# *Casuarina equisetifolia*

-She-oak

* ***Casuarina equisetifolia*** also known as *She-oak* or *Horsetail She-oak*(sometimes referred to as the **Australian pine tree** or **whistling pine tree** outside Australia), is a she-oak species of the genus *Casuarina*.
* The native range extends throughout Southeast Asia, Northern Australia and the Pacific Islands; including Thailand, Myanmar, Vietnam, Malaysia, Singapore, Brunei, Indonesia, East Timor, and the Philippines (where it is known as **agoho pine**)
* The species has been introduced to the Southern United States and West Africa.
* It is an invasive species in Florida,South Africa, India and Brazil.
* It is an actinorhizal plant able to fix atmospheric nitrogen.

## USES:-

1. *Casuarina* is widely used as a bonsai subject, particularly in South-east Asia and parts of the Caribbean. Indonesian specimens and those cultivated in Taiwan are regarded among the best in the bonsai world.
2. The wood of this tree is used for shingles, fencing, and is said to make excellent hot-burning firewood.
3. Among the islands of Hawaii, *Casuarina* are also grown for erosion prevention, and in general as wind breaking elements.
4. The *Casuarina* leaves are usually used for ornamental purposes in the urban region.
5. Other than ornamental purposes, the *Casuarina* was also explored in for its potential in remediation of textile dye wastewater. *Casuarina* leaves were found to be useful as absorbent material for the removal of textile dyes
6. *Casuarina equisetifolia* Lin. (Casuarinaceae) has been used traditionally for treating inflammation, cancer and other diseases

## Cultural & Historical Importance:

* There are many places in South Asia and Southeast Asia named after this plant. In Sri Lanka, a famous beach on the Jaffna Peninsula, Casuarina Beach, is named because of the many Casuarina trees that line the coast
* Casuarina is known as *ru*, *rhu* or *aru* in Malay. Many coastal fisherman villages in Terengganu have names such as Ru Renggeh, Ru Dua,Rusila formerly Ru Se Le (*Ru Satu Pokok Sahaja* "Just One Casuarina Tree"), and Ru Rendang.
* There are many places named because they have a cape (*tanjung*) where casuarina trees grow there. In Singapore, there is a road named Tanjong Rhu Road because it once had many of these trees growing along the coast from Kallang to Rochor.

## 

## Plantation:-

#### Watering

It is only required for young plants after they are planted on a permanent planting site and during periods of drought.

#### Reproduction

Sowing seeds in the open ground is most often used, followed by selective thinning for two years. During the spring and summer, a complex fertilizer is diluted in water for irrigation and top dressing is used. Cuttings are rarely used.

### 

#### Location

Plants of the genus Casuarina require an open sunny place.

### 

#### Temperature

Some species, such as the finest casuarina, are resistant to changes in air temperature. Others, such as the dwarf cassowary, are less stable and can only be planted in mild climates. Horsetail cassowary does not tolerate temperatures below 5-7 °C.

## 

#### Diseases and pests

Honeydew can provoke root rot and weakening of plants, even lead to death. The affected instance can only be deleted. The disease can be prevented by not planting plants in infected areas.

# *Livistona chinensis*

-Chinese fan palm

* ***Livistona chinensis***, the **Chinese fan palm** or **fountain palm**, is a species of subtropical palm tree of east Asia.
* It is native to southern Japan, Taiwan, the Ryukyu Islands, southeastern China and Hainan. In Japan, two notable populations occupy islands near the coast of Miyazaki Prefecture, Aoshima and Tsuki Shima.
* It is also reportedly naturalized in South Africa, Mauritius, Réunion, the Andaman Islands, Java, New Caledonia, Micronesia, Hawaii, Florida, Bermuda, Puerto Rico and the Dominican Republic.
* *Livistona chinensis* can attain heights of about 9 to 15 m (30 to 50 ft) and a spread of 4 m (12 ft). The leaves are fan shaped
* The palm is cultivated as an ornamental tree in gardens and conservatories.
* This plant can become a weed, or in some ecosystems an invasive species, in places such as Bermuda,Hawaii,Florida wetlands and on some Caribbean Islands.

