

## **Neutraceutical value of Minor Fruits**

**Rukhsana Rahman**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**rukhsanarahman786@gmail.com**

**Neeraj Gupta**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**Jaspreet kaur**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**Shristi gupta**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**Manveer kaur**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**Pooja Thakur**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

**Shabnam**

**Assistant Professor, Chandigarh School of Business Chandigarh Group of Colleges,  
Jhanjeri, Mohali**

### **ABSTRACT**

A large number of minor and wild fruit species have originated in Indian subcontinent. Many of these fruits or their plants parts have been used in folk, Ayurvedic and Unani medicines since time immemorial. Several fruits were introduced in India during colonial period. Most of them adapted to climatic conditions of India but remains minor crops. These fruits also have several medicinal properties and were used by the native people of their respective origin of centres. Minor fruits contain several chemical ingredients such flavonoids, quinolizidine, alkaloids, triterpenes, stilbenes, tannins, steroids, coumarin, saponins, triterpenoids, glycosides, taraxerone, cryptoxanthin, taraxerol, etc. These exhibited varied biological effects like anti-inflammatory, analgesic, ant diabetic, antipyretic, antioxidant, hypoglycaemic, hepatoprotective, anticancerous. In recent years the global focus is shifting towards the plant based medicines and there is lot of research is being done on these fruits. Thus an attempt has been made in this article to compile the information available in the minor fruits.

**Keywords:** Antioxidants, medicinal value, minor fruits, neutraceutical properties

## **Introduction**

Fruits that have a market value but are hardly ever found in markets and are not widely grown in the field are considered to be underutilized or minor fruits. Minor fruit crops are perhaps difficult to define precisely and are those that, despite being edible by humans, are substantially less delicious than other common fruits, have lower market demand, are grown to a limited extent only, and are not typically grown in controlled plantations (Hossain *et al.*, 2021). Other names for these fruits include less familiar, less appetizing, less explored, stray fruits, wild fruits and underutilized fruits etc. The indigenous residents use a considerable variety of minor fruit species to satisfy their dietary needs (Ashrafuzzaman *et al.*, 2021).

Even so, distinguishing between the major and minor fruits is difficult. A major fruit in one country or region may be a minor fruit in another country or region. Rambutan, for instance, is a major fruit crop in Indonesia and Malaysia but a minor crop in India. Likewise, mango is the most important crop in India, but it is only considered a minor fruit crop in a few western countries. Another example is the avocado, which is a main commercial fruit in South and Central American countries but a minor fruit in India (Tripathi *et al.*, 2013)

If area and production are used to categorize a fruit crop as major or minor, variations can be seen even within the same country. The climatic conditions are crucial for agriculture since they affect the crop's distribution and growing space. In contrast to other areas of the country, this causes some fruits to grow widely over a big area in a region. The temperate fruits, such as pear, plum, peach and apple etc., are known to make up the majority of the harvests in Himachal Pradesh, Uttarakhand and Kashmir, but some less chilling cultivars are produced to a small rate in the hills of South India. Similar to how tropical fruit crops are grown as the main fruit crops in South India, they are viewed as minor crops in some regions of North India. In Uttarakhand, Bihar, West Bengal and the North East, litchi is a major crop; in other areas, it is a minor crop (Tripathi *et al.*, 2019). Determining which crops are minor crops is therefore challenging. However, it is possible to categorize crops as minor crops based on their production and consumption. Minor crops can be divided into numerous categories, including tropical and subtropical, native and introduced.

The Indian subcontinent is the origin of many fruit plant species. Jackfruit, bael, aonla, ber, khejri, jamun, tamarind, mahua, phalsa, Lasoda, karonda, wood apple, pilu, bilimbi, Garcinia, and a number of other wild fruits are all indigenous to India. Numerous minor fruits, including Rambutan, mangosteen, longan, avocado, water apple, hog plum, macadamia nut, kiwifruit, longsats, durian, passion fruit, dragon fruit, pulasan, and carmbola, were introduced to India in recent centuries, and many of them have since been adapted to the country's climate (Table 1). In addition to these, there are more than 100 native wild fruits of India that are edible but have not yet been domesticated. Local and tribal people collect these from the forest and sell them in the rural areas (Tripathi 2021).

