical indications** | A moderate-sized to large spreading tree with ovate, ovate-lanceolate or elliptic, dark green leaves; fruits red when ripe, 1-2 in. in diameter, sub-globose or pyriform, borne in large clusters on short leafless branches emerging from the trunk and the main branches. The tree is not epiphytic and is found throughout the greater part of India in moist localities, e.g. along banks of streams and sites of ravines. It is found also on rocky slopes, sometimes almost gregariously. It is often cultivated around villages for its edible fruits. |

Habit

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| **Code** | **1281** |
| **Title of the ITK** | **Use of *Chenopodium album* to control mastitis in cattle and buffalo** |
| **Reference of the ITK*** | Volume 2, page 390 |
| **Name of the plant used in ITK** | *Chenopodium album* |
| **Names in Indian languages** | Bengali: *chandan betu;* Hindi: *bathua sag;* Kannada: *huchuchakkotha;* Marathi: *chakvat;* Sanskrit: *agaralohita, chillika, ksharadala;* Tamil: *parappukeerai;* Telugu: *pappukoora*. |

Contents

**English name** : Lamb's quarter, white goosefoot, wild spinach :

**Botanical name** *Chenopodium album* Linn.

**Active ingredients** : The young plant of not more than 20 cm is much esteemed as a potherb. The tender shoots are eaten raw in salad or with curd. The seeds are consumed cooked like rice or oatmeal or sometimes along with dal. The flour is used for livestock and poultry and also forms an important source of food for other birds; they are also suitable for animal feed. A decoction of the aerial parts, mixed with alcohol, is rubbed on the body affected by arthritis and rheumatism. The young shoots yield a green dye.

**Geographical indications** : A polymorphous, mealy-white, erect herb, up to 3.5 m in height, found wild up to an altitude of 4,700 m, and cultivated throughout India. Stems rarely slender, angled, often striped green, red or purple; leaves rhomboid, deltoid to lanceolate, upper entire, lower toothed or irregularly lobed, extremely variable in cultivated forms, 10-15 cm long, petioles often as long as the thick blade; flowers in clusters forming a compact or loosely panicled spikes in axils; utricles with round, compressed, shining black seeds, possessing sharp margins.

Habit

**Code** **55**

**Title of the ITK** **Control of internal parasites in animals**

**Reference of the ITK*** Volume 2, page 392

**Name of the plant used in ITK** *Amaltas*

Refer to ITK Code No. 784

**Code** **410**

**Title of the ITK** **Deworming in calf**

**Reference of the ITK*** Volume 2, page 392

**Name of the plant used in ITK** Cow hage

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| **Names in Indian languages** | Bengali: *alkushi, bichchoti;* Gujarati: *kivanch, kavatch;* Hindi: *kiwach, kaunch, goncha;* Kannada: *nasukunni, hasagunigida;* Malayalam: *naicorna;* Marathi: *kavacha, kuhili, kanchkuri;* Oriya: *kaincho;* Tamil: *poonaipidukkan, poonaikalei;* Telugu: *dulagondi, pilliadugu.* |
| **English name** | Common cowitch, cowhage. |
| **Botanical name** | *Mucuna prurita* Hook. |
| **Active ingredients** | The roots are tonic, stimulant, diuretic, purgative and emmenagogue. They are used for diseases of the nervous system, kidney troubles and dropsy. An ointment prepared from the roots is applied for elephantiasis. The seeds are astringent and tonic. The leaves of the plant are applied for ulcers. |
| **Geographical indications** | A herbaceous twining annual found almost all over India and in Andaman and Nicobar Islands. Leaves trifolilate: leaflets broadly ovate, elliptic or rhomboid ovate, unequal at base; flowers in axillary, pendulous racemes, purple; pods curved, 5-10 cm x 1.5-1.8 cm, longitudinally ribbed, turgid, densely clothed with persistent pale brown or grey, irritant bristles; seeds black, 4-6 in a pod, ovoid (12 mm long), with funicular hilum. It is reported to be a pest of sal plantations in Bengal. |

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| **Code** | **560** |
| **Title of the ITK** | **Control of intestinal worms through *mamira {Thalictrum* foliosum*)* roots** |
| **Reference of the ITK*** | Volume 2, page 393 |
| **Name of the plant used in ITK** | *Mamira* |
| **Name in Indian languages** | Bengali: *gurbiani;* Hindi: *pilazari, mamiri* (root); Dogri: *chaitra.* |
| **Botanical name** | *Thalictrum foliosum* DC |
| **Active ingredients** | In the form of a decoction, extract or powder, the root is much valued for the treatment of ophthalmia. The root is diuretic, aperient and purgative and as a bitter tonic during convalescence. It is also given for atonic dyspepsia. |

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| **Geographical indications** | An erect rigid, perennial herb, up to 2.5 m tall, found in the temperate Himalayas from 1,500 m to 2,400 m in the Khasi hills between 1,200 and 1,800 m, and in Kashmir, Punjab, Delhi, Uttar Pradesh Bihar and Orissa; it has also been recorded from Vishakhapatnam district in Andhra Pradesh at an altitude of 1,000 m. Rootstock fibrous, yellowish brown, resembling liquorice, but extremely bitter, leaves pinnately decompound; leaflets 4-6 mm, sub-orbicular; flowers pale green or dingy purple, polygamous, in branched panicles; achenes 3.75 cm long, sharply ribbed. |
| **Code** | 687 |
| **Title of the ITK** | **Deworming in cattle with *kamal (Mallotus philippensis)* seed powder** |
| **Reference of the ITK*** | Volume 2, page 393 |
| **Name of the plant used in ITK** | *Kamal* |
| **Names in Indian languages** | Assamese: *Jorat, losan;* Bengali: *kamala;* Gujarati: *kapilo;* Hindi: *kamala, sindur, rohini;* Kannada: *kunkumadamara;* Malayalam: *manjana, kuramadakku;* Marathi: *shendri;* Oriya: *sinduri, kunkumo, kapilogundi;* Tamil: *kapli, kungumam, kurangumanjanatti;* Telugu: *kunkuma, sinduri, chendiramu.* |
| **English name** | Kamala tree |
| **Botanical name** | *Mallotus philippensis* Muell.Arg. |
| **Active ingredients** | It is used in external applications for parasitic affections of the skin, such as scabies, ringworm and herpes, and is reported to possess styptic properties. |
| **Geographical indications** | A shrub or a small, much-branched, evergreen tree with a short and often buttressed bole, found throughout India, occasionally ascending to 1,500 m in the outer Himalayas. Bark thin, grey, somewhat rough; leaves variable, broadly ovate to ovate-oblong or ovate-lanceolate, glabrous above, pubescent with numerous red glands beneath; flowers in spikes, dioeceous, small; capsules globose, 3-lobed, 3-valved, 0.75-1.25 cm diameter, densely covered with reddish brown glandular pubescence; seeds sub-globose, black, smooth, 4 mm diameter. It is widely distributed in northern, central, western and southern India; it is scarce in the Andaman Islands. It is commonly found in sal and some scrub and mixed forests. |

Habit

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| **Code** | **1247** |
| **Title of the ITK** | **Herbal anthelmintic** |
| **Reference of the ITK*** | Volume 2, page 394 *Baibirrang,* |
| **Names of the plants used in ITK** | *palas* and *anar* |
| **Names in Indian languages** | ***Attar:*** Bengali: *dalim;* Gujarati: *dadam;* Hindi: *anar;* Malayalam: *matalam;* Marathi: *dalimba;* Tamil: *madulai;* Telugu: *danimma.* |
| **English name** | ***Anar:*** Pomegranate |
| **Botanical name** | ***Anar:*** *Punica granatum* Linn. |
| **Active ingredients** | ***Anar:*** The fresh juice is used as an ingredient of cooling and refrigerant mixture and of some medicine for dyspepsia. The rind is valued as an astringent in case of diarrhoea and dysentery. The expressed juice of the leaves and the young fruit and the decoction of bark are used in dysentery. The powdered flower buds are used in bronchitis. The seeds are considered to be stomachic and pulp cardiac and stomachic. |
| **Geographical indications** | ***Anar:*** A shrub or small tree, 5-10 m high, considered to be a native of Iran, Afghanistan and Baluchistan, found growing wild in the warm valleys and outer hills of the Himalayas between 900 and 1,800 m and cultivated throughout India. Bark smooth, dark grey; branchlets sometimes spiniscent; leaves 2.0-8.0 cm long, oblong or obovate, shining above; flowers usually scarlet red, sometimes yellow, 3.7-5.0 cm long and as much across, |

Habit Flower Fruit

mostly solitary or 2-4 together; fruits globose, crowded by persistent calyx, with a coriaceous woody rind and interior septate with membranous walls, containing numerous seeds, angular with a fleshy testa which is red, pink or whitish. It originated in south-west Asia, probably in Iran and some adjoining countries.

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| **Code** | **1261** |
| **Title of the ITK** | **Control of worm infestation in cattle and buffalo** |
| **Reference of the ITK*** | Volume 2, page 395 |
| **Names of the plants used in ITK** | Papaya and mustard |
| **Names in Indian languages** | *Papaya:* Bengali: *papeya, pappaiya;* Gujarati: *papayi, popaiyun;* Hindi: *papeeta;* Kannada: *parangimara;* Malayalam: *kappalam, kappanga, pappayam;* Marathi: *papaya;* Tamil: *pappali, pappayi;* Telugu: *boppayi.* |
| **English name** | ***Papaya:*** Papaw tree, papaya |
| **Botanical name** | ***Papaya:*** *Carica papaya* Linn. |
| **Active ingredients** | ***Papaya:*** Papaya fruit is highly prized for its nutritive and medicinal properties. Unripe fruit is consumed as a vegetable. The ripe fruit is a wholesome, mostly used as dessert. Nearly every part of the tree is of medicinal value. The unripe fruit is laxative and diuretic. The dried and salted fruit reduces enlarged spleen and liver. The salted skinned unripe fruit is bandaged over snakebite to remove poison. The unripe fruit possesses abortifacient activity. The ripe fruit is stomachic, digestive, carminative, galactagogue and diuretic. It is very effective in dysentery and chronic diarrhoea. Syrups and wines made from it are considered to be expectorant, sedative and tonic. The fruit is useful in bleeding piles and dyspepsia. It also removes urinary concretions, and is used in haemoptysis and wounds of urinary tract. |
| **Geographical indications** | *Papaya:* A fast-growing, short-lived, single-stemmed small tree, 2-10 m in height with a straight, cylindrical, soft, hollow grey trunk roughened by the presence of large leaf- and inflorescence-scars. Leaves alternate, crowded at the apex of the trunk forming a crown, long-petioled, glabrous, more or less deeply palmatifid; flowers fragrant, trimorphous, usually unisexual-dioecious, male flowers in lax many-flowered, densely pubescent cymes at the tips of the pendulous, fistular rachis; female flowers large, solitary or in few-flowered racemes, with a short thick rachis; fruit a large berry, varying widely in size, elongate to globose with a large central cavity; seeds black, tuberculous and enclosed in a transparent aril. Papaya |

Female and Male Plants

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has never been found wild, but it is probable that it originated in southern Mexico and Costa Rica. Papaya was introduced into India in the 16th century and was naturalised quickly.

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| **Code** | **1484** |
| **Title of the ITK** | **Use of leaves *ofbhant (Glycine max)* for checking worms in animals** |
| **Reference of the ITK*** | Volume 2, page 395 |
| **Name of the plant used in ITK** | *Bhant* |
| **Name in Indian languages** | Assamese: *patnijokra;* Bengali: *garjkalai;* Hindi: *bhat, bhatwar, bhetmas, ramkurthi.* |
| **English name** | Soyabean, soya, soja |
| **Botanical name** | *Glycine max* (L.) Merrill |
| **Active ingredients** | The seeds have been used for centuries as an article of food in China, Japan and Korea and constitute a valuable protein supplement to the rice diet. The seeds are consumed green, dry or sprouted, whole or split. Green seeds are used as vegetable, roasted and salted seeds are used in cakes and candies. The seeds are ground into flour and used for bakery products. They are also processed to give a milk-like product, curd or cheese, soybean is often cultivated as a pasture, forage or fodder crop and used either as hay or as silage. Soybean straw is relished by all kinds of livestock. |
| **Geographical indications** | An annual with erect or climbing stem, reaching a height of $1^1/_2$-6 ft, densely clothed with hairs; leaves trifoliolate, ovate-lanceolate, long-petioled; flower small, inconspicuous, borne on short axillary racemes, white or purple to reddish purple, normally self-pollinated; pods $1^1/_2$-2 in. long in clusters of 3-5, densely hairy, sub-torulose, containing 2-4 seeds: seeds elliptical with long hilum, compressed, yellow, chocolate or black. Soybean is a native of south-eastern Asia. It has been cultivated since long in north India, particularly in the hill tracts of Assam, Bengal, Manipur and Khasi and Naga hills, up to an elevation of 6,000 ft. It has been grown to some extent in Kumaon, Nepal, Bhutan and Sikkim. Attempts have been made from time to time to popularize soybean cultivation in different states, especially Kashmir, Punjab, U.P., Bihar, Orissa, Madhya Pradesh, Maharashtra, Tamil Nadu and Karnataka. |

Habit

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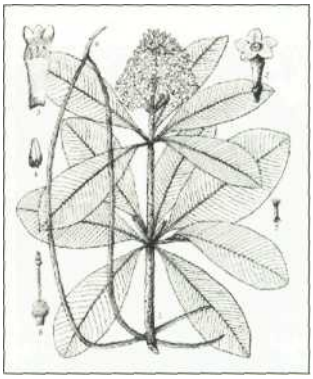
| **Code** | **1933** |
| **Title of the ITK** | **Use of different plants as antihelminthic drug** |
| **Reference of the ITK*** | Volume 2, page 397 |
| **Names of the plants used in ITK** | *Satvin, khazkuvali* and *haldi* |
| **Names in Indian languages** | ***Satvin:*** Assamese: *satiana, sattni;* Bengali: *chattim, chatwan;* Hindi: *chatium, saitan-ka-jhad;* Kannada: *jantaala-mara, janthalle, koodale, maddale, yedelebale;* Malayalam: *aarilampala, daivapaala, ezhilampala, koda-pala, mukampala;* Marathi: *saptaparni, satwin;* Oriya: *chhatiana, kumbaro, soptorposi;* Tamil: *ezhilaippalai, mukkam palai;* Telugu: *aedakularite-chettu, eda-kula, palagaruda*. |
| **English name** | ***Satvin:*** Devil's tree, dita-bark tree |
| **Botanical name** | ***Satvin:*** *Alstonia scholaris* R. Br. |
| **Active ingredients** | ***Satvin:*** The bark is regarded as a bitter tonic and is a mild febrifuge and possesses astrigent, anthelmintic and galactogogue propeties. It is reported to be employed in heart diseases, asthma, chronic diarrhoea and to stop bleeding of wounds. Bruised and boiled in oil with cotton seed, the bark is applied to the ear for deafness. The fresh bark juice with milk is stated to be administered in leprosy and dyspepsia. In Ayurvedic system, the drug is said to be useful in cancer-like conditions. |
| **Geographical indications** | ***Satvin:*** A large, buttressed, evergreen tree, 12-18 m in height, sometimes reaching up to 27 m, and 2.4 m in girth, with a straight bole of 12 m, found almost throughout India, up to an altitude of 600 m. Bark rough, grey-white, yellowish inside and exuding a bitter latex when injured; leaves 4-7 in a whorl, darkgreen above, pale and covered with a brownish bloom beneath; flowers greenish white or greenish yellow, in compact, umbellate cymes, fragrant; follicles 30-60 cm x 3 mm, in clusters, cylindric, with seeds possessing brown hair. |



Schematic representation

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| **Code** | **408** |
| **Title of the ITK** | **Use of root of *vaira* tree to control ticks and lice in buffalo** |
| **Reference of the ITK*** | Volume 2, page 398 |
| **Name of the plant used in ITK** | *Vaira* |
| **Names in Indian languages** | Hindi and Marathi: *warms, pullung;* Kannada: *becadi,* adwinuggi; Tamil: *baro-kala-goru;* Telugu: *bondgu, barukoligottu, kaligottu.* |
| **Botanical name** | *Heterophragma quadriloculare* (Roxb.) K. Schum. |
| **Active ingredients** | A thick fluid-like tar extracted from the wood is said to be used for skin diseases. |
| **Geographical indications** | A large tree with grey scaly bark, found in central India, Saurashtra, northern Circars and the western parts of the Deccan peninsula. Leaves 1-5 ft long, pinnate: leaflets ovate, shortly acuminate, entire or serrulate; flowers white or rose-coloured, fragrant, in terminal panicles; capsules slightly compressed, straight, 8-12 in. long. |

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| **Code** | **556** |
| **Title of the ITK** | **Control of ectoparasites in animals by a mixture *oipati {Artemisia nilagirica)* leaves and common salt in animals** |
| **Reference of the ITK*** | Volume 2, page 398 |
| **Name of the plant used in ITK** | *Pati* |
| **Names in Indian languages** | Hindi: *dona, majpatri, nagdona;* Kannada: *manjepatre;* Malayalam: *tirunitripacha;* Marathi: *dhordavana;* Oriya: *dayona, gondhomaro, nagodoyana;* Sanskrit: *barha, nagadamani;* Tamil: *machipattar, tirunirpachai;* Telugu: *davanamu, machipathri.* |
| **English name** | Indian wormwood |
| **Botanical name** | *Artemisia nilagirica* (C. B. Clarke) Pamp. |
| **Active ingredients** | The herb is considered to be emmenagogue, anthemintic and stomachic. The plant is also used as a febrifuge and as an inferior substitute for cincona in fevers. A weak decoction is given to children suffering from measles. Externally, it is used in fomentation given in skin diseases and ulcers. An infusion of the leaves and flowering tops is administered in nervous and spasmodic affections and |

asthma. The leaves are applied as haemostatic and to allay the burning sensation in conjuctivitis. The roots are used as tonic and antiseptic. The ashes are used as manure, and the compost prepared from this species is useful in controlling grubs of beetles. The plant is also employed to keep away fleas and other insects.