## USES:-

1. Although the Chinese fan palm has long been used as a container palm, its neat leaf habit and interesting form make it ideal for additional landscape use, such as staggered groupings or as a freestanding specimen or street tree. When planted about ten feet apart along a walk or street, they form a closed canopy.
2. They thrive in small soil spaces.
3. The palm cleans itself of old leaves and requires little to no pruning.
4. Moreover, the Chinese fan palm fruits have been used in traditional medicine as an anticancer agent.
5. The seeds and fruits have specific compounds, called phenolic compounds, which have antibacterial properties.
6. The leaves are used for making fans
7. They are also used for manufacturing rain hats and coats, brooms etc
8. The fibres, extracted from the sheath and the petiole of the leaves, are made into cordage

## Plantation:-

#### Watering

Chinese fan palms need at least eight hours of direct sunlight on most days, while young palms prefer shade. Indoors, they prefer a bright window with indirect light.

#### Soil

Palms can tolerate a variety of soil types, including sandy and clay, with good drainage. For container-grown plants, use a quality potting mix made for palms.

#### Water

Overwatering Chinese fan palms can lead to root rot and other diseases, so it is important to water them during dry spells and hot weather. During the winter months, allow the soil to dry out for container-grown plants, and increase water during the spring, summer, and fall.

#### Temperature and Humidity

Chinese fan palms are resistant to cold and frost, and thrive in warm, humid weather. To maintain humidity and prevent foliage from drying out, mist the palm regularly and protect it from drafts and air-conditioning vents.

#### Fertilizer

Apply palm fertilizer two or three times per year to promote faster growth.

#### Pruning

The Chinese fan palm does not require pruning, as the terminal tip of the stem is where all new growth originates. Older fronds should be removed if they have turned brown, and sharp pruners should be used to remove any old fronds close to the trunk.

# Magnolia champaca

* Magnolia champaca, known in English as champak ([/ˈtʃʌmpək/](https://en.wikipedia.org/wiki/Help:IPA/English)),is a large evergreen tree in the family [Magnoliaceae](https://en.wikipedia.org/wiki/Magnoliaceae).
* It was previously classified as Michelia champaca.
* It is known for its fragrant flowers, and its timber used in woodworking.

## USES:-

#### Fragrance

1. The flowers are used in South Asia for several purposes. Especially in India, they are primarily used for worship at temples, whether at home or out, and more generally worn in hair by girls and women as a means of beauty ornament as well as a natural perfume.
2. Flowers are floated in bowls of water to scent the room, as a fragrant decoration for bridal beds, and for garlands.
3. The tree was traditionally used to make fragrant hair and massage oils.

#### Timber

1. In its native India and Southeast Asia, champaca is logged for its valuable [timber](https://en.wikipedia.org/wiki/Timber) It has a finely textured, dark brown and olive-colored wood, which is used in furniture making, construction, and cabinetry.
2. The species is protected from logging in some states of India, especially in the Southwestern region, where certain groves are considered sacred by Hindus and Buddhists.

#### Cultivation

1. *Magnolia champaca* is cultivated by specialty [plant nurseries](https://en.wikipedia.org/wiki/Plant_nursery) as an [ornamental plant](https://en.wikipedia.org/wiki/Ornamental_plant), for its form as an ornamental tree, as a dense screening [hedge](https://en.wikipedia.org/wiki/Hedge), and for its fragrant flowers.
2. It is planted in the ground in tropical and in [subtropical climate](https://en.wikipedia.org/wiki/Subtropical_climate) gardens, such as in coastal Southern and Central California.
3. It is planted in containers in cooler temperate climates.It requires full sun and regular watering.
4. The fragrant flowers attract butterflies and [hummingbirds](https://en.wikipedia.org/wiki/Hummingbird).Its [aril](https://en.wikipedia.org/wiki/Aril)-covered seeds are highly attractive to birds.