The minor fruits, however, have been progressively neglected in preference to commercial fruits in recent years. These wild fruits are also becoming scarce in their natural environments as a result of habitat degradation and due to rapid urbanization. Therefore, it is essential to describe these lesser-known fruits in order to raise public awareness of them, preserve them together with the related ethnobotanical knowledge, and study their commercial potential.

**Table 1 Common Names, Scientific Names and Family of different Minor fruits.**

Common Name	Scientific Name	Family	Common Name	Scientific Name	Family
Jack fruit	<i>Artocarpus heterophyllus</i>	Moraceae	Rose Apple	<i>Syzygium jambos</i>	Myrtaceae
Ber	<i>Ziziphus jujuba</i>	Rhamnaceae	Pommelo	<i>Citrus grandis</i>	Rutaceae
Jamun	<i>Syzygium cumini</i>	Myrtaceae	Sea Buckthorn	<i>Hippophae rhamnoides</i>	Elaeagnaceae
Aonla	<i>Emblica officinalis</i>	Euphorbiaceae	Woodapple	<i>Ferronia limmonia</i>	Rutaceae
Star gooseberry	<i>Phyllanthus acidus</i>	Euphorbiaceae	Yellow mangosteer	<i>Garcinia xanthochymus</i>	Clusiaceae
Jherberi	<i>Ziziphus nummularia</i>	Myrtaceae	Kokum	<i>Garcinia indica</i>	Clusiaceae
Citron	<i>Citrus medica</i>	Rutaceae	Governor's Plum	<i>Flacortia indica</i>	Flacourtiaceae
Bael	<i>Aegle marmelos</i>	Rutaceae	Hickory	<i>Carya tomentosa</i>	Juglandaceae
Phalsa	<i>Grewia tiliifolia</i>	Malvaceae	Mahua	<i>Madhuca indica</i>	Sapotaceae
Tamarind	<i>Tamarindus indica</i>	Fabaceae	Indian Almond	<i>Terminalia catappa</i>	Combretaceae
Pilu	<i>Salvadora oleoides</i>	Salyadoraceae	West Indian Cherry	<i>Malpighia glabra</i>	Malpighiaceae
Ker	<i>Capparis decidua</i>	Capparaceae	Malay Apple	<i>Syzygium malaccense</i>	Myrtaceae
Phog	<i>Calligonum polygonoides</i>	Polygonaceae	Durian	<i>Durio zibethinus</i>	Malvaceae
Bilimbi	<i>Averrhoa bilimbi</i>	Oxalidaceae	Mangosteen	<i>Garcinia mangostana</i>	Clusiaceae
Manila Tamarind	<i>Pithecellobium dulce</i>	Fabaceae	Soursop	<i>Annona muricata</i>	Annonaceae
Avocado	<i>Persia americana</i>	Lauraceae	Rambutan	<i>Nephelium lappaceum</i>	Sapindaceae
Dragon fruit	<i>Hylocereus.spp</i>	Cactaceae	Passion fruit	<i>Passiflora edulis</i>	Passifloraceae
Longan	<i>Dimocarpus longan</i>	Sapindaceae	Custard Apple	<i>Annona squamosa</i>	Annonaceae

Kiwifruit	<i>Actinidia chinensis</i>	Actinidiaceae	Atemoya	<i>Annona atemoya</i>	Annonaceae
Java Apple	<i>Syzygium samarangense</i>	Myrtaceae	Egg fruit	<i>Pouteria campechiana</i>	Sapotaceae
Surinam Cherry	<i>Eugenia uniflora</i>	Myrtaceae	Carambola	<i>Averrhoa Carambola</i>	Oxalidaceae

**Source (Sharma *et al.*, 2019, Tripathi *et al.*, 2020)**

**Neutraceutical Value of Minor Fruits**

Nowadays, Consumers are becoming more aware of the health and nutritional aspects of their diet choices. The trend is to avoid chemicals and synthetic food products in favor of nutrition obtained from natural resource. These minor fruits are the primary source of income for the poor as well as play an important role in combating malnutrition. The minor fruit cultivars contribute significantly to the rural populations' ability to maintain their standard of living in many of the following ways (Srivastava *et al.*, 2017)

In essence, minor fruits provide not only the necessary nutrients, vitamins, and minerals, but also a means of subsistence due to their healing and nourishing qualities (Das, 2021). They have been associated with the community's cultural history, with localized traditional crops, and with the neglect of agricultural research groups.