**Geographical indications**

A tall, aromatic, pubescent or villous shrub-like herb, found throughout the hilly regions of India, ascending to an altitude of 3,600 m in the western Himalayas and to 1,500-2,400 m in Sikkim and Khasi hills; it is also found in Mount Abu in Rajasthan, in the western ghats and from Konkan southwards to Kerala. Leaves large, ovate, lobed, laciniate or 1-2 pinnatipartite; flower heads small, ovoid or globose in panicled racemes.

Habit

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| **Code** | **818** |
| **Title of the ITK** | **Treatment of skin disease in animals** |
| **Reference of the ITK*** | Volume 2, page 398 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **542** |
| **Title of the ITK** | **Use of *belladonna (dolu)* for external application on wounds** |
| **Reference of the ITK*** | Volume 2, page 405 |
| **Name of the plant used in ITK** | *Belladonna (dolu)* Refer to ITK Code No. 1948 |

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| **Code** | **553** |
| **Title of the ITK** | **Treatment of worm-infested wounds in animals by *bajar-bhang (Physochlaina praealta)*** |
| **Reference of the ITK*** | Volume 2, page 405 |
| **Name of the plant used in ITK** | *Bajar-bhang* |

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| **Name in Indian languages** | Hindi: *bajar-bang.* |
| **Botanical name** | *Physochlaina praelta* (G Don). Miers |
| **Active ingredients** | The leaves of the plant are narcotic and possess properties causing dilatation of the pupil of the eye, as belladonna. The leaves are also said to be poisonous, the head and throat are affected when they are eaten and the mouth swells when touched by leaves. The leaves are applied to boils. Seeds are used by local people as vermifuge to expel roundworms, and as an emetic in bilious attack. |
| **Geographical indications** | An erect, nearly glabrous perennial herb, 60-150 cm high, found in Lahaul valley (Jammu & Kashmir), Ladakh, north Kashmir and western Tibet at altitudes of 3,300-4,650 m. Leaves irregular, ovate-oblong, wavy, flowers greenish, campanulate, in terminal corymbose cymes, capsules 2-celled, seeds many scrobiculate-reticulate. It grows wild and in abundance in Ladakh and Lahaul. |

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| **Code** | **1906** |
| **Title of the ITK** | **Drenching of animal with castor oil for control of *Ascaris*** |
| **Reference of the ITK*** | Volume 2, page 410 |
| **Name of the plant used in ITK** | Castor<br>Refer to ITK Code No. 1808 |

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| **Code** | **2189** |
| **Title of the ITK** | **Wound healing using *kakidonda* and uttarani** |
| **Reference of the ITK*** | Volume 2, page 411 |
| **Names of the plants used in ITK** | *Kakidonda* and *uttarani* |
| **Names in Indian languages** | ***Kakidonda:*** Bengali: *telakucha;* Gujarati: *ghobe, glum;* Hindi: *kunduri;* Kannada: *tondekai;* Marathi: *bimbi, tendli;* Sanskrit: *bimba;* Tamil: *kovaikai;* Telugu: *donda kaya.* |
| **English name** | ***Kakidonda:*** Ivy gourd |
| **Botanical name** | ***Kakidonda:*** *Coccinia indica* Wight & Arn. |
| **Active ingredients** | ***Kakidonda:*** The root, stem and leaves are used for the treatment of skin diseases, bronchial catarrh, bronchitis and diabetes. |

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| **Geographical indications** | ***Kakidonda:*** A climbing or prostrate perennial herb, growing wild throughout India, with long tuberous roots and ovoid or elliptic fruits, 1-2 in. long and $^{1}/_{2}$ -1 in diameter. The fruits are smooth and bright green with white stripes when immature, becoming bright scarlet when ripe. |
| **Code** | **263** |
| **Title of the ITK** | **Control of foot-and-mouth disease in cattle and buffalo** |
| **Reference of the ITK*** | Volume 2, page 415 |
| **Names of the plants used in ITK** | Wild cashew-nut and neem |
| **Names in Indian languages** | ***Wild cashewnut:*** Assamese: *bhala, bholaguti;* Bengali: *bhela, bhelatuki;* Gujarati: *Bhilamu;* Hindi and Punjabi: *bhela, bhilawa;* Kannada: *goddu geru, karigeru;* Malayalam: *chera;* Marathi: *bibha, bhilava;* Oriya: *balia, bhollia;* Tamil: *shenkottei, erimugi;* Telugu: *bhallatakijidi.* |
| **English name** | ***Wild cashewnut:*** Marking nut tree |
| **Botanical name** | ***Wild cashewnut:*** *Semecarpus anacardium* Linn. f. |
| **Active ingredients** | ***Wild cashewnut:*** The pericarp of fruit abounds in a black oily, bitter and highly vesicant juice which has been traditionally used for marking linen. Kernel oil is used as a food preservative against white ants. Extract of root shows hypoglycaemic activity when administered orally to experimental animals. |
| **Geographical indications** | ***Wild cashewnut:*** A moderate-size deciduous tree, reaching up to a height of 12-15 m and a girth of 1.25 m, found in the outer Himalayas from Satlej to Sikkim and fairly common throughout the hotter parts of India as far east as Assam. Bark dark brown, rough; leaves large, simple, 17.5-60.0 cm x 10.0-30.0 cm, obovate-oblong; flowers small, dull greenish-yellow, dioecious, in terminal panicles; drupes 2.5 cm long, obliquely ovoid, smooth and shining, black when ripe, situated on a fleshy orange-coloured receptacle. The tree is not found under cultivation but is common in forests often found occurring with *sal*. |

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| **Code** | **252** |
| **Title of the ITK** | **Ethno-veterinary practices in cattle** |
| **Reference of the ITK*** | Volume 2, page 429 |
| **Names of the plants used in ITK** | *Nilavembu, puilyarani, aloe, cissus, glycyrrhiza, adhathoda, datura,* pepper, ginger *amukala kilangu, scilla* and coconut |
| **Names in Indian languages** | ***Nilavembu**:* Bengali: *kalmegh;* Gujarati: *kariyatu;* Hindi: *kalmegh, kirayat, mahatita;* Kannada: *nelaberu;* Malayalam: *kiriyattu, nelaveppu;* Marathi: *olikiryata;* Oriya: *bhuinimba;* Sanskrit: *bhunimba, kirata;* Tamil: *nilavembu;* Telugu: *neelaveemu.*<br><br>***Puilyarani:*** Assamese: *changeritenga, tengeshitenga;* Bengali and Hindi: *amrul sak, chukka tripati;* Kannada: *hullchikkai, pullam purachi, uppinasoppu;* Malayalam: *puliyarel;* Marathi: *ambuti, anjati, bhinsarpati;* Tamil: *puliyarai;* Telugu: *pulichinta.*<br><br>***Aloe:*** Bengali and Sanskrit: *ghrita-kumari, kanya;* Gujarati: *kumarpathu, kunawar;* Hindi: *ghee-kanwar, ghi-kuvar;* Kannada: *kolasoare, komarika, maulisara;* Malayalam: *kattavazha;* Marathi: *korphad;* Oriya: *kumari, mushaboro;* Tamil: *bhottu-katrazhae, chirukattalai, kottaalai;* Telugu: *kalabanda.*<br><br>***Glycorrhiza:*** Bengali: *jashtimadhu, jaishbomodhu;* Gujarati: *jethi madhu;* Hindi: *mulhatti, jethi-madh;* Kannada: *yashti madhuka, atimadhura;* Malayalam: *iratimadhuram;* Marathi: *jeshta madhu;* Sanskrit: *madhuka, yashti-madhu;* Tamil: *atimaduram;* Telugu: *yashtimadhukam, atlmadhuramu.*<br><br>***Amukala kilangu:*** Bengali: *ashvaganda;* Gujarati: *ghodakun, ghoda, asoda, asan;* Hindi: *punir, asgandh;* Kannada: *viremaddlinagadde, pannaeru, aswagandhi, kiremallinagida;* Marathi: *askandaha tilli;* Sanskrit: *ashwagandha, turangi-gandha;* Tamil: *amukkura, amukkuram-kilangu, amulang-kalung* (root), *swagandhi;* Telugu: *pulivendram, panneru-gadda, panneru.* |
| **English name** | ***Nilavembu:*** Creat<br><br>***Puilyarani:*** Indian sorel<br><br>*Aloe:* Barbados aloe, Curacao aloe, Indian aloe, Jafarabad aloe |

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| | ***Glycyrrhiza:*** Liquorice |
| **Botanical name** | ***Nilavembu:*** *Andrographis paniculata* (Burin, f.) Wall, ex Nees |
| | ***Puilyarani:*** *Oxalis corniculata* **Linn.** |
| | **Aloe:** *Aloe vera* Tourn. ex Linn. |
| | ***Glycorrhiza:*** *Glycyrrhiza glabra* Linn. |
| | ***Amukala kilangu:*** *Withania somnifera* Dunal |
| **Active ingredients** | *Nilavembu:* The herb is a well known drug Kalmegh or green chiretta, and forms the principal ingredients of a reputed household medicine, used as a bitter tonic and febrifuge. The herb is reported to posses astringent, anodyne, tonic and alexipharmic properties, and is helpful in dysentery, cholera, diabetes, influenza, bronchitis, swelling and itches, piles and gonorrhoea. A decoction of the plant is a blood purifier. It is used as a cure for torpid liver and jaundice. It forms the major constituent of the Ayurvedic drug SG-I which is effective in treating vitiligo—a dermatological disease. The macerated leaves and juice together with some spice, such as cardamom, clove and cinnamom, are made into pills and prescribed for relief from gripe and other stomach ailments in infants. A decoction or infusion of the leaves is useful in general debility and dyspepsia. The leaves and roots are also used as febrifuge, tonic, stomachic, cholagogue and anthelmintic. A tincture of the root is tonic, stimulant and aperient. |
| | ***Puilyarani:*** The leaves of the plant are pleasantly acid and refreshing, and are eaten both raw as a salad and cooked as a pot -herb; they are also used for making sandwiches and pickles. Leaves are a good source of vitamin C and carotene; they are rich in calcium. The leaves and stem contain tartaric acid and citric acid; stems contain malic acid. The plant possesses astringent, vermifuge, emmenagogue and antiseptic properties. Fresh juice of the plant cures dyspepsia, piles and tympanitis. |
| | ***Aloe****:* Barbados aloe is in considerable demand because of its medicinal and other virtues. It can be easily cultivated in almost all parts of India, even under constant drought conditions. The leaf juice forms an important constituent of a large number of Ayurvedic preparations. It is also used in veterinary medicine. |

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***Glycorrhiza****:* It is a principle source of liquorice, which is tonic, expectorant, demulcent and mildly laxative. It is used for allaying coughs and catarrhal affections. It is also useful in irritable conditions of the mucous membrane of urinary organ.

***Amukala kilangu:*** The neuropharmological activity is accredited to the acetone-soluble fraction of the total alkaloids. The total alkaloid shows relaxant and anti-spasmodic effect against several spasmogens on intestinal uterine, bronchia, tracheal and blood vascular muscles. It is useful in the treatment of inflammatory condition, ulcers and scabies when applied locally. The leaves contain withaferin, which has curative properties. It has antibiotic and anti-tumour activities. Withaferin exhibits anti-inflammatory activities. The green berries are bruished and rubbed on ringworm in human being, on animal sores and girth galls in horses.

## Geographical indications

***Nilavembu:*** An erect annual herb, chiefly found in the plains throughout India from Himachal Pradesh to Assam and Mizoram, and all over south India. Stem dark green, 0.3-1.0 m in height, 2-6 mm in diameter, quadrangular with longitudinal furrows and wings on the angles of the younger parts, slightly enlarged at the nodes; leaves glabrous, up to 8.0 cm long and 2.5 cm broad, lanceolate, pinnate; flowers small in lax spreading axillary and terminal racemes or panicles; capsules linear-oblong, acute at both ends, 1.9 cm x 0.3 cm; seeds numerous, sub-quadrate, yellowish brown.

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***Puilyarani:*** *A* small annual or perennial, procumbent or more or less erect herb, 6-25 cm high, found throughout the warmer parts of India ascending up to an altitude of 3,000 m in north-west Himalayas. Leaves few, palmetely 3-foliolate: seeds dark brown, numerous, broadly ovoid, transversely striate. It is a very common weed in cultivated and fallow lands, gardens and waste lands, particularly in moist and shady localities.

Flowering branch

Habit

Twig

***Aloe:*** *A* coarse-looking perennial plant with a short stem, found in a semi-wild state in many parts of the country. Leaves 30-60 cm long, erect, crowded in a basal rosette, full of juice, glaucous-green, narrow-lanceolate, long-acuminate, smooth except for the spiny teeth on the margins; scape longer than leaves, scaly, branched; flowers yellow, in dense racemes terminating the scapes.

Leaves

***Glycorrhiza:*** It is hardy herb or undershrub attaining a height up to 6 ft; leaves multifoholate, imparipinnate; flowers in axillary spikes, papilionaceous, lavender to violet in colour; pods compressed, containing reniform seeds.

***Amukala kilangu:*** An erect, evergreen, tomentose shrub, 30-150 cm high, found throughout the drier parts of India in waste places and on bunds. Roots stout, fleshy, whitish brown; leaves simple, ovate, glabrous, those in the floral region smaller and opposite; flowers inconspicuous, greenish or lucrid-yellow, in axillary, umbellate cymes; berries small, globose, orange-red when mature, enclosed in persistent calyx; seeds yellow, reniform.

**Code** **254**

**Title of the ITK** **Cure of animal diseases**

**Reference of the ITK*** Volume 2, page 430

**Names of the plants used in ITK** *Aristolochia indica, Holarrhena, Andrographis, Clerodendrum inerme, Clerodendrum phlomoides, Delonix,* horsegram, *Ficus,* cumin, onion, *Citrullus, Solarium, tulsi, Aristolochia bracteata* and *Terminalia*

**Names in Indian languages** ***Aristolochia indica:*** Bengali and Hindi: *isarmul, isharmul;* Gujarati: *arkamul, nirvel, sapasan;* Kannada: *eashwari-beru;* Malayalam: *ishwaramulli, karalakam;* Marathi: *kadula, sampsum, sapashi;* Oriya: *gopakaroni;* Sanskrit: *arkamula, isvari;* Tamil: *garuda-kkodi, paerumkizhangu;* Telugu: *dulagooda, govila, nallaeswari;* Urdu: *shapesand.*

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| | ***Clerodendrum inerme:*** Gujarati and Marathi: *bharungi;* Hindi: *lanjai, sangkupi;* Kannada and Telugu: *gantubarangi;* Malayalam: *cherutekku, kankabharnni;* Sanskrit: *kundali, vanajai;* Tamil: *angaravalli.* |
| | ***Clerodendrum phlomides****:* Gujarati, Hindi and Marathi: *ami;* Kannada: *taggi;* Malayalam: *tirutali;* Sanskrit: *agnimantha, agnimanthini;* Tamil: *takkari, taludalai;* Telugu: *takkolamu.* |
| | **Horsegram:** Bengali: *kurtikalai;* Gujarat: *kalathi, kulit;* Hindi: *kulthi;* Kannada: *hurali;* Malayalam: *muthiva, muthera;* Marathi: *kulith, kulthi;* Sanskrit: *kulaththa;* Tamil: *kollu;* Telugu: *ulavalu.* |
| | ***Ficus:*** Bengali: *pakar, pakur;* Gujarati: *pepri;* Hindi: *kahimal, kaim, keol;* Kannada: *basari, juvvi, kari-basari;* Malayalam: *bakri, chakkila, chela;* Marathi: *bassari, dhedumbara, gandhaumbara; Tamil: jovi, kallal, kurugatti, suvi;* Telugu: *Badijuvvi, jati.* |
| | ***Solatium:*** Bengali: *kantakari;* Gujarati: *bhoyaringani;* Hindi: *kateli, katai;* Malayalam & Tamil: *kandankattiri;* Marathi: *bhuiringani;* Oriya: *bheji begun, ankranti;* Sanskrit: *kantakari, nidigadhika;* Telugu: *pinnamulaka, nelamulaka, vankuda.* |
| | ***Aristolochia bracteata:*** Gujarati: *kidamari;* Hindi: *bhringi, gandan, kiramar;* Kannada: *kattackirubanagida;* Malayalam: *aduthinnapala, karalakam;* Oriya: *paniri; hukka-vel, jufa;* Sanskrit: *dhumapatra;* Tamil: *aaduthinnapalai;* Telugu: *gadugagudupa.* |
| **English name** | ***Aristolochia indica:*** Indian Birthwort |
| | **Horsegram:** Horsegram |
| | ***Solanum:*** Yellow-berried nightshade |
| | ***Aristolochia bracteata:*** Bracteated birthwort |
| **Botanical name** | ***Aristolochia indica:*** *Aristolochia indica* Linn. |
| | ***Clerodendrum inerme:*** *Clerodendrum inerme* (Linn.) Gaertn. |
| | ***Clerodendrum phlomoides****: Clerodendrum phlomoidis* Linn. f. |
| | **Horsegram:** *Dolichos biflorus* Linn. |

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***Ficus:*** *Ficus infectoria* Roxb.

