



Germplasm Collection of Some Lesser-known Edible Fruits

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For all households to be food secure, each must have physical and economic access to adequate variety of food. Each household must always have the ability, the knowledge and the resources to produce or procure various food items, which are needed in daily life. A balanced diet providing all necessary energy, protein and micronutrients is the major requirement and needs to encourage food distribution that ensures good nutritional status for all the members in a family.

Of more than 50,000 edible plant species in the world, only a few hundred contribute significantly to our food supplies. Just 15 crop plants provide 90 per cent of the world's food energy intake, with three, rice, maize and wheat- making up two thirds of this. Although there are over 10,000 species in the cereal family, few have been widely introduced into cultivation over the past 2000 years. Roots and tubers are important staple food for over 1000 million people in the developing world. They are high in carbohydrate, calcium and vitamin C, but low in protein. Many countries are experiencing a shift away from traditional foods, but there is growing recognition of the importance of traditional crops in nutrition. After years of being considered 'poor people's food' some of these crops now enjoying a comeback and are in great demand.

Indian subcontinent is extremely rich in the plant diversity representing over 17,500 species of plants. All the agro-climate conditions available in the world are present in this country. A well-developed and oldest traditional system of medicines like 'Ayurveda' exists in India, besides a vast emporium of knowledge about plants exists with tribal

and indigenous communities all over the country. Fast urbanization and developmental activities have threatened taking its toll rapidly over the villages in tribal areas. Their dependence on natural resources for daily needs has been minimizing due to shrinking natural resources. As a result, the exhaustive undocumented knowledge available with the tribal is also under threat. Three to four decades back in rural and urban areas the local people sold several lesser-known seasonal fruits. These fruits had immense nutritional, curative and antioxidant properties from the health point of view. But in the fast changing life style and urbanization as well as invasion of several exotic fruits, the lesser-known fruits are gradually vanishing from the markets all over the country.

Some of the important plant species are summarized below:

1. ***Aegle marmelos*** : It is a native to Indo- Malayan region and known in India from the pre-historic period. Fruits are nutritious, containing very high contents of riboflavin. Ripe fruits are laxative where as unripe fruits are used in diarrhoea and dysentery. It is in high demand in Ayurvedic system of medicine.
2. ***Artocarpus lokoocha*** : Originated in India especially in the tarai belt of Uttar Pradesh. Fruits are edible, ill shaped with sweetish sour taste. Due to poor storage properties the use of the plant as food is limited.
3. ***Artocarpus heterophyllus*** : Native to India widely cultivated in Southern Asia. A popular vegetable, tender fruits are eaten. Ripen fruit has high nutritive value. An important source of pectin and contains 1.9 -2.2% protein on fresh weight basis. Liked by the people in eastern and southern parts of India.



