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Commonly used Traditional Food Plants in Tehsil Moorang, District Kinnaur, Himachal Pradesh

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Abstract: ***The state of Himachal Pradesh is inhabited by different tribal communities of which Kinnaura is one of them. These tribal people depend upon the large number of plant species available in their vicinity as source of food, medicine, fodder, dye, oil etc. Traditional food plants are the plants which are accepted by rural communities since ages, preserved through their customs, habits and traditions. These traditional food items are also recognized as 'functional foods' as they are rich with body healing chemicals, antioxidants, dietary fibers and probiotics. Native people are used to these food plants and they know how to prepare these for consumption in their day to day life. These plants not only provide substantial nutritional and dietary benefits to these tribal people who live in such remote rural areas and also prevent several chronic diseases caused by malnutrition. In the current scenario, where increasing population pressure is high and as a result pressure on a few selective major food crops are also increasing. Therefore, it become necessary for us to look for alternatives, and in this context, underutilized traditional food crops may assumes special significance as they are less damaging to the environment and also address cultural needs. But in recent times, the ancient traditional practices of utilization of traditional food plants is gradually declining due to modernization and industrialization hence there is urgent need to study such knowledge systems and find innovative ways of tapping their potential for the welfare of mankind.***

Keywords: Traditional food plants, Traditional crops, Kinnaur, Moorang, Tribes, Himachal

1. Introduction

The surrounding environment and biological diversity played an important role in the development of human civilization. The nutritional role and health benefits of indigenous food plants are well documented (El and Karakaya, 2004; Ansari et al., 2005; Balemie and Kebebew, 2006; Delang, 2006; Kuhnlein et al., 2006; Shrestha and Dhillion, 2006). They are important dietary supplements and sources of trace elements, proteins, minerals and vitamins for resource poor people (Agte et al., 2000; Parvathi and Kumar, 2002; Gockowski et al., 2003; Shackleton, 2003; Agrahar-Marugkar and Pal, 2004; Redzic, 2006; Singh and Garg, 2006). Most indigenous food plants are comparable or have higher nutrient content than their domesticated or exotic counterparts. Most are rich in iron, zinc, vitamin A, C, E (Schmidt, 1971; Chwenya, 1994), folic acid (Tuker, 1986), proteins, carbohydrates and minerals (Agte et al., 2000; Parvathi and Kumar, 2002; Gockowski et al., 2003; Shackleton, 2003; Agrahar-Marugkar and Pal, 2004; Singh and Garg, 2006). These traditional food plants are the plants which are accepted by rural or tribal communities through their customs, habits and tradition. People are used to them since ancient times and they know how to prepare them for consumption. Guerrero et al. (2009: 348) says that traditional food is "frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another". In order to ensure the food and nutritional security local farming communities have encouraged the utilization of cultivated as well as wild edible plant species. Wild edible plants constitute a large portion of food consumed by local inhabitants in tribal and hilly areas (Maheshwari, 1988 & 1990). Local people have wonderful skill to identify these, their palatability, products and preparation (Mehta, Kumar & Bhatt, 2006).These traditional food plants are less damaging to the environment and also address cultural needs. It is not possible to list all traditional food plants as different communities have evolved their own food preferences and habits. Himachal Pradesh lies in the Western Himalayas in North India between 30^0 22' to 33^0 12' North latitudes and 75^0 47' to 79^0 04' East longitudes. It has been endowed with a wide range of agro climatic conditions due to which a large number of agriculture and horticultural crops are successfully grown here. The low productivity of cereals, oilseed and pulses is a major hindrance in the food security of the region. In district Kinnaur farmers depend upon several species of food crops including indigenous food crops viz. millet, barley and buckwheat etc. Beside this locals are also dependent on some common wild plants available in their vicinity as source of food during their season of availability. Harvesting and collection of traditional food plants in Moorang range in district Kinnaur is usually done by women. The collection is often combined with other daily activities such as cultivation, weeding arable cropland and collection of firewood. Traditional food plants are plentiful in the rainy season but become scarce during the dry season or winter and available only when dried and preserved. Women often process and store indigenous vegetables for use during the dry or winter season when they are the only alternative source of nutrition. Generally, these underutilized indigenous food crops and wild edible plants are sold in the local markets owing to their small volume of production. However, such indigenous food crops are in a vulnerable state and near extinction owing to the introduction of high-yielding and short duration varieties of cash crops. Despite low yield and relatively longer duration, the underutilized indigenous food crops are palatable, resistant to pests and diseases, and tolerant to drought and natural hazards. The food habits and preparation of various dishes depends upon the availability of crops and surrounding vegetation. Crops grown in the region and surrounding plant species are the source of raw material for preparation of food recipes. The large number of crops and wild edible plant species are the contributing factor to a large number of traditional food recipes for subsistence needs for the local inhabitants. Present study deals with the indigenous knowledge of

traditional food plants of Moorang tehsil of district Kinnaur. Food and nutritional security of the poor and marginal rural people is only possible through the conservation and promotion of traditional food plant species because they are highly nutritious. Lacks of nutritional and agronomic information, a negative attitude towards traditional indigenous foods (termed 'foods for poor') are the major constraints for mass production. Traditional and indigenous food systems once lost are hard to recreate. Hence there is urgent need for promotion of traditional food plant for highlighting the importance of these food plants in food security and health of the locals.