These small fruits are beneficial for seasoning, ageing, and fermenting savoury, processed foods and beverages because they offer a variety of healing and curative qualities, including fragrant, cooling, digestive, stomachic, stimulant, astringent, and moisturizing. Several other fruits have unique attributes, including those that are diuretic, diaphoretic, soothing or stimulant to nerves, improver of peristaltic movements of the bowel and liver illness, soothing cough, cardio tonic, cold, asthmatic spasm, pneumonia, blood pressure, etc. Few minor fruits have carminative and germicidal abilities and contain essential oils in their peel, leaf, or roots. In addition to their health properties, these fruits give our bodies sustenance, endurance, and vitality as well as replenish lost minerals and amino acids, defending our bodies from numerous deficits and diseases. Other minor fruits, such as *Artocarpus* spp., are a rich source of ascorbic acid in the region. It was discovered that bel, wood apple, and amla are excellent calcium sources (Mazumdar, 2004, Abhishek *et al.*, 2017). The therapeutic function of nutrients is one of their potential uses, and the medicinal value is subordinate to the nutraceutical value. As a result, several minor fruits may have medicinal benefits. There is also a significant ethno-botanical heritage of folk medicine from all the nations that have preserved knowledge about the therapeutic properties of fruits, whether they were harvested from nature or were grown, since ancient times (Ashok *et al.*, 2020)

## Conclusion

Therefore minor fruits will help to combat a number of nutrition-related issues if more people are made aware of the benefits of using these minor fruits. The potential for using these crops in various exciting value-added products for the food and nutraceutical industries is enormous. The value-added product can fill the gap left by the lack of new products on the market and fulfil the needs of nutritional security and a healthy, safe living.

## References

- Ashrafuzzaman, M. Most. Morsada Khatun, Noshin A. Tunazzina and A.K.M. Golam Sarwar. Conservation of minor fruit genetic resources at the Botanical Garden, Bangladesh Agricultural University. *International Journal of Minor Fruits, Medicinal and Aromatic Plants*, 2021. 7 (1): 1-18.
- Das, Anuradha. Ethno-medicines used by Santals & Paharias for treating skin diseases. *International Journal of Minor Fruits, Medicinal and Aromatic Plant*. 2021, 7(1): 89-97.
- Hossain, Md., Rahim, Md & Haque, Md. Biochemical and nutritional status of some important underutilized minor fruits. (2021). *Journal of Agriculture and Food Research*. 5. 100148.
- Srivastava, A.; Bishnoi, S. K. and Sarkar, P. K. Value Addition in Minor Fruits of Eastern India: An Opportunity to Generate Rural Employment. In: Dutta, A. K. and Mondal, B. (Eds.), *Fruits for Livelihood: Production Technology and Management Practices* Published by Agrobios (India), Jodhpur, India. 2017, pp. 395-417.
- Ashok, A., Ravivarman, J. & Kayalvizhi, K. Nutraceutical Values of Minor Fruits on Immunity Development to Combat Diseases. *International Journal of Current Microbiology and Applied Sciences*. 2020, 9. 1303-1311.
- Abhishek M., D. Thangadurai, J. Sangeetha, B. Shivanand and Ravi H. Unexploited and underutilized wild edible fruits of western Ghats in southern India. *Scientific Papers. Series A. Agronomy*.2017. 2:326-339.
- Mazumdar B.C. *Minor Fruit Crops in India*, Daya Publishing House, New Delhi.2004.
- Tripathi, P. C., and Karunakaran. G. Production technologies of minor fruits with special emphasis on Kodagu held at Madikeri , Karnataka during November 27- 29, Souvenir and Abstracts. 2014, Pp. 97-105.
- Tripathi, P., Shetti, D & Rupa, T. Studies on nutrient analysis of some important minor fruits of tropical India. *Progressive Horticulture*. 2020, 51. 135-142.

Tripathi, P.C., Karunkaran, G., Sankar, V. and Kumar, R, S. Survey and Conservation of Indigenous Fruits of Western Ghats. *Journal of Agricultural Science and Technology*. 2015, (5) : 608-615.

Tripathi, Prakash. Medicinal and theraptic properties of minor fruits - A Review. *International Journal of Minor Fruits, Medicinal and Aromatic Plants*. 2021, 7. 1-28.

Sharma,D,R., Patidar,J., Pachauri, D, R and Tripathy, S. Contribution of minor fruits crops to household nutritional security and health for rural population. *International Journal of Chemical Studies*.2019, 7(3): 2942-2949.