4. ***Averrhoa carambola*** : The 'carambola' plant is native to Malaysia. Fruits are used in preparation of jams, jellies and pickles and also used in sliced form in salads. Used as medicine in headache, diarrhoea, nausea and fever.
5. ***Carissa carandus*** : It occurs widely in Western Peninsula, Madhya Pradesh, Rajasthan, Uttar Pradesh and Bihar. Commonly used in preparation of jelly, sauce and carissa cream. Unripe fruits are used for making chutneys and pickles.
6. ***Citrus nobilis* var *delisiosa*** : It is a popular citrus fruit commonly cultivated in Himanchal Pradesh and Punjab. Fruits are bright golden orange in colour having flat base and flavored sweet juice and are the rich source of Vitamin C.
7. ***Cordia dichotoma*** : It is native to India, found commonly in arid and semi-arid regions of western Rajasthan, Gujarat and Uttar Pradesh. Fruits are cooked as vegetable. Unripe fruits are used for preparing pickles. Seed paste is effective in ringworm treatment.
8. ***Feronia limonia*** : A native to India found in Madhya Pradesh and Western Himalayas up to 500 m altitude. It requires a subtropical climate with a distinct dry season. Used as liver and cardio-tonic as astringent in diarrhoea, dysentery, sore throat and gum diseases. The poulticed pulp is good for bites of venomous insects. Fruits are rich in pectin, used in making jellies and chutney.
9. ***Ficus carica*** : The plant is commonly known as 'Anjeer' and its center of origin is in the east Mediterranean region. In India, it is cultivated commercially in Pune district of Maharashtra. Fruits are known for their high medicinal, curative and anti-oxidant properties. The sliced forms of the fruits are available in some of the provision stores and largely consumed to cure constipation and retain vitality as well as vigour.
10. ***F. glomerata*** A deciduous tree is a native to South Asia. The fruit is edible. Native doctors give a fluid, which is yielded by incisions in the root, as a tonic. An infusion of the bark is given in diabetes, and the young leaves reduced to powder and mixed with honey in bilious affections.
11. ***Grewia subinaequalis*** : A native to southern Asia from India east to Cambodia and widely cultivated in other tropical countries. Cultivated for its sweet and sour acidic fruits. The pleasant squash is prepared from the fruit pulp by mixing it with sugar and used as an astringent, and cooling agent. The fruits are good for heart and blood disorders and also used in fever and diarrhea.
12. ***Manilkara hexandra*** : A tropical tree native of South East Asia. The tree occurring throughout the tropics is reported from Cambodia, India, Sri Lanka, Thailand and Vietnam. The plant yields edible fruit, wood and latex. Seeds contain 25% edible oil and are of medicinal value. The young pods are boiled and eaten. The seeds fried/roasted, taste like peanuts.
13. ***Morus indica*** : Originated in northern China and naturalized throughout the warm and temperate regions of the world. It has been grown widely from India for their leaves to feed silkworms. Ripe fruits may be eaten raw, very delicious in taste. Fruit juice is fermented to yield spirituous liquors. Fruits are used to treat premature graying hair, to 'tonify' the blood and treat constipation and also used as cure for diabetes.
14. ***Prunus avium*** : A native to north temperate region but few species also occur in tropics. In India, commonly occurs in Uttarakhand and Himanchal Pradesh. Ripe fruits are used as dessert. Large quantities are canned. Fruits are rich in sugar, ascorbic acid, Vitamin 'A' and most of the minerals.
15. ***Psidium chinense*** : It is an uncommon plant and native of china. Ethnically used as appetizer and cardio tonic.
16. ***Punica granatum*** : It is a native to Iran extensively cultivated in Spain, Morocco, Egypt, Afghanistan, Baluchistan, Myanmar and China.



1. *Artocarpus lokoocha*; 2. *Artocarpus heterophyllus*; 3. *Cordia dichotoma*; 4. *Feronia limonia*; 5. *Ficus carica*; 6. *Morus indica*; 7. *Psidium chinense*; 8. *Punica granatum*; 9. *Pyrus communis*; 10. *Syzygium cuminii*; 11. *Prunus avium*; 12. *Averrhoa carambola*.



In India, mostly cultivated in Maharashtra, Uttar Pradesh, Andhra Pradesh, Karnataka and Tamilnadu. Ripe fruits are consumed fresh. Fruit juice is used to overcome anemia. An excellent drink is made from the fruits and also used for making jam and jelly. Dried seeds are sold as 'anardana'. The fruit rind is very good source of natural dyes being used in India since ancient times.

17. ***Pyrus communis*** : It is a native to north temperate region. In India it is commonly cultivated in Kashmir, Punjab, Himanchal Pradesh and Hills of Uttarakhand. Fruits are eaten as such or crushed to produce juice for beverages and wines. A good quality fruits are canned.
18. ***Syzygium cuminii*** : It is native to India widely distributed in tropical and subtropical parts. Also occurs in Sri Lanka, Malaysia, Thailand, Australia and Philippines. The fruit is very delicious and also a good source of iron apart

from minerals, sugar and protein. Ripe fruits are antibacterial, hypoglycemic and antidiabetic.

These uncommon plants have been successfully established in the garden and it is recommended that they must be conserved as well as grown commercially and popularized among the masses to improve nutritional security levels as well as the curative value of the plants. The origin, economic and medicinal significance of a particular plant species provides an important link for biodiversity and nutrition. Biodiversity at three levels-ecosystems, the species they contain and the genetic diversity within a species-can contribute to food security and improved nutrition. Further research is needed to increase the evidence base by filling our knowledge gaps with better inventories and more data on composition and consumption. It may provide the awareness of food plant varieties and the nutrient proportion of these lesser-known edible plants may help people who suffer from hunger; and ensure environmental sustainability.

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