2. Material and Methods

Information on the traditional food plants of Moorang tehsil of District Kinnaur was collected from seven villages (Rarang, Jangi, Lippa, Rispa, Ribba, Moorang and Thangi) during the period May, 2012 to April 2013. The usual personal observations, oral interviews, discussions with the villagers were the bases of collection of data about the uses of the plants. At the end of each interview, the plant specimens were collected, dried by using routine botanical collection and herbarium techniques, identified and preserved (Jain & Rao, 1997). Samples of recorded plants were identified in the laboratory with the help of local floras (Chowdhery and Wadhwa, 1984; Dhaliwal and Sharma, 1999; Aswal and Mehrotra, 1994; Nair, 1977). Plants species voucher specimens of recorded plants have been kept in Department of Botany Himachal Pradesh University Shimla (H.P.) India.

3. Result and Discussion

The traditional food plants need to be popularized as many of them have high nutritive and medicinal value along with that these plant species are adaptable to harsh environment and can survive in the natural atmosphere provided. Beside this it is cannot be denied that the traditional knowledge in developing countries like India is eroding at a faster rate and these tribal areas are also not an exception. It is unfortunate for us that these traditional food plants which serve nutritional purpose as well as used in traditional medicines are threatened with extinction because of unsustainable harvesting practices and huge pressure on land for growing cash crops. Traditional food plants are more nutritious and provide additional nutritional supply for maintaining their vitality and sound health. The knowledge and utilization pattern of traditional food plants vary according to different localities and communities which reflects their culture and traditions. Such knowledge appears to be the result of continued reliance of local communities on these plants. It has been observed that the tribal people of Himachal Pradesh are still largely depends on plant resources growing in their surroundings to meet various food requirements. But in recent times, the old traditional practices in many tribal communities are at risk and gradually declining due to modernization. Kinnaur is not untouched from the effect of modernization where the locals are more interested on cash crops especially cultivation of Apple and seasonal vegetables. People are shifting from traditional crop to commercial crops and very few farmers are cultivating these traditional crops. They are ignorant about the importance of these traditional crops and neglecting these nutritious food crops. As today the land holdings is decreasing and population is increasing rapidly, hence it is very necessary to search for other possible source of food. But in recent times, the old traditional practices of utilization of plants are at risk and gradually declining due to modernization and changing food preference of young generations. Beside this knowledge of usage is passing orally from one generation to another and knowledge is still maintained by few old peoples of study communities. Thus documentation of such indigenous knowledge is essential and necessary for the conservation and utilization of biological resources. There is dire need to demonstrate and quantify the benefits of these underutilized traditional food plants for the improvement of livelihoods. Conservation and sustainable utilization of these traditional food resources of Moorang tehsil of district Kinnaur is important as these traditional food plants are less damaging to the environment, address cultural needs and also preserve the cultural heritage of local communities. Hence it is imperative to collect and document local knowledge, encompassing all aspects of these food plants for sustainable utilization and for agronomic practices. Wheat, Barley, maize and Rajmah are the major crops that are cultivated in Moorang tehsil of district Kinnaur and traditional food prepared from cereals are common. Beside these locals also collects highly nutritious wild vegetables and some species of mushrooms from nearby field bunds and forest. Fruit based fermented beverages are also made form fruits and these beverages are important part socio-cultural life. Most of the traditional food are prepared and consumed regularly and some are prepared and consumed generally during marriages, festivals and special occasions. These foods have been a part of staple diet considered highly nutritious and very popular among the locals. Some of the common plants used in preparation of traditional food are given below in the Table -1:

S.no	*Botanical name*	*Local name*	*Family*	*Plant part used*	*Usage pattern*
1.	*Alliaria petiolata*	Kan	Brassicaceae	Leaves	Leaves are used as vegetable.
2.	*Amaranthus caudatus*	Dankhar	Amaranthaceae	Leaves, Seeds	Leaves are used as vegetable and roasted seeds are eaten with milk to cure chicken pox.
3.	*Carum carvi*	Mako zeera	Apiaceae	Leaves, Seeds	Leaves and seeds used in preparation of dry chutney and eaten with boiled red potatoes.
4.	*Chenopodium album*	Bathu	Chenopodiaceae	Leaves	Leaves are used as vegetable
5.	*Diplazium esculentum*	Lingad	Dryopteridaceae	Curled fronds	Curled fronds are used as vegetable.
6.	*Eleucine*	Koda	Poaceae	Seeds	Seed flour used in preparation of *rottis* known as '*Khodoro rotich'*.