***Solanum:*** *Solarium surattense* Burm. f.

***Aristolochia bracteata:*** *Aristolochia bracteolata* Lam.

**Active ingredients** : ***Aristolochia indica:*** The dried roots and rhizomes of *A. indica* constitute an important drug, much esteemed as a gastric stimulant and bitter tonic. The roots contain a small amount of fixed oil, Aristolochic acid. The chief active principle of the drug is aristolochic acid, though aristolic and /7-coumaric acids also appear to contribute to the activities of the drug.

***Clerodendrum inerme:*** The leaves are mucilaginous, bitter and fragrant, and their medicinal properties resemble those of chiretta. Fresh and dry leaves possess alterative and febrifugal properties. A poulfice of the leave is used to resolve buboes. A liniment useful in rheumatism is obtained by boiling the root in oil.

***Clerodendrum phlomoides****:* Root is aromatic and astringent and its decoction is used as a demulcent in gonorrhoea. It is also used as a bitter tonic. The juice of leaves is useful as an alterative.

***Horsegram:*** Horsegram is extensively used in south India as feed for cattle and horses in the same way as gram is used in north India. Stems, leaves and split husk are also used as cattle feed. The seeds are astringent, diuretic and tonic.

***Ficus:*** The tree is one of the recorded host of the Indian lac insect. Young shoots are eaten in curries. A decoction of the bark is used as a gargle and as a wash for ulcers. The wood and bark are reported to be suitable for paper pulp.

***Solanum:*** Root is expectorant, forming an ingredient of a well-known Ayurvedic medicine, Casamula. It is employed in cough, asthma, paining chest, being used in the form of a decoction. Seem, flowers and fruits are bitter and carminative. The juice of berry are used in sore throat. The plant is credited with diuretic properties and is used to cure dropsy. The juice of the leaves, mixed with black pepper is prescribed in rheumatism. Solasonine is present in fruit, the glyco-alkaloid content of fruits is collected from plants. Both glyco-alkaloid and fatty acid fractions of the extract cause liberation of histamine from chopped lungs tissue.

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The beneficial effect of the drug on bronchial asthma may be attributed to the depletion of stamin from the bronchial and lung tissues. Extract of whole plant shows anti-viral activity against Ranikhet disease virus and also sarcoma-180 in the mice.

***Aristolochia bracteata:*** The plant occurs as a weed in black soils. It is reported to be poisonous to man and stock. It possesses insecticidal or insect-repellant properties due to the presence of aristolochic acid. The plant is reputed in indigenous medicine for its bitter, purgative and anthelmintic properties. The root is reported to be used as a substitute of *A. indica*. The taproot of *A. bracteolata* is gradually tapering and sinuous, particularly in the upper regions, and bears many branch-roots and numerous fibrous rootlets. Its external surface has a few transverse cracks in the bark, which is brown in colour. The root has no characteristic odour but has a nauseously bitter taste. It has short and splintery fracture. The root powder exhibits a violet fluorescence in ultra-violet light particularly when mounted in nitrocellulose. The roots contain aristolochic acid. The root decoction is employed to expel roundworms. It is reputed as an emmenagogue and is administered as a dry powder or infusion to increase uterine contractions but in laboratory trials has failed to exihibit this activity. It is also esteemed as an abortifacient but pharmacological trials do not corroborate this claim. The bruised leaves mixed with castor oil are applied externally in eczema. They are also applied to navels of children in colic and also given internally with castor oil.

**Geographical indications** **:** ***Aristolochia indica:*** Aperennial climber with greenish white woody stems found growing throughout India in the plains and low hills. Leaves glabrous, very variable, usually obovate-oblong to sub-pandurate, entire with somewhat undulate margins, somewhat cordate, acuminate; flowers few, in axillary racemes, perianth up to 4 cm long with a glabrous pale-green inflated and lobed base, narrowed into a cylindric tube terminating in a horizontal funnel-shaped purple mouth and lip clothed with purple-tinged hair; capsules oblong or globose-oblong, 3-5 cm long; seeds flat, ovate, winged. The plant occurs all over India especially in the tropical and sub-tropical regions.

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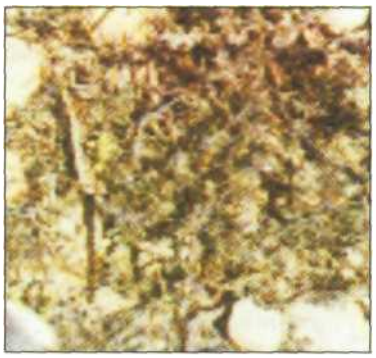
*Solanum*

***Clerodendrum inerme:*** A straggling shrub occurring abundantly near the coastal region of India and Sri Lanka. Leaves mucilaginous, bitter and fragrant.

***Clerodendrum phlomoides:*** A large shrub occurring in many parts of India.

**Horsegram:** A branched sub-erect or trailing annual, with small trifoliate leaves, bearing, when mature, narrow, flat, curved pods, $1^{1}/_{2}$-2 in. long, tipped with a persistent style. The pods contain 5-6 flattened, ellipsoid seeds, $^{1}/_{8}$-$^{1}/_{4}$ in. long. The plant is a native of India and is distributed throughout the tropical regions of the Old World. It occurs all over India up to an altitude of 5,000 ft. It is an important pulse crop particularly in Karnataka, Maharashtra and Andhra Pradesh.

*Ficus:* A large spreading tree, epiphytic in early stages, sometimes sending down a few aerial roots; leaves membraneous, 4-5 in. long, ovate or ovate-oblong, shortly acuminate with entire or subundulate margins; fruits in axillary pairs, usually sessile, sub-globose, white when ripe or flushed with red and dotted. It is found nearly throughout India, and is commonly planted as an avenue and ornamental tree. In south India, it is considered a good shade tree for coffee, the fallen leaves supplying a heavy mulch.



***Solanum:*** A very spiny diffuse herb up to 1.2 m tall, commonly found throughout India. Leaves ovate or elliptic, sinuate or sub-pinnatifid, spines 1 cm long, straight; flowers blue in lateral cymes, berries globose 1.2-2 cm in diameter, glabrous yellow or whitish and green blotched; seeds glabrous.

***Aristolochia bracteolata:*** A slender, decumbent, glabrous perennial with 30-45 cm long stems, and seriate branches, occurring in hedges in the plains of northern India from Haryana and Uttar Pradesh southwards to peninsular India up to Maharashtra and Andhra Pradesh. Leaves very variable in size and shape, reniform or broadly ovate, usually widely and shallowly cordate at base, crenulate, undulate or entire, long-petioled (up to 3 cm long); flowers solitary, perianth 2.5-5.0 cm long with sub-globose base, tube cylindrical with trumpet-shaped mouth and linear, dark purple lip, glandular, hairy within; capsules oblong-ellipsoid, 12-ribbed, glabrous; seeds deltoid with cordate base, rugose-black on one side and whitish on the other, compressed.

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| **Code** | **257** |
| **Title of the ITK** | **Ethno-veterinary practices in cattle** |
| **Reference of the ITK*** | Volume 2, page 432 |
| **Names of the plants used in ITK** | *Ptychotis, Albizia, Cardiospermum, Bryonia, Aloe* and *Grewia* |
| **Names in Indian languages** | ***Albizia:*** Gujarati: *moto sarasio;* Kannada: *chigare;* Malayalam: *varacchi;* Marathi: *lallei;* Sanskrit: *krishnasirisha;* Tamil: *wunja;* Telugu: *nalla renga.*<br><br>***Cardiospermum:*** Assamese: *kopalphuta;* Bengali: *lataphatkari, nayaphatki, sibjhul;* Gujarati: *kagdoliyo, karolio;* Hindi: *kanphuti;* Kannada: *agniballe, bekkinabuddigida, kakaralata;* Malayalam: *jyotishmati, katabhi, paluruvan, uzhinja;* Marathi: *kanphuti, kapala-phodi;* Sanskrit: *jyotishmati, kamasphota, paravatanghi, sakralata;* Tamil: *moedakottan, samuttiram;* Telugu: *buddakaakaraeega, tapaakaayateega.*<br><br>***Bryonia:*** Hindi: *shivlingi.* |
| **English name** | *Cardiospermum:* Balloon vine, blister creeper, heart pea, heartseed, winter cherry |
| **Botanical name** | ***Albizia:*** *Albizia amara* Boiv.<br><br>***Cardiospermum:*** *Cardiospermum halicacabum* Linn.<br><br>***Bryonia:*** *Bryonia laciniosa* Linn.<br><br>***Grewia:*** *Grewia flavescens* Juss. |
| **Active ingredients** | *Albizia:* The wood is heavy, straight-grained and medium-textured. Sapwood is white and heartwood light brown, often with a purplish cast mottled with dark and light shades. The wood is used for tool handles, mallett heads and agricultural implements. It is commonly used for carving and turnery. The tree yields a good gum which is cooling, and useful in erysipelas, eye diseases, inflammation and ulcers. The leaves are used in ophthalmia and as hair wash, and also as adulterant for tea. The flowers are considered a cooling medicine and are externally applied to boils, eruptions and swellings. In southern Kerala it is grown chiefly as green-manure for rice, and as an avenue tree. The seeds yield a dark yellow fixed oil. The seeds are astringent, and given in piles, diarrhoea and gonorrhoea. The oil from the seeds is said to cure leprosy and |

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leucoderma. The leaves, bark and wood are reported to contain a methyl ester of a fatty acid and a triterpene saponin. The presence of 6-sitosterol is reported in the bark and wood.

***Cardiospermum:*** The herb is diuretic, stomachic and rubefacient. It is used in rheumatism, lumbago, nervous diseases, as a demulcent in orchitis and in dropsy. In Punjab the seeds are used as a tonic in fevers and as a diaphoretic. Powder of the seeds is reportedly used for the treatment of cancer. The seeds yield a pale yellow, fixed oil, with the taste of cucurbitaceous oils. The seeds also yield an essential oil.

***Bryonia:*** In Ayurveda the plant is hot, pungent and alterative; Leaves good for inflammations. The plant possesses bryonin.

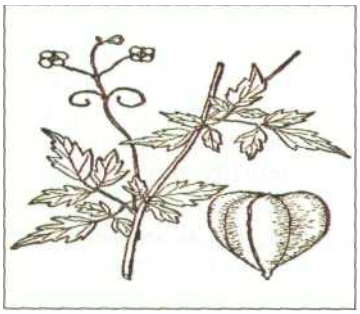
***Grewia:*** It is used for fodder. The flattened angular branches are used for making baskets. The drupe is edible.

## Geographical indications

***Albizia****: A* moderate-sized, much branched, unarmed, deciduous tree distributed in the drier regions of south India and in a few localities in Madhya Pradesh. Bole crooked, up to 3.0 m in height and 0.6-0.9 m in girth; branchlets densely pubescent, leaflets 15-30 pairs, membranous with a gland between the lowest pair; flowers yellow, fragrant, in peduncled heads; pods 10-15 cm long, reddish brown.

Habit

***Cardiospermum:*** An annual or sometimes perennial climber, 3.5 m in height, commonly found as a weed throughout India, ascending up to 1,200 m. Leaves deltoid, biternate, 3-8 cm long, leaflets deeply cut, acuminate, laterals oblong or ovate, terminal rhomboid-lanceolate; flowers white, in umbellate cymes, with a pair of peduncles modified into tendrils; capsules depressed-pyriform, covered with bladder like calyx, winged at the angles; seeds globose, black, smooth, 4-6 mm, with a small, white, heart-shaped aril.



Schematic representation

***Bryonia:*** An annual slender herb; leaves palmately 5-lobed, scabrous above, smooth beneath, margin denticulate; peduncle (in male flowers); calyx tube 2-4 x 3-6 mm, lobes spreading; corolla greenish-yellow, shortly papillose, lobes ovate, acute; female flowers fasciculate; fruits spherical, yellowish-green, six striped; seeds grey, belted, attenuate with raised projections on both faces.

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| | ***Grewia:*** It is a shrub or a small tree found in Rajasthan, upper Gangetic plains, Bihar and central and southern India. |
| **Code** | **259** |
| **Title of the ITK** | **Ethno-veterinary practices for animal digestive problem** |
| **Reference of the ITK*** | Volume 2, page 433 |
| **Names of the plants used in ITK** | *Kandankathri, chothu katralai, siru thumbai, kuppai meni, pirandai, kollanhovakizhangu, puliam pirandai, moongil, viraali, avarmkolai, veeli* and *poovarasu* |
| **Names in Indian languages** | ***Kollanhovakizhangu:*** Hindi: *akasgaddah, rakasgaddah;* Kannada: *akashagarudagadde;* Malayalam: *kollanhova-kizhauna;* Marathi: *akash garudand;* Sanskrit: *patalagaruda;* Tamil: *akasha garundan;* Telugu: *naga donda.*<br><br>***Avarmkolai:*** Gujarati: *aval;* Hindi: *awal, larval;* Kannada: *avarike, ollethangadi;* Malayalam: *avara, aviram, ponnaviram;* Marathi: *arsual, taravada;* Sanskrit: *avartaki, hemapushpam, mayahari;* Tamil: *avaram, semmalai;* Telugu: *merakatangeedu, tangeedu.*<br><br>*Veeli:* gujarati: *kalokattiyo, khordu;* Hindi: *dabi, kodhab;* Kannada: *chegaviche;* Malayalam: *kattakatti;* Marathi: *kalitaka, kalitakai,* Tamil: *kattagatti, vilivi, villi;* Telugu: *adamorinika, chavukuttivaaku, chemoorda.* |
| **English name** | ***Avarmkolai:*** Tanner's cassia, tanner's senna<br><br>***Veeli:*** Indian cadaba |
| **Botanical name** | ***Kollanhovakizhangu:*** *Corallocarpus epigaeus* Benth. ex Hook.f.<br><br>***Avarmkolai:*** *Cassia auriculata* Linn.<br><br>***Veeli:*** *Cadaba fruticosa* (Linn.) Druce |
| **Active ingredients** | ***Kollanhovakizhangu:*** The root has a bitter and sub-acid taste and is credited with alterative and laxative properties and is used in syphilitic rheumatism, later stage of dysentery and chronic mucous enteritis. It is made into liniment with cumin seeds, onion and castor oil and used externally in chronic rheumatism. The root contains the bitter principle allied to bryonine.<br><br>***Avarmkolai:*** The leaves are used as green-manure in paddy-fields, as they contain a high percentage of nitrogen and |

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potasium. They are also valuable for manuring alkaline lands and for reclamation of soils. The twigs are valued as tooth-picks and tooth-brushes. The pods are anthelmintic, emetic and useful in urinary discharges. The roots are considered astringent, alexeteric and useful in thirst, urinary discharges, skin diseases and asthma. A decoction of the roots is used as a tonic. The roots show interferon-like activity against Ranikhet disease virus. The bark and roots are reported to have been utilized in tempering iron and steel. The flowers are astringent and used in throat troubles and urinary disorders.

***Veeli**:* Its roots and leaves are anthelmintic and deobstruent and are prescribed as decoction in uterine obstructions. The leaves are also used as poultice for sores.

**Geographical indications**

***Kollanhovakizhangu:*** It is a tendril-bearing, climbing herb, distributed in tropical Africa, Persian Gulf region and India. The root of this species, which occurs in many parts of India, is yellowish white, marked externally with circular rings.

***Avarmkolai:*** A fast-growing, profusely branched, tall, evergreen shrub, generally 1.2-3.0 m in height, sometimes reaching a height of 6.0 m, found in the dry zones of southern, western and central India extending up to Rajasthan in the north; also cultivated in some parts of Punjab, Haryana, Uttar Pradesh and West Bengal, and often planted in gardens for ornament and as hedges. Bark reddish brown, smooth; leaves 7-10 cm, with large, auricled or rotundo-reniform, foliaceous stipules; leaflets 7-9 pairs, with an orange, erect, gland between each pair of leaflets, slightly aromatic, oblong-obovate, obtuse or emarginate, 1.5-2.5 cm x 0.9-1.2 cm; flowers yellow, in compound, terminal, corymbose racemes; pods pale brown, oblong, 5-15 cm x 1.2-1.8 cm, flat, papery, flexible; seeds, compressed, tapering towards the base, 6-12.

***Veeli**:* A straggling, much-branched, wiry, hoary shrub, commonly found throughout the drier parts of India. Bark brown, rough, lenticellate, fibrous; leaves 2.5-3.0 cm long, ovate-oblong or ovate, acute; flowers dirty-white in corymbose racemes; capsules cylindric, glabrous or pubescent, dehiscent, irregularly torulose; seeds black, striate, reniform-rotundate or comma-shaped, compressed, embedded in yellowish orange or red aril.