## Cultural & Historical Importance:

* In [Theravada Buddhism](https://en.wikipedia.org/wiki/Theravada_Buddhism), champaca is said to have been used as the tree for achieving enlightenment, or Bodhi, by the fourteenth [Buddha](https://en.wikipedia.org/wiki/Buddha) called "Aththadassi - අත්ථදස්සි". According to Tibetan beliefs, the Buddha of the next era will find enlightenment under the white flower canopy of the champaca tree.
* The fragrance of Champaka flowers is unique. It is used in the worship of all gods except Lord Shiva.
* The tree was traditionally used to make fragrant hair and massage oils. Jean Patou’s famous perfume, 'Joy', the second best-selling perfume in the world is derived in part from the essential oils of champaca flowers.

## Plantation:-

#### Water

Champak should be watered immediately after planting, and again when the water has seeped through. Water it a second time 3 days after planting and a third time 5 days after planting. In the hot seasons, a little water can be used in the morning and evening, while other seasons it is not necessary. Pay close attention to checking if the plants survive.

#### Fertilizer

Organic fertilizer should be applied to the base of the plant in spring to give it extra nitrogen to help it develop leaves and bloom later in the season. Nitrogen-rich fertilizer such as dried-blood meal is recommended, while potassium, such as potash, is suitable for later in the year and can be applied during fall before the tree becomes dormant over the winter.

#### Sunlight

The positioning of your [champak](https://www.picturethisai.com/wiki/Magnolia_champaca.html) is also an important consideration. Despite being able to cope with cooler climates, **they will prefer a sunny spot in the garden** with some partial shade for protection during the summer months.

#### Pruning

Champak requires little pruning, but a light trim of younger trees during late spring/summer after they have finished blooming is recommended to help shape the plant and encourage more blooms. Remove damaged branches and leggy shoots, and consider the tree shape when pruning. Aim for a balanced, open structure.

#### 

#### Temperature

Champak should be kept in moderate to warm temperatures to avoid damaging early flowering buds, and can withstand weather conditions in hardiness zones 4-9. Mulch around the base can help retain moisture.

#### Soil

Champak prefers acidic soils, so if gardening in alkaline soil, add a layer of peat to help raise acidity levels. In areas where soil remains wet, Champak can cope with compact, rich soil.

# Frangipani

-Plumeria

* Frangipani also known as plumeria, is a genus of flowering plants in the subfamily Rauvolfioideae, of the family Apocynaceae.
* Most species are deciduous shrubs or small trees.
* The species variously are endemic to Mexico, Central America, and the Caribbean, and as far south as Brazil and north as Florida (United States), but are sometimes grown as cosmopolitan ornamentals in warm regions.

## USES:-

1. The rich, strong, and exotic fragrance of frangipani essential oil is used widely in perfumery

2. Natural astringent traits aids in moisturising the dry skin making it soft, supple, and glowing

3. The deep cleansing activity of this oil aids in clearing impurities, dirt from within the skin and unclog pores

4. Potent anti-inflammatory and purifying properties of frangipani essential oil is valuable in fading skin pigmentation and makes the skin blemish-free

5. The astringent property is valuable in strengthening hair follicles and safeguard the hair from UV damage and keep the scalp hydrated and averts dandruff

6. The sedative effect of frangipani essential oil is used as an inhaler or diffusing oil to calm the mind, relieve stress, and induces a sound sleep

