NEUTRACEUTICAL VALUE OF MINOR FRUITS

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1. 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, longsat, 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	Artocarpus heterophyllus	Moraceae	Rose Apple	Syzygium jambos	Myrtaceae
Ber	Ziziphus jujuba	Rhamnaceae	Pommelo	Citrus grandis	Rutaceae
Jamun	Syzygium cumini	Myrtaceae	Sea Buckthorn	Hippophae rhamnoides	Elaegnaceae
Aonla	Emblica officinalis	Euphorbiaceae	Woodapple	Ferronia limmonia	Rutaceae
Star gooseberry	Phyllanthus acidus	Euphorbiaceae	Yellow mangosteer	Garcinia xanthochymus	Clusiaceae
Jherberi	Ziziphus nummularia	Myrtaceae	Kokum	Garcinia indica	Clusiacaea
Citron	Citrus medica	Rutaceae	Governor's Plum	Flacortia indica	Flacourtiaceae
Bael	Aegle marmelos	Rutaceae	Hickory	Carya tomentosa	Juglandaceae
Phalsa	Grewia tiliifolia	Malvaceae	Mahua	Madhuca indica	Sapotaeceae
Tamarind	Tamarindus indica	Fabaceae	Indian Almond	Terminalia catappa	Combretacea
Pilu	Salvadora oleoides	Salyadoraceae	West Indian Cherry	Malpighia glabra	Malpighiaceae
Ker	Capparis decidua	Capparaceae	Malay Apple	Syzygium malaccense	Myrtaceae
Phog	Calligonum polygonoides	Polygonaceae	Durian	Durio zibethinus	Malvaceae
Bilimbi	Averrhoa bilimbi	Oxalidaceae	Mangosteen	Garcinia mangostana	Clusiaceae
Manila Tamarind	Pithecellobium dulce	Fabaceae	Soursop	Annona muricata	Annonanceae
Avocado	Persia americana	Lauraceae	Rambutan	Nephelium lappaceum	Sapindaceae
Dragon fruit	Hylocereus.spp	Cactaceae	Passion fruit	Passiflora edulis	Passifloracear
Longan	Dimocarpus longan	Sapindaceae	Custard Apple	Annona squamosa	Annonaceae
Kiwifruit	Actinidia chinensis	Actinidiaceae	Atemoya	Annona atemoya	Annonaceae
Java Apple	Syzygium samarangense	Myrtaceae	Egg fruit	Pouteria campechiana	Sapotaecae
Surinam Cherry	Eugenia uniflora	Myrtaceae	Carambola	Averrhoa Carambola	Oxalidaceae

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

2. 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)

3. 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.

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