	coracana				
7.	*Fagopyrum esculentum*	Olgo kan, Yoppa kan	Polygonaceae	Seeds	Seed flour used in preparation of rottis known as '*Ghashang hod'*. It is also used in preparation of very famous cuisine known as *'Dhuu'* and eaten with butter especially during festivals.
8.	*Fagopyrum tataricum*	Bras kan, Phapra kan,	Polygonaceae	Seeds	Seed flour is used in preparation of rottis locally known as '*Brasu hod'*. It is generally eaten with green leafy vegetables.
9.	*Glycine max*	Botang	Papilionaceae	Seeds	Roasted seeds eaten with dry fruits especially during '*Bishu'* festival. Beside this seed flour (*Botang yud*) eaten with salted tea and apricot oil.
10.	*Hordeum vulgare*	Tag, Tingtag	Poaceae	Seeds	Seed flour used in preparation of '*Sattu*' and eaten with salted tea and apricot oil.
11.	*Mentha arvensis*	Pudina	Lamiaceae	Leaves	Leaves are used in preparation of chutney and eaten with boiled potatoes.
12.	*Morchella esculenta*	Rangmoch	Morchellaceae	Fruiting bodies	Dried and fresh fruiting bodies are cooked as vegetable.
13.	*Nasturtium officinale*	Bolku kan	Brassicaceae	Leaves	Leaves are used as vegetable.
14.	*Phytolacca acinosa*	Zorbo	Phytolaccaceae	Leaves	Leaves are used as vegetable.
15.	*Prunus armeniaca*	Chul	Rosaceae	Fruits	Apricot wine known as '*Chulu rakat'* is prepared from the fermented fruits and locals consume it during marriages and festivals.
16.	*Rorippa islandica*	Kan	Brassicaceae	Leaves	Leaves are used as vegetable.
17.	*Setaria italica*	Kangni, Shag	Poaceae	Seeds	Local consider it equivalent to rice and eaten occasionally.
18.	*Triticum aestivum*	Jodh	Poaceae		Salted roties (*Poley)* deep fried in oil prepared especially during festivals, marriages and death ceremonies and generally eaten with salted tea.
19.	*Silene conoidea*	--	Caryophyllaceae	Leaves	Leaves are used as vegetable.
20.	*Solanum tuberosum*	Shueg halu, Halu	Solanaceae	Tubers	Tubers are eaten with chutneys.
21.	*Urtica dioica*	Choya kan	Urticaceae	Leaves	Young leaves are eaten as vegetable.
22.	*Vicia faba*	Cheshtan	Papilionaceae	Seeds	Roasted seeds are eaten especially in festival *'Mistoo'*.
23.	*Vitis vinifera*	Dakhang	Vitaceae	Fruits	Grape wine popularly known as '*Angoori'* is prepared from the fermented fruits/grapes and locals consume it during marriages, festivals and special occasions.

4. Conclusion

In the present era, where everything is available with ease, no one or only few people are interested in growing and utilizing these traditional food crops. Current agricultural systems are focused only in promoting cultivation of a very limited number of crop species due to which indigenous crops are neglected and underutilized. Not only this the common interest of people are shifted towards earning and instead of adopting these traditional food plants they show their interests towards cash crops such as Apple, Peach, Plum, Potato, Rajma, Pea etc. these cash crops definitely providing more economic opportunities to them in present time but they are ignorant about the harmful effects. As in these cash crops locals are using large amount of pesticides and inorganic fertilizers which ultimately affecting human health, soil & water quality and also disturbing the food chains. Traditional food crops are not only resistant to pest and pathogens but also have high nutritional, medicinal and economic values. To increase the production of traditional crops require more awareness about the importance of these traditional food plants, adoption of suitable agro-techniques and proper marketing. In tribal areas where life is very hard and resources are very limited, more production of traditional crops will definitely provide food, nutritional, health and economic benefits to locals. Beside this utilization of wild plant resources in day-to-day life of these tribal people has been an old-age practice which should be preserved for upcoming generations. Unfortunately the traditional collection of wild food plants is now declining due to easy access to conventional vegetables and ignorance of young generation about the health and nutritional benefits. By the development of suitable cultivation techniques of these wild vegetables local people can earn remunerative prices for their livelihoods by growing them in all seasons. Beside this many of these wild food plants may not be available in future due to over-exploitation, habitat destruction, forest fires and invasion of alien exotic species. Hence effort must be taken to conserve these wild food plants and also the traditional knowledge for sustainable management of such a valuable plant resources. Present study concludes that documentation of traditional knowledge on these food plants is basic requirement to extend the production and consumption of these underutilized traditional food plants.

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