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| **Code** | **260** |
| **Title of the ITK** | **Treatments for animal diseases** |
| **Reference of the ITK*** | Volume 2, page 433 |
| **Names of the plants used in ITK** | *Pattai, Aloe, kasakasa, aavaram, siriyanangai, periyanangai, kasippatai,* cumin, *vizhudhi,* banana, *avuri, kungiliyapaspam, sangam, sandamarudham, pavazha paspam* and *Strychnos* |
| **Names in Indian languages** | ***Avuri:*** Bengali and Hindi: *nil;* Gujarati: *gali, gari, nil;* Kannada, Marathi & Tamil: *nili;* Malayalam: *nilam;* Sanskrit: *nilla, nili, nilika, rangapatri;* Telugu: *aviri, nili.* |
| **English name** | ***Avuri:*** Common indigo, Indian indigo |
| **Botanical name** | ***Avuri:*** *Indigofera tinctoria* Linn. |
| **Active ingredients** | ***Avuri:*** An extract of plant is used in epilapsy and in nervous disorders. The plant is used also in bronchitis and as an ointment for sore, old ulcer and haemorrhoids. The juice of leaves is used for hydrophobia. The Mundas of Chhotanagpur use the roots for urinary complaints. |
| **Geographical indications** | ***Avuri:*** A shrub 4—6 ft high, found nearly throughout India, mainly as an escape from cultivation. Leaves 1-3 in. long, with 9-13 leaflets; flowers red; pods glabrescent, slightly curved or straight, $^{3}/_{4}$-l in. long. It is considered to be of Asian in origin, though it has been recorded as occurring wild in Africa. It was being cultivated in India, China and other countries of the east as the source of indigo, but was replaced first by I. *sumatrana* and later by I. *arrecta.* |

Twig

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| **Code** | **264** |
| **Title of the ITK** | **Ethno-veterinary practices in cattle** |
| **Reference of the ITK*** | Volume 2, page 434 |
| **Names of the plants used in ITK** | *Vettukayapoondu,* gingelly, *Calotropis, pirandai, kuppaimeni, palampasi, kollankovai kizhangu, manamurukki* and *boomi vanangi* |

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**Names in Indian languages**

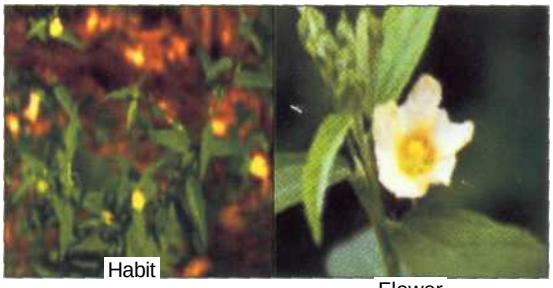
***Palampasi:*** Assamese: *boriala;* Bengali: *pila-barelashihar, sweet berela;* Gujarati: *balajungli-methi, bala dungaraubal;* Hindi: *bariara, kareta, kharenta;* Kannada: *cheruparuva, maltanni;* Marathi: *Tupkaria, tukati, chikana, pata;* Oriya: *ancharna, siobola, sunakhodika;* Tamil: *vattatirippi, malaitangi, mayir-manikham, pazhampassi, ariva-mooku kelrai, pon musuttai, kayapunalu;* Telugu: *neelabenda, visha boddi, chitimutti, mutuvapulagam.*

**Botanical name**

***Palampasi:*** *Sida acuta* Burm. f.

**Active ingredients**

***Palampasi:*** It has demulcent and diuretic properties. Leaf juice is given for relief in chest pain and as an anthelmintic. It is useful in nervous and urinary diseases, disorders of blood and bile, and in chronic bowel complaints.




**Geographical indications : *Palampasi:*** An erect, perennial shrub 1.5 m high, distributed throughout the hotter parts of India. Bark smooth, greenish, root thin, long, cylindrical, very rough, contorted, leaves lanceolate, linear lanceolate, obovate-lanceolate or lanceolate-oblong, glabrous, flowers yellow, solitary or in pairs, seeds smooth, black.

**Code** **2508**

**Title of the ITK** **Use of dried stems of *vasambu {Acorus calamus)* for dehorning in cattle**

**Reference of the ITK*** Volume 2, supplement I, page 101

**Name of the plant used in ITK** *Vasambu*

Refer to ITK Code No. 138

**Code** **2567**

**Title of the ITK** **Use of extract of snake-gourd *(Trichosanthus cucumerina)* with amalgam to cure white spot in eye of animals**

**Reference of the ITK*** Volume 2, supplement I, page 101

**Name of the plant used in ITK** Snakegourd

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| **Names in Indian languages** | Bengali: *banpatol;* Gujarati: *kadwam-parwal;* Hindi: *jangli-chachinda;* Kannada: *bettada-padawala;* Malayalam: *pepatolam;* Marathi: *ranacha padawal;* Sanskrit: *amritaphala, kashtbhanjan;* Tamil: *paeypuda;* Telugu: *chetipotla.* |
| **English name** | Snake-gourd |
| **Botanical name** | *Trichosanthes cucumerina* Linn. |
| **Active ingredients** | The root is used as a cure for bronchitis, headache and boils. The leaves are used in biliousness; their juice is emetic. The seeds are considered antifebrile and anthelmintic. Seed extracts possess haemagglutinating activity. |
| **Geographical indications** | It is an extensive, dioecious, annual climber, found throughout India. |

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| **Code** | 2303 |
| **Title of the ITK** | **Use of tobacco or *Calotropis* leaf juice to flow out foreign material from eye to animal** |
| **Reference of the ITK*** | Volume 2, supplement I, page 102 |
| **Name of the plant used in ITK** | Tobacco and *Calotropis* |
| ***Tobacco Calotropis*** | Refer to ITK Code No. 139 |
| | Refer to ITK Code No. 474 |

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| **Code** | 2303 |
| **Title of the ITK** | **Use of leaf juice of *Calotropis* to cure eye diseases in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 103 |
| **Name of the plant used in ITK** | *Calotropis* |
| ***Calotropis*** | Refer to ITK Code No. 474 |

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| **Code** | **2506** |
| **Title of the ITK** | **Use of *Leucas aspera* leaves to cure lesions of foot-and-mouth disease** |
| **Reference of the ITK*** | Volume 2, supplement I, page 104 |
| **Name of the plant used in ITK** | *Leucas aspera* |
| | Refer to ITK Code No. 126 (a) |

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| **Code** | **:** | **2514** |
| **Title of the ITK** | **:** | **Use of pig fat and green banana to treat foot-and-mouth disease** |
| **Reference of the ITK*** | : | Volume 2, supplement **I,** page 104 |
| **Name of the plant used in ITK** | : | Banana<br>Refer to ITK Code No. 1192 |

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| **Code** | **2543** |
| **Title of the ITK** | **Use of neem-seed kernel and cinnamon for foot-and-mouth disease** |
| **Reference of the ITK*** | Volume 2, supplement I, page 104 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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| **Code** | **2577** |
| **Title of the ITK** | **Use of *khand* for spinal cord diseases and bronchitis in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 107 |
| **Name of the plant used in ITK** | *Khand* (Acorus calamus)<br>Refer to ITK Code No. 138 |

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| **Code** | **:** | **2591** |
| **Title of the ITK** | : | **Use of *nagphani (Cuscuta reflexa)* stem pulp, garlic, turmeric, *Cuscuta loranthus* stem, and roots of *talmakhana* to cure the *langri* disease of animals** |
| **Reference of the ITK*** | : | Volume 2, supplement **I,** page 107 |
| **Names of the plants used in ITK** | : | *Nagphani*, garlic and turmeric |
| **Names in Indian languages** | **:** | ***Nagphani:*** *Akash bel*<br>**Garlic:** Refer to ITK Code No. 1116<br>**Turmeric:** Refer to ITK Code No. 481 |
| **Botanical name** | : | ***Nagphani:*** *Cuscuta reflexa* Roxb |

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**Active ingredients**

Habit

*Nagphani:* The plant is purgative and is used internally in protracted fever, retention of wind and indurations of liver. It is applied externally for itch; a decoction of plant is used as a wash for stones. The seeds are alterative and are used in purgative preparation. A cold infusion is given as a depurative. The seeds contain pigment amrbelin. The seeds are said to be tonic, diaphoretic and demulscent.

**Geographical indications**

*Nagphani: A* parasitic climber, common throughout India and Sri Lanka up to an altitude of 8,000 ft. sometimes completely covering bushes and trees.

**Code** **2635**

**Title of the ITK** **Use of decoction made from** *mehandi,* **roots of** *talmakhana,* **bark of palm tree and stem *of*** *amerbel (Cassythafiliformis)* **to cure the dewlop pain**

**Reference of the ITK*** Volume 2, supplement I, page 108

**Names of the plants used in ITK** *Mehandi* and *amerbel*

**Names in Indian languages** ***Mehandi:*** Refer to ITK Code No. 1655

*Amerbel* Bengali: *akasbel;* Hindi: *amarbeli;* Kannada: *akasa balli;* Malayalam: *akasavalli, moodillathali;* Marathi: *amarvela;* Sanskrit: *akasha valli;* Tamil: *erumaikkottan;* Telugu: *nulu tega.*

**English name** ***Amerbel.*** Dodder-laurel, love-vine

**Botanical name** ***Amerbel****: Cassythafiliformis* Linn.

**Active ingredients** ***Amerbel****:* The plant is used for seasoning buttermilk in south India. The plant is reputed in the indigenous system of medicine as an astrigent and diuretic. It is given in biliousness and chronic dysentery A decoction of the plant prevents haemoptysis. The plant possesses piscicidal and insecticidal properties and is used to wash hair and kill vermin.

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| **Geographical indications** | ***Amerbel:*** A herbaceous, parasitic, leafless twiner met throughout the greater part of India, especially along the sea-coast. Stem yellowish green, slender, forming a web of leafless cords; flowers small, white, in lax or dense lateral spikes; drupes black, globose, enclosed in fleshy perianth lobes. |
| **Code** | **2496** |
| **Title of the ITK** | **Use *of Albizia lebbeck* buds for treatment of foot-finger rot in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 110 |
| **Name of the plant used in ITK** | *Albizia lebbeck*<br>Refer to ITK Code No. 494 |
| **Code** | **2512** |
| **Title of the ITK** | **Use of *chenthil (Tinospora cordifolia)* leaves for treatment of mastitis** |
| **Reference of the ITK*** | Volume 2, supplement I, page 111 |
| **Name of the plant used in ITK** | *Chenthil* |
| **Names in Indian languages** | Bengali: *golancha;* Gujarati: *gulvel;* Hindi: *amrita, giloe, gulancha, gulbel, guloh, gurcha, jiwantika;* Kannada: *amrutcballi, madhuparne, uganiballi;* Malayalam: *amrytu, chittamritam;* Marathi: *gulvel;* Oriya: *gulochi;* Sanskrit: *amrita, guluchi, jwarari;* Tamil: *amudam, chindil;* Telugu: *tippateege*. |
| **English name** | Gulancha tinospora |
| **Botanical name** | *Tinospora cordifolia* (Willd.) Miers ex Hook. f. & Thorns. |
| **Active ingredients** | It is mentioned in Ayurvedic literature as a constituent of several compound preparations, used in general debility, dyspepsia, fevers and urinary diseases. Anti-viral property against Ranikhet disease in poultry has also been ascribed to this climber. The dry stem, with bark intact, constitutes the drug. The bitter principle present in the drug shows anti-periodic, anti-spasmodic, anti-inflammatory and anti-pyretic properties. Alcoholic extract of the stem shows activity against *Escherichia coli.* A decoction of leaves is |

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used for the treatment of goat and young leaves, bruished in milk, are used as a liniment in erysipelas. Dried and powdered fruit mixed with ghee or honey is used as a tonic and also in the treatment of jaundice and rheumatism. Root is a powerful emetic and is used for visceral obstructions.

**Geographical indications**

A large glabrous, deciduous climbing shrub found throughout tropical India, ascending to an altitude of 300 m. Stems rather succulent with long filiform fleshy aerial roots from the branches. Bark grey-brown or creamy white, warty; leaves membranous, cordate with a broad sinus; flowers small, yellow or greenish yellow, appearing when the plant is leafless, in axillary and terminal racemes or racemose panicles; male flowers clustered and females usually solitary; drupes ovoid, glossy, succulent, red, pea-sized; seeds curved.

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**Code**

**2539**

**Title of the ITK**

**Use of *mayurchulia (Elephantopus scaber)* in treatment of bone fracture in animals**

**Reference of the ITK***

Volume 2, supplement I, page 112

**Name of the plant used in ITK**

*Mayurchulia*

**Names in Indian languages**

Bengali: *gojialata, shamdulum;* Gujarati: *bhopathari;* Hindi: *gobhi, samudulam;* Kannada: *hakkarike;* Malayalam and Tamil: *anashovadi;* Marathi: *pathari;* Sanskrit: *gojihva, karipadam;* Telugu: *hastikasaka.*

**Botanical name**

*Elephantopus scaber* Linn**.**

**Active ingredients**

Bruised leaves boiled in coconut oil are applied to ulcers and eczema. A decoction of roots and leaves is used as emollient and is given in dysuria, diarrhoea, dysentery and swellings or pains in the stomach. The root is given to arrest vomiting; powdered with pepper it is applied in toothache.

**Geographical indications**

A rigid herb with large, obovate-oblong, radical leaves forming a rosette and numerous clusters of flower-heads. It is found throughout the hotter parts of India.

Habit

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| **Code** | **2535** |
| **Title of the ITK** | **Treatment for fracture of animal bone by *methi* seed *(Trigonella foenum-graecum)*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 112 |
| **Name of the plant used in ITK** | *Methi*<br>Refer to ITK Code No. 741 |

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| **Code** | **2570** |
| **Title of the ITK** | **Use of hot mustard oil to cure dropping switch of tail of animal** |
| **Reference of the ITK*** | Volume 2, supplement I, page 112 |
| **Name of the plant used in ITK** | Mustard<br>Refer to ITK Code No. 48**1** |

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| **Code** | **2622** |
| **Title of the ITK** | **Use of mustard oil to treat the loss of hair from cattle tail** |
| **Reference of the ITK*** | Volume 2, supplement I, page 113 |
| **Name of the plant used in ITK** | Mustard<br>Refer to ITK Code No. 48**1** |

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| **Code** | **2636** |
| **Title of the ITK** | **Use of *aak* leaves to control *afara* disease in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 114 |
| **Name of the plant used in ITK** | *Calotropis*<br>Refer to ITK Code No. 474 |

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| **Code** | **2603** |
| **Title of the ITK** | **Use of wheat soup for curing bloat *(afara)* in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 115 |
| **Name of the plant used in ITK** | Wheat<br>Refer to ITK Code No. 1217 |

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| **Code** | **:** | **2556** |
| **Title of the ITK** | **:** | **Use of *draink (Melia azadirach)* leaves for curing bloat in animals** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 115 |
| **Name of the plant used in ITK** | : | *Draink*<br>Refer to ITK Code No. 2305 (d) |

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| **Code** | **2498** |
| **Title of the ITK** | **Treatment of stomach problem in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 117 |
| **Name of the plant used in ITK** | **Nutmeg**, onion, tobacco and thymol |
| **Names in Indian languages** | **Nutmeg:** Bengali, Gujarati, Hindi and Marathi: ya/p/ia/ (fruit kernel), *japatri*, *jotri*, *jayapatri* (aril); Kannada, Malayalam, Tamil and Telugu: *jajikai*, *jadikai* (fruit kernel), *jadipattiri*, *japatri* (aril).<br>**Onion:** Refer to ITK Code No.689<br>**Tobacco:** Refer to ITK No. 139 |
| **English name** | **Nutmeg:** Nutmeg tree |
| **Botanical name** | **Nutmeg:** *Myristicafragrans* Houtt. |
| **Active ingredients** | *Nutmeg:* The percentage of volatile oil in nutmeg varies from 6 to 16%. Nutmeg is stimulant, carminative, astringent and aphrodisiac. It is used in tonic and electuaries and forms a constituent of preparation prescribed for dysentery, stomachache, flatulence, nausea, vomiting, malaria, rheumatisms, sciatica and early stage of leprosy. |
| **Geographical indications** | ***Nutmeg****:* A dioecious or occasionally monoecious evergreen, aromatic tree, usually 9-12 m high, but sometimes reaching a height 20 m or more. Bark grayish black, longitudinally fissured in old trees; leaves elliptic or oblong-lanceolate, coriaceous; flowers in umbellate cymes, creamy yellow, fragrant; fruits yellow, broadly pyriform or globose, 6-9 cm long, glabrous, often drooping: pericarp fleshy, 1.25 cm thick, splitting into 2 halves at maturity; seed broadly ovoid, arillate, albuminous, with a shell-like purplish brown testa; aril red, fleshy, laciniate. It is a native of Moluccas, now cultivated in many tropical countries of both hemispheres. In India it is grown in Tamil Nadu state (Nilgiris, Coimbatore, Salem, Ramanathapuram, Tirunel-veli, Kanyakumari and Madurai districts); a few trees are found in various localities of Karela, Assam and other states. |

Habit

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| **Code** | : | **2555** |
| **Title of the ITK** | : | **Feeding of mango pickle for relieving animals from stomach pain** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 119 |
| **Name of the plant used in ITK** | : | Mango<br>Refer to ITK Code No. 1871 |

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| **Code** | **2634** |
| **Title of the ITK** | **Use of solution *oipalas* seeds for deworming in calving animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 119 |
| **Name of the plant used in ITK** | *Palas*<br>Refer to ITK Code No. 1383 |

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| **Code** | **2583** |
| **Title of the ITK** | **Use of solution *of amaltas* seeds and jaggery for deworming in calf** |
| **Reference of the ITK*** | Volume 2, supplement I, page 119 |
| **Name of the plant used in ITK** | *Amaltas*<br>Refer to ITK Code No. 784 |