## Cultural & Historical Importance:

* In Southeast Asia the plumeria tree and flower are considered sacred.
* A relief in the Penataran temple ruins in East Java shows a plumeria tree with its distinct flower petals and skeleton-like branches.
* A relief in the Borobudur temple, at the west side 1st zone, also depicts plumeria.These reliefs were created before European exploration. Borobudur was constructed in the 9th century and Penataran in the 14th century. Taken together, their dates fail to establish when plumeria came to Southeast Asia.
* In Mesoamerica, plumerias have carried complex symbolic significance for over two millennia, with striking examples from the Maya and Aztec periods into the present. Among the Maya, plumerias have been associated with deities representing life and fertility, and the flowers also became strongly connected with female sexuality. Nahuatl-speaking people during the height of the Aztec Empire used plumerias to signify elite status, and planted plumeria trees in the gardens of nobles.
* Indian incenses scented with Plumeria rubra have "champa" in their names. For example, nag champa is an incense containing a fragrance combining plumeria and sandalwood. While plumeria is an ingredient in Indian champa incense, the extent of its use varies between family recipes. Most champa incenses also incorporate other tree resins, such as Halmaddi (Ailanthus triphysa) and benzoin resin, as well as other floral ingredients, including champaca (Magnolia champaca), geranium (Pelargonium graveolens), and vanilla (Vanilla planifolia) to produce a more intense, plumeria-like aroma.
* In the Western Ghats of Karnataka, the bride and groom exchange garlands of cream-coloured plumeria during weddings. Red-colored flowers are not used in weddings. Plumeria plants are found in most of the temples in these regions.

## Plantation:-

#### Watering

The plant prefers regular water during its growth cycle but does not require watering during the winter months. However, it should be kept evenly moist throughout its life cycle so that roots will develop properly without damage from drought conditions.

#### Reproduction

You can use both cuttings and seeds to propagate frangipani. As the plants contain a poisonous sap, ensure you wear gloves when handling the cuttings and pruning. Pollination is essential to Plumeria so that fruit with seeds can form.

#### Location

As frangipani hails originally from tropical regions, its best performance will be in the tropics and sub-tropics.

#### Temperature

Keep temperatures indoors 26 to 32°C. If that temperature is too high for indoor living, the Plumeria will do just fine with daytime temperatures of 23°C and night temperatures of 15 to 21°C.

#### Diseases and pests

Frangipani rust, also known as Coleosporium pluymeriae, is a fungal plant disease that affects frangipani trees in Australia. It is spread by spores being picked up by the wind and implanted on damp leaves. There is no cure and no sprays are registered against it. To manage the spread of the disease, it is important to remove infected leaves as soon as possible and not to shake them as you do so. No products are registered specifically against it, but myclobutanil and copper are registered for rust in ornamentals.

# Ficus

* Ficus is a genus of about 850 species of woody trees, shrubs, vines, epiphytes and hemiepiphytes in the family Moraceae.
* It's known as fig trees or figs, they are native throughout the tropics with a few species extending into the semi-warm temperate zone.
* The common fig (F. carica) is a temperate species native to southwest Asia and the Mediterranean region (from Afghanistan to Portugal), which has been widely cultivated from ancient times for its fruit, also referred to as figs.
* The fruit of most other species are also edible though they are usually of only local economic importance or eaten as bushfood

## USES:-

1. There are several varieties of Ficus plants, which have purple fruits called figs. These are packed with nutrients and associated with many health benefits. Common fig (Ficus Carica) is cultivated for its pear-shaped edible fruits, which are nutritious and aid in digestion, decrease the risk of heart diseases, and help manage blood sugar levels.
2. Ficus or fig tree is home to birds, butterflies, monkeys, and bats.
3. Ficus plants also purify air by filtering toxins from it. They can filter out pollutants such as formaldehyde, benzene, and trichloroethylene.
4. Ficus fruits, roots, and leaves are used in traditional medicine to treat ailments such as gastrointestinal indigestion, hemorrhoids, inflammatory conditions, loss of appetite, liver disorders, urinary diseases, diarrhea, diabetes, and respiratory and cardiovascular disorders.
5. Some Ficus trees are cultivated as a source of rubber and paper.