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| **Code** | **2547** |
| **Title of the ITK** | **Control of worm infestation in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 121 |
| **Name of the plant used in ITK** | Papaya<br>Refer to ITK Code No. 1261 |

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| **Code** | **2546** |
| **Title of the ITK** | **Use of banana flower to heal intestinal ulcer** |
| **Reference of the ITK*** | Volume 2, supplement I, page 122 |
| **Name of the plant used in ITK** | Banana<br>Refer to ITK Code No. 1192 |

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| **Code** | **2604** |
| **Title of the ITK** | **Use of lentil for curing *tilli* disease in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 122 |
| **Name of the plant used in ITK** | Lentil<br>Refer to ITK Code No. 1955 |

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| **Code** | **2527** |
| **Title of the ITK** | **Use of asafoetida and betel leaf for treatment of acidosis** |
| **Reference of the ITK*** | Volume 2, supplement I, page 123 |
| **Name of the plant used in ITK** | Asafoetida<br>Refer to ITK Code No. 702 |

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| **Code** | **2526** |
| **Title of the ITK** | **Use of leaves of *Abrus precatorius*, cumin seeds and coconut inflorescence to treat blood in urine of cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 123 |
| **Names of the plant used in ITK** | *Abrus*, cumin and coconut<br>***Abrus:*** Refer to ITK Code No. 80<br>**Cumin:** Refer to **ITK** Code **No.** 827<br>**Coconut:** Refer to ITK Code No. 240 |

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|---|---|
| **Code** | **2624** |
| **Title of the ITK** | **Use of *bhang (Cannabis* sp.) to cure shievering problem in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 125 |
| **Name of the plant used in ITK** | *Bhang*<br>Refer to ITK Code No. 1479 |

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|---|---|
| **Code** | **2573** |
| **Title of the ITK** | **Utilization of neem *{Azadirachta indica)* leaves with mustard oil to cure cold and fever** |
| **Reference of the ITK*** | Volume 2, supplement I, page 125 |
| **Names of the plants used in ITK** | Neem and mustard<br>**Neem:** Refer to ITK Code No. 151<br>**Mustard:** Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **2590** |
| **Title of the ITK** | **Use of extract of *bakaine (Melia azadirach)* with lobnan and mustard oil to treat cold and severe fever in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 126 |
| **Names of the plants used in ITK** | *Bakaine* and mustard<br>***Bakaine:*** Refer to ITK Code No. 2305 (d)<br>***Mustard:*** Refer to ITK Code No. 481 |

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| **Code** | **2536** |
| **Title of the ITK** | **Use of cumin seeds and young leaves of guava for treatment of diarrhoea** |
| **Reference of the ITK*** | Volume 2, supplement I, page 131 |
| **Names of the plants used in ITK** | Cumin and guava<br>**Cumin:** Refer to ITK Code No. 827<br>**Guava:** Refer to ITK Code No. 1470 |

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|---|---|
| **Code** | **2528** |
| **Title of the ITK** | **Curing dysentery of goats by using bamboo leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, page 131-132 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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|---|---|
| **Code** | 2303 |
| **Title of the ITK** | **Use of *Cassia torn* flower extract to control diarrhoea in goats** |
| **Reference of the ITK*** | Volume 2, supplement **I,** page 132 |
| **Name of the plant used in ITK** | *Cassia tora*<br>Refer to ITK Code No. 1967 |

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|---|---|
| **Code** | **2303** |
| **Title of the ITK** | **Use of bamboo-leaf juice to control diarrhoea in animals** |
| **Reference of the ITK*** | Volume 2, supplement I**,** page 132 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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| **Code** | 2303 |
| **Title of the ITK** | **Use of tamarind fruit juice for the control of diarrhoea in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 133 |
| **Name of the plant used in ITK** | Tamarind |
| | Refer to ITK Code No. 125 (a) |

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|---|---|
| **Code** | **2553** |
| **Title of the ITK** | **Use of *'itsit* weed plant for curing *HIM* (jaundice) in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 134 |
| **Name of the plant used in ITK** | *Itsit* |
| | Refer to ITK Code No. 2211 |

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|---|---|
| **Code** | **2515** |
| **Title of the ITK** | **Use of moringa *{Moringa oleifera)* leaves for treatment of tympany in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 136 |
| **Name of the plant used in ITK** | Moringa |
| **Names in Indian languages** | Assamese: *saijna, sohjna;* Bengali: *shjina;* Gujarati: *midhosaragavo, saragavo;* Hindi: *mungna, sainjna, shajna;* Kannada: *nugge;* Malayalam: *murinna, sigru, moringa;* Marathi: *achajhada, shevgi;* Oriya: *sajina;* Punjabi: *sainjna, soanjna;* Sanskrit: *shobhanjana;* Tamil: *murungai;* Telugu: *mulaga, munaga, tellamunaga.* |
| **English name** | Drumstick tree, horse radish tree |
| **Botanical name** | *Moringa oleifera* Lam. |
| **Active ingredients** | All parts of the tree are considered medicinal and used in the treatment of ascites, rheumatism, venomous bites and as cardiac and circulatory stimulants. The root of the young tree and also root bark are rubefacient and vasicant. The leaves are rich in vitamins A and C, and are considered useful in scurvy and catarrh affection. They are also used as emetic. A paste of leaves is used as an external application for wounds. Flowers are used as tonic, diuretic and cholagogue. The seeds are considered antipyretic, acrid and bitter. The seed oil is applied in reumatism in gout. |

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**Geographical indications**

Twig

A small or medium-sized tree, about 10 m high, found wild in sub-Himalayan tract, from Chenab eastwards to Sarda, and cultivated all over the plains of India. Bark thick, soft, corky, deely fissured: young parts tomentose; leaves usually tri-pinnate: leaflets elliptic; flowers white, fragrant, in large panicles; pods pendulous, greenish, 22.5-50.0 cm or more in length, triangular, ribbed; seeds trigonous with wings on angles. The tree is indigenous to north-west India.

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| **Code** | **2581** |
| **Title of the ITK** | **Treatment of wound worms in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 139 |
| **Name of the plant used in ITK** | Peach |
| **Names in Indian languages** | Hindi; *Aru, shaftalu* |
| **English name** | Peach, nectarine |
| **Botanical name** | *Prunus persica* Batsch |
| **Active ingredients** | The seeds, flowers, leave and bark have the odour and taste of bitter almonds, and on hydrolysis yield hydrocyanic acid. The leaves yield a volatile oil upon distillation and the distillation water prepared from the leaves contains 0.04 - 0.14% of hydrocyanic acid. The leaves also contain a tannin-like substance (8%), quercitin, kaempferol, caffeica acid and /5-coumaric acid. The leaves are said to be laxative and were formerly used as an anthelmintic. An infusion of leaves or bark is given in coughs, especially whooping cough. The leaves and blossoms as well as the kernels are poisonous. Peach flowers are stated to be purgative and anthelmintic. |

**Geographical indications**

A small tree up to 8 m high, with glabrous twigs; leaves oblong to broad lanceolate, serrate, glabrous; flowers solitary, pink; fruits subglobose, 5-7 cm across, fleshy, with a hard and deeply potted stone. Grown in most parts of the temperature zones; the major producer is U.S.A and other important producers are Italy, France and Spain in Europe, China and Japan in Asia, Argentina in south America, Australia and South Africa. In India, peaches are grown in Kashmir, Himachal Pradesh, sub-montane tracts of Punjab and Uttar Pradesh, and to a limited extent in the Nilgiris.

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| **Code** | **: 2601** |
| **Title of the ITK** | **: Use of turmeric for curing injury in animals** |
| **Reference of the ITK*** | : Volume 2, supplement I, page 140 : |
| **Name of the plant used in ITK** | Turmeric |
| | Refer to ITK Code No. 481 |

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|---|---|
| **Code** | **2654** |
| **Title of the ITK** | **Treatment of wounds and parasitic infestation in domestic animals with peach leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, pages 141-142 |
| **Name of the plant used in ITK** | Peach |
| | Refer to ITK Code No. 2581 |

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|---|---|
| **Code** | **2651** |
| **Title of the ITK** | **Treatment of maggoted wound by using peach leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, page 142 |
| **Name of the plant used in ITK** | Peach |
| | Refer to ITK Code No. 2581 |

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|---|---|
| **Code** | **2610** |
| **Title of the ITK** | **Control of ticks in animal** |
| **Reference of the ITK*** | Volume 2, supplement I, page 144 |
| **Name of the plant used in ITK** | Tobacco |
| | Refer to ITK Code No. 139 |

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|---|---|
| **Code** | **2587** |
| **Title of the ITK** | **Use of deodar oil for cure of animals infested with ticks** |
| **Reference of the ITK*** | Volume 2, supplement I**,** page 144 |
| **Name of the plant used in ITK** | Deodar |
| | Refer to ITK Code No. 697 |

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| **Code** | **2551** |
| **Title of the ITK** | **Use of onion for controlling ticks in animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 145 |
| **Name of the plant used in ITK** | Onion |
| | Refer to ITK Code No. 689 |

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|---|---|
| **Code** | **2572** |
| **Title of the ITK** | **Use of germinated wheat seeds to bring cows and buffaloes in heat** |
| **Reference of the ITK*** | Volume 2, supplement I, page 146 |
| **Name of the plant used in ITK** | Wheat |
| | Refer to ITK Code No. 1217 |

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|---|---|
| **Code** | **2505** |
| **Title of the ITK** | **Use of *sottru katahlai {Aloe vera)* for conception in dairy cows** |
| **Reference of the ITK*** | Volume 2, supplement I, page 148 |
| **Name of the plant used in ITK** | *Sottru katahlai* |
| | Refer to ITK Code No. 252 |

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|---|---|
| **Code** | **2537** |
| **Title of the ITK** | **Use of leaves of *bhindi {Abelmoscus esculentus)* for removing retained placenta** |
| **Reference of the ITK*** | Volume 2, supplement I, page 148 |
| **Name of the plant used in ITK** | *Bhindi* |
| **Names in Indian languages** | Bengali: *dheras;* Gujarati: *bhinda;* Hindi: *bhindi, bhindi tori, ramturai;* Kannada: *bhende;* Malayalam: *venda;* Marathi: *bhendi;* Tamil: *vendai;* Telugu: *bendi, venda.* |
| **English name** | Gumbo, Lady's finger, okra *Abelmoschus* |
| **Botanical name** | *esculentus* (Linn.) Moench |
| **Active ingredients** | It contains volatile oil and gum or mucilage. Immature pods are emollient, demulcent and diuretic. The leaves are applied externally as emollient poultice. The seeds are stimulant, cordial and antispasmodic. |

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**Geographical indications** : An annual, erect herb, 0.9-2.1 m in height, covered with hair, cultivated as a garden crop or a mixed field crop throughout India. Leaves cordate, palmately 3-5 lobed, coarsely toothed; flowers yellow with a crimson centre; capsules also called pods, 12.5-30.0 cm long, pyramidal, oblong (horn-like), green or creamy green, with longitudinal ridges, smooth or hairy; seeds many, rounded, striate, hairy. The plant is considered to be of African or Asian origin.

Habit

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| **Code** | **2593** |
| **Title of the ITK** | **Expulsion of placenta in rural area** |
| **Reference of the ITK*** | Volume 2, supplement I, page 150 *Gular*, |
| **Names of the plants used in ITK** | bamboo and sugarcane<br>***Gular:*** Refer to ITK Code No. 1579<br>***Bamboo****:* Refer to ITK Code No. 1583<br>***Sugarcane****:* Refer to ITK Code No. 1886 |

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| **Code** | **2502** |
| **Title of the ITK** | **Method of easy expulsion of placenta in cow** |
| **Reference of the ITK*** | Volume 2, supplement I, page 150 |
| **Name of the plant used in ITK** | Jackfruit<br>Refer to ITK Code No. 474 |

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| **Code** | **2643** |
| **Title of the ITK** | **Fresh sugarcane shoot for expulsion of retained placenta in cow** |
| **Reference of the ITK*** | Volume 2, supplement I, pages 151-152 |
| **Name of the plant used in ITK** | Sugarcane<br>Refer to ITK Code No. 1886 |

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| **Code** | **2626** |
| **Title of the ITK** | **Use of *siblingi* as anti-abortive agent in cattle** |
| **Reference of the ITK*** | Volume 2, supplement I, page 152 |
| **Name of the plant used in ITK** | *Siblingi*<br>Refer to ITK Code No. 257 |

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|---|---|
| **Code** | **2524** |
| **Title of the ITK** | **Use of *shatawar {Asparagus racimosus)* with milk yield of sick animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 153 |
| **Name of the plant used in ITK** | *Shatawar*<br>Refer to ITK Code No. 1233 |

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| **Code** | **2562** |
| **Title of the ITK** | **Increasing milk production in animals with *salan mishri*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 155 |
| **Name of the plant used in ITK** | *Salan mishri* Solomon's seal |
| **English name** | *Polygonatum multiflorum* All. |
| **Botanical name** | |
| **Active ingredients** | The rhizomes possess astringent, demulcent and tonic properties. Glucoside and chelidonic acids have been reported to be present in the plant. The plant is considered diuretic. |
| **Geographical indications** | A perennial herb, 60-90 cm high, found in western Himalayas from Kashmir to Kumaun at altitudes of 1,800-2,700 m and in Manipur. Rhizomes horizontal, with scars of annual stems; leaves oblong-ovate; flowers white, in whirls, berry blue-black, seeds few. |

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| **Code** | **:** | **2559** |
| **Title of the ITK** | **:** | **Use of deodar oil to check various ailments or diseases in animals** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 158 |
| **Name of the plant used in ITK** | : | Deodar |
| | | Refer to ITK Code No. 697 |

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|---|---|
| **Code** | **2531** |
| **Title of the ITK** | **Feeding cattle with *mahua {Madhuca latifolia)* for providing strength and nutrients to milch animals** |
| **Reference of the ITK*** | Volume 2, supplement I, page 161 |
| **Name of the plant used in ITK** | *Mahua* |
| | Refer to ITK Code No. 1389 |

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|---|---|
| **Code** | **2549** |
| **Title of the ITK** | **Use of garlic *(Allium sativum)* to cure Ranikhet disease in poultry birds** |
| **Reference of the ITK*** | Volume 2, supplement I, page 166 |
| **Name of the plant used in ITK** | Garlic |
| | Refer to ITK Code No. 1116 |

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|---|---|
| **Code** | **2598** |
| **Title of the ITK** | **Use of garlic for curing Ranikhet disease in poultry** |
| **Reference of the ITK*** | Volume 2, supplement I, page 166 |
| **Name of the plant used in ITK** | Garlic |
| | Refer to ITK Code No. 1116 |

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# FISHERIES

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| **Code** | **1296** |
| **Title of the ITK** | **Use of asafoetida *(hing)* in the supplementary diet of Indian major carps and common carps** |
| **Reference of the ITK*** | Volume 2, page 501 |
| **Name of the plant used in ITK** | *Hing*<br>Refer to ITK Code No. 702 |

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| **Code** | **423** |
| **Title of the ITK** | ***Mahua* seed oil cake as a pesticide in pisciculture** |
| **Reference of the ITK*** | Volume 2, page 503 |
| **Name of the plant used in ITK** | *Mahua*<br>Refer to ITK Code No. 1389 |

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|---|---|
| **Code** | **424** |
| **Title of the ITK** | **Use of banana pseudostem in fish pond** |
| **Reference of the ITK*** | Volume 2, page 503 |
| **Name of the plant used in ITK** | Banana<br>Refer to ITK Code No. 1192 |

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| **Code** | **1295** |
| **Title of the ITK** | **Use of ash dust and neem cake for treatment of EUS disease in fishes** |
| **Reference of the ITK*** | Volume 2, page 503 |
| **Name of the plant used in ITK** | Neem<br>Refer to ITK Code No. 151 |

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|---|---|
| **Code** | **2211** |
| **Title of the ITK** | **A herbal extract containing *Boerhavia diffusa* to treat dropsy disease in fish** |
| **Reference of the ITK*** | Volume 2, page 503 |
| **Name of the plant used in ITK** | *Boerhavia diffusa* |

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**Names in Indian languages**

Bengali: *gadhapurna, punarnaba, raktapunarnaba;* Gujarati: *satodi;* Hindi: *biskhafra, sant;* Kannada: *balavadikae, gajjeru;* Malayalam: *thumizhazhma, titudamma;* Marathi: *raktavasu, tambadivasu;* Oriya: *ghodapuruni;* Sanskrit: *punarnavam, rakta punarnava, shotagni;* Tamil: *mukku-rattai keerai;* Telugu: *atikamamidi, giligeru, yerragalijeru;* Urdu: *bashkhira.*

**English name**

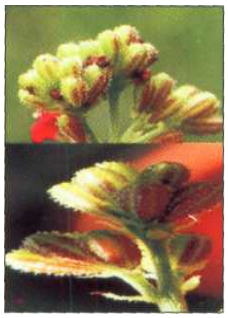
Spreading hogweed

**Botanical name**

*Boerhavia diffusa* Linn.

**Active ingredients**

Pharmacological studies have demonstrated that *punarnava* possesses diuretic and anti-inflammatory activities, maximum activity being present in samples collected in the rainy season. It is particularly useful as a maintenance drug. It is effective in cases of oedema and ascites resulting from early cirrhosis of the liver and chronic peritonitis. The plant is reported to be efficaceous in abdominal tumours and cancer. It is also credited with anti-bacterial and cardiotonic properties. An anti-viral agent, active against spherical and tubular viruses, was isolated from the roots, including systemic resistance in plants. The herb including the roots is eaten as a vegetable in curries and soups. The roots and seeds are added to cereal, pancakes and other food. They also serve as a bird feed. The herb is relished by sheep and goats and in West Bengal is given to milch cows to improve the yield of milk.



Habit

**Geographical indications**

A very variable, diffusely branched, pubescent or glabrous, prostrate herb, abundantly occurring as a weed throughout India, up to an altitude of 2,000 m in the Himalayas. It is also cultivated to some extent in West Bengal. Rootstock stout, fusiform, woody; stems creeping, often purplish, swollen at the nodes, up to 1.2 m long; leaves long-petioled, ovate or oblong-cordate, entire or sinuate, usually whitish and smooth beneath and rough green on upper surface; flowers red, pink or white, in small umbels arranged in axillary and terminal panicles; fruits ovate, oblong, pubescent, five-ribbed, viscid, glandular anthocarps.

Habit

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|---|---|
| **Code** | **418** |
| **Title of the ITK** | **Indigenous fishing net** |
| **Reference of the ITK*** | Volume 2, page 504 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 359 |

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|---|---|
| **Code** | 420 |
| **Title of the ITK** | **Using earthworm and wheat flour dough as bait for handline fishing** |
| **Reference of the ITK*** | Volume 2, page 504 |
| **Name of the plant used in ITK** | Wheat<br>Refer to ITK Code No. 1217 |

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| **Code** | **1616** |
| **Title of the ITK** | **Use of custard apple *(Annona squamosa)* leaves for fish harvesting** |
| **Reference of the ITK*** | Volume 2, page 506 |
| **Name of the plant used in ITK** | Custard apple<br>Refer to ITK Code No. 1387 |

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| **Code** | **1298** |
| **Title of the ITK** | **Method of preserving fish of different species** |
| **Reference of the ITK*** | Volume 2, page 507 |
| **Names of the plants used in ITK** | Lime and turmeric<br>**Lime:** Refer to ITK Code No. 474<br>**Turmeric:** Refer to ITK Code No. 481 |

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| **Code** | **2659** |
| **Title of the ITK** | **Enhancing fish growth by application of banana stem** |
| **Reference of the ITK*** | Volume 2, supplement I, page 168 |
| **Name of the plant used in ITK** | Banana<br>Refer to ITK Code No. 1192 |

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| **Code** | **:** | **2660** |
| **Title of the ITK** | **:** | **Application of *mahua* or *karanja* oilcake for easy netting offish** |
| **Reference of the ITK*** | : | Volume 2, supplement I**,** page 169 |
| **Names of the plants used in ITK** | : | *Mahua* and *karanja*<br>***Mahua:*** Refer to ITK Code No. 1389<br>***Karanja:*** Refer to ITK Code No. 1376 |

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| **Code** | 2707 |
| **Title of the ITK** | **Relief of pain due to extraction of thorn from any part of the body** |
| **Reference of the ITK*** | Volume 2, supplement I, page 170 |
| **Name of the plant used in ITK** | *Kanta banso*<br>Refer to ITK Code No. 359 |

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|---|---|
| **Code** | **2714** |
| **Title of the ITK** | **Use of *baigab (Jatropha gossypifolia)* twigs to relieve toothache** |
| **Reference of the ITK*** | Volume 2, supplement I, page 170 |
| **Name of the plant used in ITK** | *Baigab* |
| **Names in Indian languages** | Assamese: *bhotera;* Bengali: *lalbherebda;* Hindi: *bherenda, verenda;* Tamil: *atalai;* Telugu: *nela-amida.* |
| **Botanical name** | *Jatropha gossypifolia* Linn. |
| **Active ingredients** | The dried stem bark of the plant contains an intensely bitter amorphous alkaloid, jatrophine. The ether extract of the shoots shows antibiotic activity against *Staphylococcus aureus* and *Escherichia coli.* The extract of plant possesses insecticidal properties. Tender leaves contain a pentose glycoside of cyanidin. The roots are employed against leprosy; they are also reported to be used as an antidote for snake bite. The plant is used for urinary problems. A decoction of the bark is used as an emmenagogue; that of the leaves for stomach ache, veneral diseases and as a blood purifier. The leaves are also applied to carbuncles, eczema and itches. The leaf juice is applied for sores. The latex is applied for ulcers. The seed oil is used in lamps and also for leprosy. |
| **Geographical indications** | A bushy gregarious shrub, 0.9-1.8 m in height, native to Brazil, but naturalised almost throughout India. Leaves palmetely 3-5-lobed, 20 cm long and equally wide, at first brown, shining, later turning green: margins of leaves, petiole and leaf blade covered with glandular hairs; flowers dark red, crimson or purplish, in glandular corymbose cymes; capsules, 9 mm long, 3-lobed, truncate at both ends; seeds greyish red with a caruncle. |

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| **Code** | **2713** |
| **Title of the ITK** | **Use of latex of stem of *dimri (Ficus hispida)* to relieve toothache** |
| **Reference of the ITK*** | Volume 2, supplement I, page 170 |
| **Name of the plant used in ITK** | *Dimri* |
| **Names in Indian languages** | Bengali: *dumoor, kakodumar;* Gujarati: *dhedaumaro, jangliangir;* Hindi: *daduri; dagurin, gobla, kagsha, katgularia;* Kannada: *adavi atti, kadatti;* Malayalam: *erumanakku, peyatti;* Marathi: *bhokada, bokria, kalaumber, kharoti;* Tamil: *peyatti, sonatti;* Telugu: *bodamamidi, brammadi.* |
| **Botanical name** | *Ficus hispida* Linn. f. |
| **Active ingredients** | Immature fruits eaten in curries, they are, however, likely to cause giddiness. They are considered tonic, lactagogue and emetic. The wood is soft and lights, and bark contains tannin. The leaves are used for poulticing boils. Leaves and twigs of the tree are lopped for cattle and elephant fodder. |
| **Geographical indications** | A moderate-sized tree or shrub with large opposite leaves, 4-12 in. long, and obovoid or turbinate fruits, 1 in. long, borne in pairs or clusters on leafless, often trailing, branchlets. The tree is common throughout the outer Himalayas from Chenab river eastwards to Bengal, central and south India, and Andaman Islands. It occurs in shaddy places and along ravines, and flowers and fruits practically throughout the year. |

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| **Code** | **2712** |
| **Title of the ITK** | **Use of *balibhainso (Flacourtia ramantchi)* shrub juice to control dysentery** |
| **Reference of the ITK*** | Volume 2, supplement I, page 170 |
| **Name of the plant used in ITK** | *Balibhainso* |

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| **Names in Indian languages** | Bengali: *benchi, baichi, binja, katai;* Gujarati: *kankod;* Hindi: *bilangra, kanju;* Kannada: *hattarimullu, hunmunki;* Marathi: *bhekal, kaker, paker;* Tamil: *katukala, sottaikala;* Telugu: *kandregu* |
| **English name** | Governor's plum, Madagascar plum |
| **Botanical name** | *Flacourtia ramantchi* L'Herit. |
| **Active ingredients** | The fruits are appetising and digestive. They are given in jaundice and enlarged spleen. The bark is considered astringent and diuretic. |
| **Geographical indications** | A small deciduous tree or shrub, usually thorny; leaves variable in size and shape; fruit globose, 8-12 mm in diameter, dark purple or red with juicy pulp surrounding several small seeds. It is a native of tropical Africa and Asia. It is found in the sub-Himalayan tract and the outer Himalayas up to 4,000 ft, both in sal forests and in dry miscellaneous forests. It is common throughout Chhotanagpur, Deccan and south India in mixed deciduous forests. |

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| **Code** | **2711** |
| **Title of the ITK** | **Use of *aak {Calotropis gigantea)* for cure of sterility** |
| **Reference of the ITK*** | Volume 2, supplement I, page 170 |
| **Name of the plant used in ITK** | *Aak*<br>Refer to ITK Code No. 474 |

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| **Code** | **2673** |
| **Title of the ITK** | **Use of walnut leaves and barks for teeth and gum** |
| **Reference of the ITK*** | Volume 2, supplement I, page 171 |
| **Name of the plant used in ITK** | Walnut<br>Refer to ITK Code No. 753 |

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| **Code** | **2670** |
| **Title of the ITK** | **Use of bamboo leaves for treatment of pyrrhoea** |
| **Reference of the ITK*** | Volume 2, supplement I, page 171 |
| **Name of the plant used in ITK** | Bamboo<br>Refer to ITK Code No. 1583 |

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| **Code** | **2709** |
| **Title of the ITK** | **Driving away mosquito by using *bherua (Chloroxylon swietenia)* leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, page 171 |
| **Name of the plant used in ITK** | *Bherua*<br>Refer to ITK Code No. 149 |

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|---|---|
| **Code** | **2708** |
| **Title of the ITK** | **Treatment of cough *with jhau (Tamarix ericoides)*** |
| **Reference of the ITK*** | Volume 2, supplement I, page 172 |
| **Name of the plant used in ITK** | *Jhau* |
| **Names in Indian languages** | Gujarati: *gajri;* Hindi: *jhau* |
| **Botanical name** | *Tamarix ericoides* Rottl. |
| **Active ingredients** | The leaves are cooked with rice and given to children to relieve cough. A decoction of the leaves is given for treating enlarged spleen. The galls are astringent. |
| **Geographical indications** | A handsome shrub, with erect, broom-like branches and dark-brown, vertically cleft bark, found mostly in the riverbeds in south India, extending northwards into Chottanagpur. Leaves minute, scale-like, ovate-lanceolate; flowers pink, in terminal racemes; capsules dull-yellowish white; seeds small with dirty-white hair. |


Flower

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| **Code** | **2685** |
| **Title of the ITK** | **Treatment of stomach pain with *Xylosma longifolium*** |
| **Reference of the ITK*** | Volume 2, supplement I, page **1**72 |
| **Name of the plant used in ITK** | *Xylosma longifolium* |
| **Names in Indian languages** | Assamese: *mota koli, kata holi, katahar;* Hindi: *dandal, katari, kandhara, katpatra, sialu.* |

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**Botanical name** : *Xylosma longifolium* Clos

**Active ingredients** : An extract of the young and tender leaves resembles opium in action and is used with it in Assam.

**Geographical indications** : A dioecious evergreen tree, up to 18 m tall and 2 m in girth, commonly found in shady ravines of the western Himalayas up to an altitude of 1,500 m. Leaves linear or elliptic or oblong-lanceolate, acuminate, bluntly serrate; torns axillary, up to 5 cm long; flowers yellow, scented, both male and female flowers in axillary, clustered racemes; berries deep-red or black, globose, smooth, 2-8 seeded. The plant is thorny when young, scented, both male and female flowers in axillary, clustered racemes; berries deep-red or black, globose, smooth, 2-8 seeded.

Habit

**Code** **2665**

**Title of the ITK** **Use of *Clerodendron infortunatum* leaves for germination of paddy seeds, healing wounds and controlling dysentery in animals and human beings**

**Reference of the ITK*** Volume 2, supplement I, page 174

**Name of the plant used in ITK** *Clerodendron infortunatum*

**Names in Indian languages** Bengali and Hindi: *bhant;* Kannada: *basavanapada, ibbane;* Malayalam: *peruku, pervellam;* Marathi: *bhandira;* Sanskrit: *barhichuda, bhantaka;* Tamil: *karukanni;* Telugu: *gurrapukattiyaku.*

**Botanical name** *Clerodendrum infortunatum* Linn.

**Active ingredients** The leaves are used as bitter tonic, antiperiodic, vermifuge, laxative and cholagogue as well as used externally for tumours and certain skin diseases. Fresh leaf juice is used as an injection into the rectum for ascarids.

**Geographical indications** A gregarious shrub common throughout India, Myanmar and Sri Lanka. All parts of the plant have a bitter pungent taste. The leaves have a disagreeable odour.

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| **Code** | **2718** |
| **Title of the ITK** | **Use of *narguni (Atalantia monophylla)* leaves for curing ear trouble** |
| **Reference of the ITK*** | Volume 2, supplement I, page 174 |
| **Name of the plant used in ITK** | *Narguni* |
| **Names in Indian languages** | Hindi: *jungli nimbu;* Kannada: *kadu nimba;* Malayalam: *kattunarenga;* Marathi: *makad limbu;* Oriya: *kata narunga, narguni;* Sanskrit: *atavi-jambira;* Tamil: *kattanarangam, kattelumicchai;* Telugu: *adavi-nimma, yerra-munukudu.* |
| **English name** | Wild lime |
| **Botanical name** | *Atalantia monophylla* DC. |
| **Active ingredients** | The oil possesses antibacterial and antifungal properties. The juice of the plant is used for dyeing. The leaf juice forms an ingredient of a compound liniment used in hemiplegia. A decoction of the leaves is applied in itch and other cutaneous complaints. |
| **Geographical indications** | A large, thorny shrub or small tree, found in peninsular India, Orissa, Assam and Meghalaya and in the Andamans; also occasionally cultivated in gardens. Leaves compound, leaflets 1-3, ovate-oblong; flowers white, fascicled in the leaf-axils; berries as large as a lime or nutmeg, globose, usually 4-celled.  Twig |

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| **Code** | **2662** |
| **Title of the ITK** | **Use of *saslasar* creeper for relief from joint and body pain** |
| **Reference of the ITK*** | Volume 2, supplement I, page 175 |
| **Name of the plant used in ITK** | *Saslasar* |
| | Refer to ITK Code No. 1233 |

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| **Code** | **2710** |
| **Title of the ITK** | **Use of leaf paste of *kajncha (Abrus precatorius)* shrub to reduce filiarial swelling (lymph angites)** |
| **Reference of the ITK*** | Volume 2, supplement I, page 175 |
| **Name of the plant used in ITK** | *Kajncha*<br>Refer to ITK Code No. 80 |

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| **Code** | **2693** |
| **Title of the ITK** | **Use of garlic nodes for curing joint pain** |
| **Reference of the ITK*** | Volume 2, supplement I, page 175 |
| **Name of the plant used in ITK** | Garlic<br>Refer to ITK Code No. 1**1**16 |

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|---|---|
| **Code** | **2689** |
| **Title of the ITK** | **Use of root juice of *pokasunga (Blumea lacera)* for curing blood dysentery** |
| **Reference of the ITK*** | Volume 2, supplement I, page 176 |
| **Name of the plant used in ITK** | *Pokasunga* |
| **Names in Indian languages** | Bengali: *barasuksung, kukursunga;* Hindi: *jangli muli, kakionda;* Kannada: *gandharigidda;* Marathi: *bhanurda;* Oriya: *pokasunga;* Tamil: *kattumullangi, narakkarandai;* Telugu: *adavimullangi, kaarupogaaku.* |
| **Botanical name** | *Blumea lacera* DC. |
| **Active ingredients** | The leaves are cooked and eaten as vegetable. The juice is reported to possess astringent, diuretic and febrifugal properties; it is anthelmintic particularly in the ease of threadworm. Mixed with black pepper, the juice is given in bleeding piles. An astringent eyewash is prepared from the leaves. |
| **Geographical indications** | An erect herb, with silky white hair, 1 m in height, distributed almost throughout India from Punjab to Mizoram, in peninsular India, and in Andaman and Nicobar Islands, ascending up to an altitude of 1,800 m. Leaves elliptic-oblong to obovate-oblong, 3-15 cm x 1.2-2.5 cm; capitula axillary and terminal, yellow; bisexual florets, 3.0 - 4.5 mm. Female filiform; achenes brown, oblong, with white pappus. |

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| **Code** | **2687** |
| **Title of the ITK** | **Use of onion extract for curing cholera** |
| **Reference of the ITK*** | Volume 2, supplement I, pages 176-177 |
| **Name of the plant used in ITK** | Onion |
| | Refer to ITK Code No. 689 |

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|---|---|
| **Code** | **2692** |
| **Title of the ITK** | **Use of flower buds *of lasoora* tree for curing dysentery** |
| **Reference of the ITK*** | Volume 2, supplement I, page 177 |
| **Name of the plant used in ITK** | *Lasoora* |
| **Names in Indian languages** | Bengali: *bahubara;* Gujarati: *bargund;* Hindi: *lasora, chota lasora;* Kannada: *chikkachalle;* Malayalam: *viri, cheruviri;* Marathi: *shelvant;* Sanskrit: *bahuvaraka;* Tamil: *naruvili;* Telugu: *chinna nakkeru.* |
| **Botanical name** | *Cordia dichotoma* Forst. |
| **Active ingredients** | The fruit is astringent, anthelmintic, diuretic, demulcent and expectorant. It is used in diseases of the chest and urinary passage. The kernels are used in external application for ringworm. A decoction of the bark is used in dyspepsia and fevers. |
| **Geographical indications** | A small or medium-sized tree with short, usually crooked trunk 3-4 ft in girth. The fruit is 0.5-1.0 in. long, yellowish brown, pink or nearly black when ripe with a viscid, sweetish, almost transparent P$^{U_1}$P surrounding a central stony part. This species is widely distributed in India and Sri Lanka, specially in the warmer regions. |

Habit

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| **Code** | **2700** |
| **Title of the ITK** | **Curing ulcers in mouth of children** |
| **Reference of the ITK*** | Volume 2, supplement I, page 177 |
| **Name of the plant used in ITK** | *Agara* |

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**Contents**

**Names in Indian languages**

Bengali: *shialkanta;* Gujarati: *darudi;* Hindi: *bhar-bhand, brahmadundi, satyanashi;* Kannada: *datturigidda;* Malayalam: *bhrahmadanti;* Marathi: *pivla dhotra;* Oriya: *kantakusham;* Punjabi: *bhatkateya;* Sanskrit: *bhrahmadandi;* Tamil: *kurukkum;* Telugu: *brahmadandi;* Urdu: *baramdandi.*

**English name**

Mexican poppy, prickly poppy

**Botanical name**

*Argemone mexicana* Linn.