## Cultural & Historical Importance:

* There was widespread acknowledgement among the residents of Komargoan that fig trees are sacred. This finding is consistent with previous reports from the Indian Subcontinent (Chandrakanth et al. 1990; Dutta 2006; Gadgil and Guha 1993; Kumar et al. 2011; Sitaramam et al. 2009). We observed temples or shrines were common features at the base of large ahot gos (F. religiosa) and bor gos (F. benghalensis) trees. These ranged from large modern temples to small shrines, consisting of red banners as gifts to the gods or even posters depicting a god.
* Figs are also of paramount cultural importance throughout the tropics, both as objects of worship and for their many medicinal uses. The fig trees have profoundly influenced culture through several religious traditions namely in Buddhism, Hinduism, Jainism and Islam

## 

## Plantation:-

#### Watering

The Ficus plant prefers to dry out some between watering, but do not let the soil completely dry out. We recommend that you water your tree every 5 to 7 days, or when the top inch of soil is dry.

#### Reproduction

The flowers are pollinated by very small wasps that crawl through the opening in search of a suitable place to lay eggs. Without this pollinator service fig trees could not reproduce by seed

#### Location

Ficus trees are tropical plants but do well in indoor lighting conditions

#### Temperature

80 degrees during the day to about 60 degrees at night.

#### Diseases and pests

Ficus trees are vulnerable to pests such as mites, scale, mealybugs, whiteflies, and aphids, and can fall due to sudden changes in temperature, changing the location of the plant, or over-watering. To get rid of these pests, wash the plant directly under the tap or shower and repeat the process. If the leaves are falling, check if the soil is drained properly. Occasionally, Ficus trees can contract a leaf spot disease.

# 

# Caryota urens

-Fishtail tree

* ***Caryota urens*** is a [species](https://en.wikipedia.org/wiki/Species) of [flowering plant](https://en.wikipedia.org/wiki/Flowering_plant) in the [palm](https://en.wikipedia.org/wiki/Arecaceae) family, native to [Sri Lanka](https://en.wikipedia.org/wiki/Sri_Lanka), [India](https://en.wikipedia.org/wiki/India), [Myanmar](https://en.wikipedia.org/wiki/Myanmar) and [Malaysia](https://en.wikipedia.org/wiki/Malaysia) (perhaps elsewhere in [Indo-Malayan region](https://en.wikipedia.org/wiki/Malay_Archipelago)), where they grow in fields and rainforest clearings, it is regarded as introduced in Cambodia.
* The epithet *urens* is [Latin](https://en.wikipedia.org/wiki/Latin) for "stinging" alluding to the chemicals in the fruit.
* Common names in English include **solitary fishtail palm**, **kitul palm**, **toddy palm**, **wine palm**, **sago palm** and **jaggery palm**.
* Its leaf is used as fishing rod after trimming the branches of the leaf and drying. According to Monier-Williams, it is called *moha-karin* ("delusion maker") in [Sanskrit](https://en.wikipedia.org/wiki/Sanskrit).
* It is one of the [sugar palms](https://en.wikipedia.org/wiki/Sugar_palm).

## USES:-

1. The trunk contains a high quantity of starch and a juice can be extracted from the shoots of the flowers.The latter can be boiled into a sugary syrup. The cabbage can be eaten raw or cooked.
2. This species is called kithul (කිතුල්) in Sri Lanka. It is best known as the source of kithul treacle, a liquid jaggery.
3. The sap of the tree is boiled for many hours until it turns into the thick, dark treacle, unique to Sri Lanka.
4. Kithul treacle is used as a sweetener in both Sri Lankan and Western cooking.
5. Toddy is extracted from the inflorescence, and is considered somewhat powerful compared to toddy extracted from other palm trees.
6. The pulp of the mature plant is cut, sun dried, and powdered, and is edible. It is sweet in taste.This powder is considered cool and nutritious in Coastal districts of Karnataka. In Sri Lanka, the powder is mixed with coconut milk and cooked to make Kithul Thalapa (කිතුල් තලප).
7. Elephants are fed both the leaf and the pulp of this plant.
8. The leaves possess strong fibres and are used for basketry in Cambodia, where the plant is named tunsaè.
9. The heart of the trunk contains a starch similar to sago, as well the trunk can be used for building.
10. The fruit, when its stiff hairs are removed, is pleasant and sweet to eat, and, as elsewhere, the Cambodians cut the stalks to make sugar, which in turn can be made into wine.
11. Caryota urens is cultivated as an ornamental tree, and planted in gardens and parks in tropical and sub-tropical climates. It is also used as an interior and houseplant when smaller.

## Plantation:-

#### Light

Light is a limiting factor when growing fishtail palms because most indoor lighting can't equal the bright light these trees need to thrive. In the outdoors, they grow amidst taller trees that help filter out the light and heat, so plant them in a sunny spot that gets morning sun and less direct light later in the day.

#### Soil and Water

Use a cactus soil mix or a general-purpose potting mix with sand or perlite mixed in to create excellent drainage, because these trees like it on the drier side. Add water to fishtail palms whenever the soil feels dry to the touch, which you can test by sticking a finger in the soil about an inch deep. Damp soil means you don't need to water.

#### Temperature and Humidity

Fishtail palms are fussy about humidity and need at least 50% humidity to grow and stay healthy. Indoors, you can add a humidifier near the tree or place a tray of pebbles in water under its pot. Keep plants away from air vents or drafty areas. If your home is kept between 65ºF and 85ºF, your tree will do fine.

#### Fertilizer

During the fishtail's growing season, add fertilizer once a month after watering. At a minimum, give your tree a slow-release fertilizer every few months. Use fertilizer specifically for palm trees for best results.

#### Pruning

There's no need to prune fishtail palms. If you spot dead leaves, trim them off the tree. You can also prune if the tree is getting too large for your space. Trim the tops of leaves at the top of the tree to prevent it from growing taller.

# 

# Petunia

* Petunia is a genus of flowering plants that belongs to the family Solanaceae.
* It comprises about 35 species of mostly annuals and perennials, which are native to South America.
* The most popular petunia species, Petunia x hybrida, is a hybrid that is widely cultivated for its showy and colorful flowers.
* Petunias come in a range of colors, including pink, purple, red, white, and yellow, among others.

## USES:-

1. Petunias are popular ornamental plants used for gardening and landscaping.
2. They are often planted in flower beds, hanging baskets, and containers to add color and beauty to outdoor spaces.
3. Petunias also have several medicinal properties. They contain alkaloids that have anti-inflammatory, anti-fungal, and anti-microbial properties.
4. Petunias have been used to treat ailments such as cough, fever, and respiratory infections.
5. Some petunia species are also used for scientific research.
6. The plant's genetic makeup has been extensively studied for its potential use in the production of pharmaceuticals and other products.

## Cultural & Historical Importance:

* Petunias have been cultivated for centuries and have a rich cultural history.
* They were first discovered in South America in the 19th century by European explorers.
* Petunias were brought to Europe and quickly gained popularity as ornamental plants.
* In the early 20th century, petunias were introduced to the United States and became a popular garden flower.
* Petunias are now widely cultivated around the world and are a symbol of beauty and elegance.

## Plantation:-

Watering

Petunias need regular watering, especially during hot and dry weather. Water your petunias deeply once or twice a week, or when the top inch of soil feels dry to the touch. Be careful not to overwater, as this can cause root rot and other problems.

Reproduction

Petunias can be propagated by seeds or cuttings. Seeds can be sown indoors or outdoors in the spring, while cuttings can be taken in the summer or fall.

Location

Petunias thrive in full sun but can tolerate some shade. They prefer well-drained soil that is rich in organic matter.

Temperature

Petunias grow best in temperatures between 60 and 80 degrees Fahrenheit. They can be damaged by frost and extreme heat.

Diseases and pests

Petunias are vulnerable to pests such as aphids, thrips, and spider mites, as well as diseases such as powdery mildew and botrytis blight. To prevent and control these problems, keep the plants healthy and avoid overcrowding. Use organic insecticides and fungicides as needed