**Active ingredients**

The seeds are emetic and narcotic. They are reported to be used for diarrhoea and dysentery; but taken in large quantities, they are poisonous. They yield a yellowish brown oil (22-37%), known as Argemone Oil. The oil is nauseous and non-edible. The seeds are externally very similar to those of rape and mustard *(Brassica* spp.). The seeds and the oil are employed to adulterate those of rape and mustard. The seed-cake can be used as fertilizer. The plant, when eaten by animals, causes diarrhoea and sleepiness. It is used as an insecticide. The aqueous and alcoholic extracts of the plant are reported to have stimulating effect on isolated parts of different animals. The aqueous extract of flowers and leaves possesses weak antibiotic property, whereas that of the bark possesses anti-viral property. The alcoholic extract of fresh leaves and roots inhibits the growth of *Micrococcus pyogenes* var. *aureus.* The paste of the root mixed with onion is reported to be useful as an application in expelling guineaworms.

**Geographical indications**

An erect, prickly annual herb, up to 1.2 m in height, naturalized throughout India up to an altitude of 1,500 m. Leaves sessile, semi-amplexicaule, sinuately pinnatifid, spiny on margins, mid-rib and veins beneath; flowers yellow, 2.5-7.5 cm in diameter; capsules elliptic or oblong, prickly, rarely unarmed; seeds small, round, blackish-brown, deeply reticulate-scrobiculate. The herb is a very common weed in the agricultural and waste lands.

Prickly elliptic capsule

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| **Code** | : | **2683** |
| **Title of the ITK** | : | **Curing cuts by use *otkoinsiri (Commelina benghalensis)* stem** |
| **Reference of the ITK*** | | Volume 2, supplement I, page 178 |
| **Name of the plant used in ITK** | | *Koinsiri* |
| **English name** | | Benghal day flower, day flower, hairy wandering Jew, Wandering Jew |
| **Botanical name** | | *Commelina benghalensis* Linn. |
| **Geographical indications** | | Creeping herb with ascending stems; leaves broadly ovate, upto 5 cm long and 4 cm wide, pubescent, narrowed at base but not distinctly petiolate; spathe funnel-shaped, about 1-1.4 cm wide, green, flattened, flowers bright blue. Seeds 5 per capsule, transversely wrinkled. This plant is a serious weed of cultivated crops, found growing in plantations and orchards. It grows best where fertilits, soil and air moisture are all high, but will also tolerate day conditions. Commonly seen in Pacific Islands. |

Habit

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| **Code** | | **2715** |
| **Title of the ITK** | | **Use of *chakunda {Cassia tora)* to cure ear troubles** |
| **Reference of the ITK*** | | Volume 2, supplement I, pages 178-179 |
| **Name of the plant used in ITK** | | *Chakunda* |
| | | Refer to ITK Code No. 1967 |

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| **Code** | | **2716** |
| **Title of the ITK** | | **Use of pods of *karongal* for relieving constipation** |
| **Reference of the ITK*** | | Volume 2, supplement I, page 179 |
| **Name of the plant used in ITK** | | *Karongal* |
| | | Refer to ITK Code No. 784 |

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| **Code** | : | **2702** |
| **Title of the ITK** | : | **Use *of otana jar (cheriberi)* root for diarrhoea** |
| **Reference of the ITK*** | : | Volume 2, supplement I, page 182 : |
| **Name of the plant used in ITK** | | *Otana jar* |
| | | Refer to ITK Code No. 1253 |

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| **Code** | **2678** |
| **Title of the ITK** | **Extraction of oil from deodar wood and its multi-purpose use** |
| **Reference of the ITK*** | Volume 2, supplement **I,** page 182 |
| **Name of the plant used in ITK** | Deodar |
| | Refer to ITK Code No. 697 |

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| **Code** | **2681** |
| **Title of the ITK** | **Use of *bhang (Cannabis sativum)* leaves for treatment of swelling caused by stinging of honey bee or wasp** |
| **Reference of the ITK*** | Volume 2, supplement **I,** page 183 |
| **Name of the plant used in ITK** | *Bhang* |
| | Refer to ITK Code No. 1479 |

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| **Code** | **2661** |
| **Title of the ITK** | **Use of *ghrutkumari* herb for curing headache** |
| **Reference of the ITK*** | Volume 2, supplement **I,** page 183 |
| **Name of the plant used in ITK** | *Ghrutkumari* |
| | Refer to ITK Code No. 252 |

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| **Code** | **2717** |
| **Title of the ITK** | **Use of *palash* leaves for making plates and bowls** |
| **Reference of the ITK*** | Volume 2, supplement I**,** page 183 |
| **Name of the plant used in ITK** | *Palash* |
| | Refer to ITK Code No. 1383 |
| **Code** | **2686** |
| **Title of the ITK** | **Use of *aakpada* for sprain and dislocation** |
| **Reference of the ITK*** | Volume 2, supplement I**,** page 184 |
| **Name of the plant used in ITK** | *Aak pada* |
| | Refer to ITK Code No. 474 |

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| **Code** | **2703** |
| **Title of the ITK** | **Use *oiratbiche* (golden shower) for curing dysentery** |
| **Reference of the ITK*** | Volume 2, supplement I, page 185 |
| **Name of the plant used in ITK** | *Ratbiche* |
| | Refer to ITK Code No. 784 |

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| **Code** | **267** |
| **Title of the ITK** | **Cure of cough by using peach leaves** |
| **Reference of the ITK*** | Volume 2, supplement I, page 186 |
| **Name of the plant used in ITK** | Peach |
| | Refer to ITK Code No. 258**1** |

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| **Code** | **501** |
| **Title of the ITK** | ***Nirgundi* or *begunia (Vitex negundo)* leaf as a mosquito repellent** |
| **Reference of the ITK*** | Volume 2, page 514 |
| **Name of the plant used in ITK** | *Nirgundi* |
| | Refer ITK Code No. 702 |

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| **Code** | **562** |
| **Title of the ITK** | **Use of *hishalu (Rubus ellipticus)* roots for treating stomachache** |
| **Reference of the ITK*** | Volume 2, page 515 |
| **Name of the plant used in ITK** | *Hishalu* |
| **Names in Indian languages** | Assamese: *jotelupoka;* Hindi: *hinsalu, anchhu;* Dogri: *gouriphal;* Punjab: *akhi.* |
| **Botanical name** | *Rubus ellipticus* Sm. |
| **Active ingredients** | The plant is said to be of possible value in breeding for fruit size and disease resistance. |
| **Geographical indications** | It is distributed from Punjab to Assam, extending southwards in the western ghats and Deccan. Fruit of very good flavour and taste; said to have been introduced successfully into south Florida in USA as fruit and an ornamental plant. |

Habit

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| **Code** | **894** |
| **Title of the ITK** | **Soaps from soapnut *(Sapindus mukorossi)* and *bayul (Grewia optiva)*** |
| **Reference of the ITK*** | Volume 2, page 516 |
| **Names of the plants used in ITK** | Soapnut and *bayul* |
| **Name in Indian languages** | ***Soapnut:*** Bengali: *ritha;* Hindi: *ritha, reetha, aritha, dodan, kanmar, thali;* Oriya: *ita;* Punjabi: *reetha;* Sanskrit: *phenila, urista.*<br><br>***Bayul:*** Hindi: *Biul, biung, bhimal;* Kannada: *Thidsal;* Punjabi: *Dhaman. behel, pharwa.* |
| **English names** | ***Soapnut:*** Soapnut tree of north India |
| **Botanical name** | ***Soapnut:*** *Sapindus mukorossi* Gaertn.<br><br>***Bayul:*** *Grewia optiva* Drummond |
| **Active ingredients** | ***Soapnut:*** Used as fuel, and for charcoal making. Fruits used in the treatment of excessive salivation, epilepsy and chlorosis. They are also reported to act as a fish-poison. Powdered seeds are said to possess insecticidal properties. They are employed in the treatment of dental caries.<br><br>***Bayul:*** The bark yields a fibre of inferior quality used for cordage and clothing. It is also reported to be suitable for paper-making. The leaves and young twigs are lobbed for fodder. |
| **Geographical indications**<br>  <br>Twig | ***Soapnut:*** A deciduous tree, native of China and Japan, but doubtfully indigenous to India, 18 m or more in height and about 1.8 m in girth, found in the Himalayas from Himachal Pradesh eastwards and in Assam, ascending to an altitude of 1,500 m., both cultivated and self-sown. Bark dark greenish grey, pale-grey or brown, fairly smooth, leaves paripinnate, crowded near the ends of the branches; leaflets lanceolate, 5-15 cm long, 5-10 pairs; flowers polygamous, mostly bisexual, small in terminal, compound panicles; drupes globose, fleshy, saponaceous, usually solitary. Seed enclosed in black, smooth, hard endocarp.<br><br>***Bayul:*** A moderate-sized tree up to 45 ft high and 4'/2 ft in girth, with a clear bole of 10-12 ft, distributed from Punjab to Bengal, ascending to an altitude of about 7,000 ft in the Himalayas. Bark dark brown; leaves ovate, acuminate, |

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serrate, rough; flowers pale yellow, in leaf-opposed cymes; drupe, ½ inch in diameter, 1 -4 lobed, black when ripe, edible. The tree is often planted for hedges.

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| **Code** | **1640** |
| **Title of the ITK** | **Use of *bathua (Chenopodium album)* as green vegetable and as medicine against constipation, indigestion and night blindness** |
| **Reference of the ITK*** | Volume 2, page 517 |
| **Name of the plant used in ITK** | *Bathua*<br>Refer ITK Code No. 1281 |

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| **Code** | **1661** |
| **Title of the ITK** | **Anti-intoxicant effects of *Centella asiatica*** |
| **Reference of the ITK*** | Volume 2, page 518 |
| **Name of the plant used in ITK** | *Centella asiatica*<br>Refer ITK Code No. 1575 |

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| **Code** | **1975** |
| **Title of the ITK** | **To sow *kali tur (Cajanus cajan)* as drought-tolerant crop** |
| **Reference of the ITK*** | Volume 2, page 519 |
| **Name of the plant used in ITK** | *Kali tur*<br>Refer ITK Code No. 1188 |

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| **Code** | **65** |
| **Title of the ITK** | **Use of *rohida Tecomella undulata* tree leaves to treat gynological problem** |
| **Reference of the ITK*** | Volume 2, page 519 |
| **Name of the plant used in ITK** | *Rohida* |
| **Names in Indian languages** | Hindi: *rugtrora;* Marathi: *rakhtreora, rakhtrohida, rakhtroda;* Sanskrit: *rohi* |
| **English name** | Rohida tree |
| **Botanical name** | *Tecoma undulata* G. Don |

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**Active ingredients**

The bark of young branches is employed for the treatment of syphilis and eczema. Preliminary investigations have shown that the bark possesses mild relaxant, cordiotonic, and choleretic activities.

**Geographical indications**

A deciduous, ornamental shrub or a small tree, found in the drier parts of the north-west and western India, extending eastwards to the river Yamuna and ascending to an altitude of 1,200 m in the outer Himalayas. It is usually a shrub, found in small patches, but when cultivated it may grow as high as 12 m with a girth up to 2.4 m. Leaves oblong or linear-oblong; flowers pale yellow to deep orange, arranged in few-flowered, corymbose racemes on short, lateral branches; capsules slightly curved, smooth, seeds winged.

Habit

**Code** **77**

**Title of the ITK** **Use of *alvadora, giloe* and *bilva* to cure jaundice**

**Reference of the ITK*** Volume 2, page 522

**Name of the plant used in ITK** *bilva*

Refer ITK Code No. 263

**Code** **80**

**Title of the ITK** **Use of *masa* root, *nagfani* root, *somili* root and leaves for treatment of piles**

**Reference of the ITK*** Volume 2, page 522

**Name of the plant used in ITK** *Somili*

**Names in Indian languages** Assamese: *liluwani, raturmani;* Bengali: *chun-hali, kunch;* Gujarati: *chanothi, gunja;* Hindi: *ganchi, gunchi, rati;* Kannada: *ganji, gul-ganju, guluganji, madhuka;* Malayalam: *kunni, kunnikuru;* Marathi: *chanoti, gunchi, gunja;* Oriya: *gunja, runji;* Punjabi: *labrigunchi, ratak;* Sanskrit: *gunja;* Tamil: *gundumani, kuntumani;* Telugu: *guruginia, guruvenda*.

**English names** Crab's eye, Indian liquorice, jequirity

**Botanical name** *Abrus precatorius* Linn.

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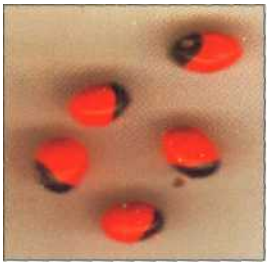
**Active ingredients**

The roots, leaves and seeds are used medicinally. The root possesses diuretic, tonic and emetic properties and are used in preparations prescribed for gonorrhoea, jaundice and haemoglobinuric bile. The leaves are used as raw vegetables (or) eaten with betel leaf. Decoction of the leaves is widely used for cough, cold and colic. Powdered seeds are said to disturb the uterine functions and prevent conception in women.

**Geographical indications**



Seeds

A winding climber with glabrescent, mostly greenish yellow young branches, found throughout India, ascending to an altitude of about 1,050 m in the outer Himalayas. Leaves 5—17 jugate, leaflets ovate, obovate or oblong; inflorescence rigid, thick, strongly falcate; flowers crowded, sub-sessile, pale-purple to yellowish; pods rectangular, bulgy; seeds ovoid, scarlet with a black spot round the hilum, or black with a white spot, or uniformly black, or white, glossy.

Habit

**Code** **87**

**Title of the ITK** **Use of *kewada* for family planning**

**Reference of the ITK*** Volume 2, page 524

**Name of the plant used in ITK** *Kewada*

**Names in Indian languages** Bengali: *keya, kedki-keya, keori;* Gujarati: *kewoda;* Hindi: *keura, kewda, ketki, gagandhul;* Kannada: *tale mara, kyad-agegida;* Malayalam: *kaida, thala;* Marathi: *keora;* Sanskrit: *ketaki;* Tamil: *tazhai, thatay;* Telugu: *mugali {male), ketaki, gajangi.*

**English name** Screw-pine

**Botanical name** *Pandanus odoratissimus* Linn.

**Active ingredients**

The leaves are said to be valuable in leprosy, small pox, scabies and diseases of the heart and brain. The anthers of the male flowers are given in earache, headache and diseases of the blood. The juice obtained from the whole inflorescence from which the spathes have been removed is said to be useful in rheumatic arthritis in animals.

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| **Geographical indications** | A densely, branched shrub, rarely erect, found along the coast of India and in Andaman Islands; it is common on the sea shore forming a belt of dense, impenetrable vegetation above the high water mark. Stem up to 6 m high, supported by aerial roots; leaves glaucous-green, 0.9-1.5 m long, ensiform, caudate acuminate, coriaceous, with spines on the margins and on the midrib; spadix of male flowers, 25-50 cm long, enclosed in long, white fragrant, caudate acuminate spathes; spadix of female flowers solitary, 5 cm in diameter; fruit an oblong or glabrous syncarpium, 15-25 cm in diameter, yellow or red; drupes numerous. This species is the most widespread and has been recorded from Mauritius Islands in the west to Polynesian Islands in the east. |

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| **Code** | **88** |
| **Title of the ITK** | **Use *otsinia* root and *bekria* grass for typhoid treatment in human being** |
| **Reference of the ITK*** | Volume 2, page 524 |
| **Name of the plant used in ITK** | *Sinia* |
| **Name in Indian languages** | Gujarati: *ghugharo;* Marathi: *ghagari;* Punjabi: ***sis,*** *sissai, khip.* |
| **Botanical name** | *Crotalaria burhia* Buch.-Ham. |
| **Active ingredients** | The plant is valued in Rajasthan (Rajaputana) as fodder for camels.The leaves and branches are used as a cooling medicine. |
| **Geographical indications** | A low, slender, branched undershrub, common in the arid parts ascending up to 4,000 ft. |

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| **Code** | **89** |
| **Title of the ITK** | **Use *ofkaner* leaves to cure old wounds** |
| **Reference of the ITK*** | Volume 2, page 525 |
| **Name of the plant used in ITK** | *Kaner* |
| | Refer ITK Code No. 168 |

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|---|---|---|
| **Code** | : | **890** |
| **Title of the ITK** | : | **Treatment of asthma in human being** |
| **Reference of the ITK*** | : | Volume 2, page 525 |
| **Name of the plant used in ITK** | : | *Datura*<br>Refer ITK Code No. 168 |

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|---|---|
| **Code** | **895** |
| **Title of the ITK** | **Honey, red sandal and wheat oil for treatment of eye infection** |
| **Reference of the ITK*** | Volume 2, page 526 |
| **Name of the plant used in ITK** | Sandal |
| **Names in Indian languages** | Bengali: *chandan, peetchandan, srikhanda, sufaid-chandan;* Gujarati: *sukhad, sukhet;* Hindi: *safed-chandan, sandal;* Kannada: *srigandha, gandha, agarugandha, bavanna, bhandrasri;* Malayalam: *chandanam, chandana-mutti* (wood); Marathi: *chandan, gandhachakoda;* Oriya: *chondona, gondassaro;* Sanskrit: *chandana, ananditam, taliaparnam;* Tamil: *sandanam, ulocidam, kulavuri;* Telugu: *chandanamu, chandanapuchettu, tellagandhapu-chett* (tree), *gandhataruvau* (tree), *srigandhamu, gandhapu-chekka* (wood). |
| **English name** | Sandal Tree *Santalum* |
| **Botanical name** | *album* Linn. |
| **Active ingredients** | Sandalwood oil is very highly prized as a raw material in perfumery. A rare combination of unusual properties is responsible for the position of this oil in the perfumery world. Also used for the treatment of certain diseases like gonorrhoea and some pharmacopoeias. |
| **Geographical indications** | A small- to medium-sized, evergreen semi-parasitic tree, with slender branches, sometimes reaching up to 18 m in height and 2.4 m. in girth, commonly found in the |

Habit

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Schematic Representation

Habit

comparatively dry regions of peninsular India from Vindhya mountains south-wards, especially in Karnataka (Mysore) and Tamil Nadu, ascending to an altitude of 1,200 m. It has also been introduced into Rajasthan, parts of Uttar Pradesh, Madhya Pradesh and Orissa. Bark reddish or dark-grey or nearly black, rough, with deep vertical cracks on old trees; leaves glabrous, thin elliptic-ovate or ovate-lanceolate, 1.5-8 cm x 1.6-3.2 cm, sometimes larger; flowers straw-coloured, brownish purple, reddish purple, or violet, unscented, in terminal and axillary paniculate cymes; drupe globose, 1.3 cm in diameter, purple-black, with hard, ribbed endocarp; seeds globose or obovoid. The tree is most probably indigenous to peninsular India; but some authorities are of the view that it is an exotic, introduced into India from Timor (Indonesia).

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|---|---|
| **Code** | **1635** |
| **Title of the ITK** | **Medicinal use of *vasak (Adhatoda vasica)*** |
| **Reference of the ITK*** | Volume 2, page 528 |
| **Name of the plant used in ITK** | *Vasak*<br>Refer ITK Code No. 217 |

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|---|---|
| **Code** | **1655** |
| **Title of the ITK** | **Use of *bhui* neem, *dub* grass and *mehndi* (myrtle) against jaundice** |
| **Reference of the ITK*** | Volume 2, page 531 |
| **Name of the plant used in ITK** | *Mehndi* |
| **Name in Indian languages** | Bengali: *mehedi, mendi;* Gujarati: *medi, mendi;* Hindi and Punjabi: *mehndi;* Kannada: *mayilanchi, gorante;* Malayalam: *mailanchi, pontlasi;* Marathi: *mendhi;* Oriya: *benjati;* Sanskrit: *mendika, raktgarbha, ragangi;* Tamil: *marithondi, maruthani;* Telugu: *goranti.* |

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| **English name** | Henna, Egyptian privei |
| **Botanical name** | *Lawsonia inermis* Linn. |
| **Active ingredients** | It is used also for dyeing hairs, beard and eyebrows. It is extensively used for dyeing silk or wool. Its leaves are used as a prophylactic and against skin diseases. They have astringent properties. They are used externally in the form of paste or decoction against boils, burns, bruises and skin inflamations. A decoction is used as gargle for sore throat. |
| **Geographical indications** | A glabrous, much branched shrub or small tree with greyish brown bark. Leaves sopposite, sub-sessile, elliptic or broadly lanceolate, entire, acute or obtuse, often mucronulate; flowers numerous, small, white or rose-coloured, fragrant, in large terminal pyramidal panicled cymes; capsule globose, about the size of a pea, with numerous, pyramidal, smooth seeds. It is cultivated in many tropical and warm temperate regions as a hedge plant. Large-scale cultivation for the sake of the leaves which yield the dye, is confined to India, Egypt and Sudan and to some extent Persia, Madagascar, Pakistan and Australia. It is grown as a hedge plant throughout India; as a commercial dye crop, it is cultivated mainly in Punjab and Gujarat, and to a small extent in Madhya Pradesh and Rajasthan. The more important centres of production are Faridabad in Gurgaon district (Haryana) and Bardoli and Madhi in Surat district (Gujarat), which together account for 87% of the total production of henna leaves. |

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| **Code** | **1656** |
| **Title of the ITK** | **Use of *putus (Lantana camara)* for remedy of malaria** |
| **Reference of the ITK*** | Volume 2, page 531 *Putus* |
| **Name of the plant used in ITK** | Bush camara *Lantana* |
| **English name** | *camara* Linn. |
| **Botanical name** | Dwarf types have been developed for growing in boarders and hanging baskets. It is also used in hedge and fencing purpose. |
| **Active ingredients** | |

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| **Geographical indications** | A hairy, unarmed or slightly prickly shrub, 0.3-1.8 m or more in height, native of tropical America and cultivated as an ornamental and hedge plant. Leaves opposite, ovate or oblong-ovate, crenate-dentate, rather thick, rugose, scabrous above, pubescent beneath; flowers small, usually yellow or orange changing **to** red or scarlet, in dense axillary heads; fruit drupaceous, 5 mm diameter, greenish black. The occurrence of *L. camara* proper in India is doubtful. |

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| **Code** | **1731** |
| **Title of the ITK** | **Use *of sadabahar* flower for control of high blood pressure** |
| **Reference of the ITK*** | Volume *2,* page 540 |
| **Name of the plant used in ITK** | *Sadabahar* |
| **Names in Indian languages** | Bengali: *gulferinghi, nayantara;* Gujarati: *barmasi;* Hindi: *sadabahar, mda suhagan;* Kannada: *kempukasi kanegale;* Malayalam: *ushamalari;* Marathi: *sadaphul;* Oriya: *ainskati;* Tamil: *sudukadu mallikai;* Telugu: *billaganneru.* |
| **English name** | Madagascar or red periwinkle, old maid |
| **Botanical name** | *Catharanthus roseus* (Linn.) G. Don |
| **Active ingredients** | Roots and thick basal stem contain higher percentage of alkaloids and two of these vinblastine and vincristine are used in medicines in cancer therapy. |
| **Geographical indications** | An erect, much-branched, annual or perennial herb, 30-90 cm in height, probably native to Malagasy, occasionally found wild but mostly naturalized up to an altitude of 1,300 m, and commonly grown in gardens throughout the country. Leaves oblong-elliptic, acute, rounded apex, glossy, slightly foetid; flowers fragrant, white to pinkish purple in terminal or axillary cymose clusters; follicle hairy, many seeded, 2-3 cm long; seeds oblong, minute black. |

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# WEATHER FORECASTING

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|---|---|
| **Code** | **1690** |
| **Title of the ITK** | ***Palash (Butea monosperma)* for weather forecasting** |
| **Reference of the ITK*** | Volume 2, page 547 |
| **Name of the plant used in ITK** | *Palash*<br>Refer to ITK Code No. 1383 |

| | |
|---|---|
| **Code** | **1980** |
| **Title of the ITK** | **Weather forecasting by observing behaviour of birds, trees, etc.** |
| **Reference of the ITK*** | Volume 2, supplement I, page 189 |
| **Name of the plant used in ITK** | *Salai*<br>Refer to ITK Code No. 1418 |

| | |
|---|---|
| **Code** | **2719** |
| **Title of the ITK** | **Forecasting of rainfall** |
| **Reference of the ITK*** | Volume 2, supplement I, page 195 |
| **Name of the plant used in ITK** | *Palas*<br>Refer to ITK Code No. 1383 |

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# Botanical Names

*Abelmnvchus exculentus* (Linn.) Moench
*Abrus precatorius* Linn.
*Acalypha indica* Linn.
*Acanthus ilicifolius* Linn.
*Achyranthes aspera* Linn.
*Acorus calamus* Linn.
*Adhatoda vasica* Nees.
*Aegle marmelos* (Linn.) Correa ex Roxb.
*Ailanthus excelsa* Roxb.
*Albizia amara* Boiv.
*Albizia lebbeck* Benth.
*Allium cepa* Linn.
*Allium sativum* Linn.
*Aloe vera* Tourn. ex Linn.
*Alstonia scholaris* R. Br.
*Althaea officinalis* Linn.
*Amorphophallus campanulatus* Blume ex Decne
*Anacardium occidentale* Linn.
*Andrographis paniculata* (Burm. f.) Wall, ex Nees
*Annona reticulata* Linn.
*Annona squamosa* Linn.
*Apium graveolens* Linn.
*Arachis hypogaea* Linn.
*Ardisia solanacea* Roxb.
*Argemone mexicana* Linn.
*Aristolochia bracteolata* Lam.
*Aristolochia indica* Linn.
*Artemisia nilagirica* (C. B. Clarke) Pamp.
*Artocarpus heterophyllus* Lam.
*Arundinaria falcate Munro*
*Asparagus racemosus* Willd.
*Atalantia monophylla* DC.
*Atropa belladonna* C. B. Clarke
*Avena sativa* Linn.
*Azadirachta indica* A. Juss.

*Bambusa arundinacea* (Retz.) Roxb.
*Blumea laccera* DC. *Boerhavia diffusa* Linn. *Bombax ceiba* Linn.
*Borassus flabellifer* Linn. *Boswellia serrata* Roxb. ex Colebr. *Brassica campestris* Linn. *Brassica nigra* (Linn.) Koch *Bryonia laciniosa* Linn.
*Butea monosperma* (Lam) Taub.

*Cadaba fruticosa* (Linn.) Druce
*Cajanus cajan* (Linn.) Millsp.
*Calotropis gigantea* (Linn.) Ait. f.
*Cannabis sativa* Linn.
*Capsicum annuum* Linn.
*Cardiospermum halicacabum* Linn.
*Carica papaya* Linn.
*Carissa carandas* Linn.
*Carthamus tinctorius* Linn.
*Cassia auriculata* Linn.
*Cassia fistula* Linn.
*Cassia tora* Linn.
*Cassytha filifonnis* Linn.
*Catharanthus roseus* (Linn.) G. Don
*Cedrus deodara* (Roxb. ex Lamb.) G. Don
*Centella asiatica* (Linn.) Urban
*Chenopodium album* Linn.
*Chloroxylon swietenia* DC.
*Cicer arietinum* Linn.
*Cinnamomum camphora* (Linn.) Presl
*Cissus quadrangula* Linn.
*Citrullus colocynthis* (Linn.) Schrad.
*Citrus grandis* (Linn.) Osbeck
*Citrus limon* (Linn.) Burm. f.
*Citrus reticulata* Blanco
*Cleistanthus collinus* (Roxb.) Benth. & Hook. f.
*Clerodendrum inermi* (Linn.) Gaertn.
Clerodendrum infortunatum
*Clerodendrum phlomidis* Linn. f.
*Coccinia indica* Wight & Arn.
*Cocos nucifera* Linn.
*Colebrookea oppositifolia* Sm.
*Colocasia esculenta* (Linn.) Schott

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*Commelina benghalensis* Linn.
*Commiphora mukul* (Hook, ex Stocks) Engl.
*Corallocarpus epigaeus* Benth. ex Hook. f.
*Cordia dichotoma* Forst.
*Coriandrum sativum* Linn
*Crataeva nurvala* Buch.-Ham.
*Crotalaria burhia* Buch.-Ham.
*Cuminum cyminum* Linn.
*Curcuma aromatica* Salisb.
*Curcuma longa* Linn**.**
*Cuscuta reflexa* Roxb.
***Cyamopsis*** *tetragonoloba* (Linn.) Taub.
*Cynodon dactylon* Pers.

*Dalbergia* ***sissoo*** Roxb.
*Datura alba* Nees
*Datura stramonium* **Linn.**
***Dendrocalamus*** *strictus* Nees
*Diospyros* ***melanoxylon*** Roxb.
***Dolichos biflorus*** Linn.
*Eclipta alba* (Linn.) Hassk.
*Elephantopus scaber* **Linn.**
*Eleusine* ***coracana*** Gaertn.
*Embelia ribes* Burne
*Emblica* ***officinalis*** Gaertn.
*Erythrina variegata* Linn. var. *orientalis* (Linn.) Merrill
*Eupatorium* ***odoratum*** Linn.
*Euphorbia neriifolia* **Linn.**

*Feronia limonia* (Linn.) Swingle
*Ferula asafoetida* Linn. *Ficus benghalensis* Linn. *Ficus carica* Linn. *Ficus glomerata* Roxb. *Ficus hispida* Linn. f. *Ficus* ***infectoria*** Roxb. *Ficus religiosa* Linn.
*Flacourtia ramantchi* **L'Herit.**

*Gloriosa superba* Linn. *Glycine max* Merrill *Glycyrrhiza glabra* Linn. *Glyricidia sepium* (Jacq.) Walp. *Gossypium herbaceum* Linn. *Grewia flavescens* Juss.
*Grewia optiva* Drummond

*Heterophragma quadriloculare* (Roxb.) K. Schum.
*Hibiscus rosa-sinensis* Linn. *Holarrhena antidysenterica* (Linn.) Wall. *Hordeum vulgare* Linn. *Hyoscyamus niger* Linn.

*Indigofera tinctoria* Linn.

*Jatropha gossypifolia* Linn.
*Juglans regia* Linn.

*Kigelia pinnata* DC.

*Lantana camara* Linn.
*Lawsonia inermis* Linn.
*Leea macrophylla* Roxb.
*Lens culinaris* Medic.
*Lepidium sativum* Linn.
*Leptadenia pyrotechnica* (Forsk.) Decne.
*Leucas aspera* spreng.
*Leucas martinicensis* **R. Br.**
***Linum*** *usitatissimum* Linn.
*Luffa acutangula* (Linn.) Roxb.
*Luffa cylindrica* (Linn.) M. J. Roem.

*Madhuca latifolia* Macb. *Mallotus philippensis* Muell. Arg. *Mangifera indica* Linn. *Melia azadirach* Linn. *Mentha arvensis* Linn. *Micromeria biflora* Benth. *Momordica charantia* Linn. *Moringa oleifera* Lam. *Mucuna prurita* Hook. *Musa paradisiaca* Linn. *Myrica esculenta* Buch.-Ham. *Myristica beddomei* King *Myristica fragrans* **Houtt.**

*Nerium oleander* Linn.
*Nicotiana tobacum* Linn.
*Nigella sativa* Linn.

*Ocimum basilicum* Linn.
*Ocimum canum* Sims
*Ocimum sanctum* Linn.
*Opuntia dillenii* Haw. *Oryza sativa* Linn. *Oxalis corniculata* Linn.

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*Pandanus odoratissimm* Linn.
*Papaver somniferum* Linn.
*Parthenium hysterophorus* Linn.
*Pedalium murex* Linn.
*Pennisetum typhoides* (Burm. F.) Stapf & Hubbard
*Physochlaina praelta* (G. Don). Miers
*Pimpinella anisum* Linn.
*Piper nigrum* Linn.
*Plantago amplexicaulis* Cav.
*Polygonatum multiflorum* All.
*Polygonum hydropiper* Linn.
*Pongamia pinnata* Pierre
*Populus alba* Linn.
*Prosopis juliflora* (Swartz) DC.
*Prosopsis cineraria* Druce
*Prunus armeniaca* Linn.
*Prunus persica* Batsch
*Psidium guajava* Linn.
*Pteris indica* Linn
*Punica granatum* Linn.

*Rheum emodi* Wall, ex Meissn.
*Ricinus communis* Linn. *Rubus ellipticus* Sm.

*Saccharum officinarum* Linn.
*Saccharum spontaneum* Linn.
*Santalum album* Linn.
*Sapindus mukorossi* Gaertn.
*Semecarpus anacardium* Linn. f.
*Sesamum indicum* Linn.
*Sesbania grandiflora* Pers.
*Shorea robusta* Gaertn.
*Sida acuta* Burm. f.
*Solarium melongena* Linn.
*Solarium surattense* Burm. f.
*Strychnos nux-vomica* Linn.
*Syzygium aromaticum* (Linn.) Merrill & Perry
*Syzygium cuminii* (Linn.) Skeels.

*Tamarindus indica* Linn.
*Tamarix ericoides* Rottl.
*Tecoma starts* (Linn.) H. B. & K.
*Tecoma undulata* G. Don
*Tecomella undulata*
*Tectona* ***grandis*** **Linn.**
*Tephrosia purprea* Pers.
*Terminalia alata* Heyne ex Roth
*Terminalia arjuna* (Roxb.) Wight & Am.
*Terminalia bellirica* Roxb.
*Terminalia chebula* Retz.
*Terminalia paniculata* Roth
*Thalictrum foliosum* DC
*Tinospora cordifolia* (Willd.) Miers ex Hook. f. Thorns.
*Trachyspermum ammi* (Linn.) Sprague
*Trichodesma indicum* R. Br.
*Trichosanthes cucumerina* Linn. *Tridax procumbens* Linn. *Trigonella foenum-graecum* Linn. *Triticum aestivum* Linn.

*Ulmus* ***wallichiana*** Planch.
*Urtica dioica* Linn.

*Vigna mungo* (Linn.) Hepper
*Vitex negundo* Linn. *Vitis vinifera* Linn.

*Withania somnifera* Dunal

*Xylia xylocarpa* Roxb.
Xylosma longifolium

*Zanthoxylum rhetsa* DC.
*Zingiber officinale* Rose.

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