



---

**UNDERUTILISED FRUITS: A POTENTIAL OF LOCAL FOOD RESOURCE**

**SRIVASTAVA R.\***

*Experimental Botany Lab, Department of Botany  
DDU Gorakhpur University, Gorakhpur (U.P.) – 273009*

**ABSTRACT**

The present investigation deals with the identification, documentation and ethnobotanical exploration with respect to food value of 27 underutilised edible fruits consumed by ethnic people of north-eastern terai region of U.P. Most of the plant species are of high economic, nutritious food potential. The database of these fruits may be helpful in bioprospection for achieving food security and environmental sustainability.

**KEY WORDS:** Underutilised fruits, Food potential



**SRIVASTAVA R.**

Experimental Botany Lab, Department of Botany DDU  
Gorakhpur University, Gorakhpur (U.P.) – 273009

## INTRODUCTION

Underutilised fruits are highly nutritious and important source of food (Arora & Pandey, 1996). The ethnic people residing in the fringe of the forest are dependent on these potential local food resources (Kamal, 2004). Recently, the use of underutilised fruits as a food has increased due to improvement and hybridization in cultivated fruit plants. On the other hand increase in urbanization and gradual exploration of forest and waste land has lead to the threat of the extinction of underutilised plant species (Deshmukh et. al., 2010). Ethnic people still use them extensively for their food and nutritional requirements (Nautiyal & Kaul, 2003). Some are preserved for use during periods of famine and scarcity. They are sometimes sold in the market. Although, the popularity of these underutilised fruit has declined. It is necessary to pay special attention to maintain and improve this important source of food supply. Some botanical exploration, documentation and publications have emphasized in respect to the diversity and potential of local food resource of underutilised fruits (Jain, 1995). But the information available of these species is rather scanty. Therefore, the exploration and bioprospection of underutilised edible fruits may increase and create awareness about the nutritional status of ethnic people. This investigation deals with the identification, documentation and ethnobotanical exploration with respect to food value of underutilised fruits consumed by ethnic people of north-eastern terai region of U.P. (India). The area falls in sub-Himalayan foot hills of Indo-Nepal, adorned with rich vegetation. The maximum area is occupied by ethnic communities. The present investigation was conducted to explore and identify the underutilised fruit plant resources.

## MATERIALS AND METHODS

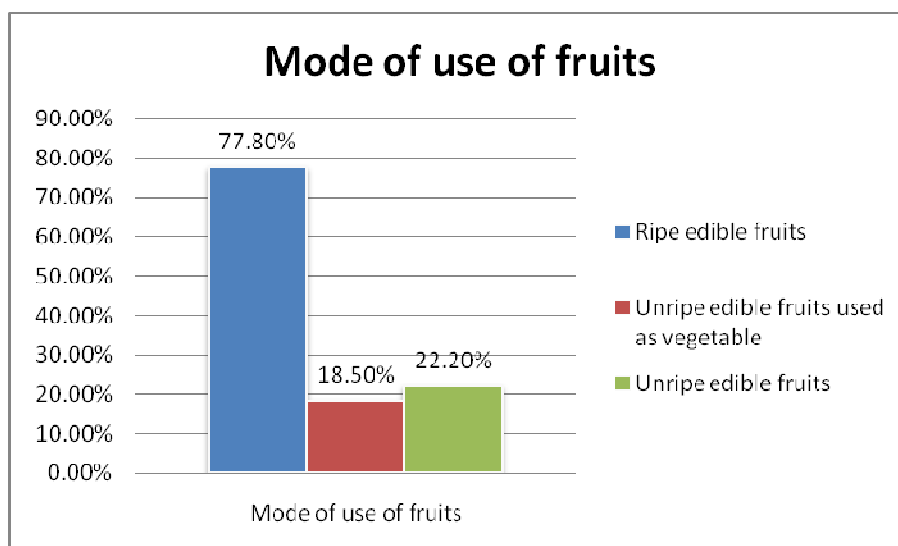
Frequent botanical excursions are arranged at different localities of the study area to collect the plant specimens. The collected specimens are preserved by herbarium technique. Prepared herbarium sheets are identified with the help of experts from Department of Botany, DDU Gorakhpur University, Gorakhpur and different Floras (Flora of Gorakhpurensis by T.N. Srivastava, 1976, Flora of Duthie, 1960, Flora by Singh 1969 and Flora by Kritikar and Basu, 1933). The collected fruits are then dried and preserved by following the technique (Jain and Rao, 1967). Photographs of the specimens are taken for further details. Ethnobotanical knowledge was documented through a questionnaire (Kala 2000). During field visits, interviews were conducted from 34 local people especially older people of local communities.

## OBSERVATIONS AND DISCUSSION

During this investigation a total no. of 27 fruit plants are collected and stored with detailed information regarding scientific name, common name, purpose of uses for future reference and study (Table 1). Out of which 21 species belongs to trees, 2 species belongs to shrubs, 2 species belongs to herbs and 2 species belongs to twiners and climbers. These are characterised into (i) ripe edible fruits; (ii) unripe fruits used as vegetables (iii) unripe edible fruits (Diagramme 1). Majority of the fruits are eaten raw when ripe. It is the sweetish pulp or the fleshy pericarp of ripe berries or drupes. Thus, the species recorded in present investigation are found potential and promising role as a dietary supplement in the food habits of the tribal and other ethnic communities.

**Table 1**  
**Underutilised Fruits used as food**

S.No.	Scientific Name	Family	Common Name	Habit and Uses
1	<i>Aegle marmelos</i> (L) Correa	Rutaceae	Bael	Medium sized tree Ripened fruits eaten and also used in sharbat
2	<i>Annona squamosa</i> L.	Annonaceae	Shareefa	Small deciduous tree Ripened fruits are eaten
3	<i>Anthocephalus cadamba</i> Roxb.	Rubiaceae	Kadamba	Large tree with a broad crown and straight cylindrical bole Fruits eaten as raw
4	<i>Artocarpus lakoocha</i> Roxb.	Moraceae	Barhar	Medium sized tree Ripened fruits are eaten
5	<i>Carissa carandas</i> L.	Apocynaceae	Karonda	Small to big shrub Fully ripened fruits are consumed fresh and immature fruits are used in pickles
6	<i>Coccinia grandis</i> L.	Cucurbitaceae	Kundroo	Twining shrub Fruits are used as vegetable
7	<i>Cordia myxa</i> L.	Boraginaceae	Lasora	Medium sized deciduous tree Mature seeds are eaten as raw and also used in pickles and chutney
8	<i>Emblica officinalis</i> Gartn.	Euphorbiaceae	Aonla	Small to medium sized tree Fruits are used to prepare Morabba, pickles and chutney
9	<i>Ficus benghalensis</i> L.	Moraceae	Bargad	Large extensive growing tree Fruits eaten as raw and also used as sharbat
10	<i>Ficus glomerata</i> Linn.	Moraceae	Gular	Deciduous tree Fruits eaten as raw and also used as vegetable
11	<i>Flacourtia jungomas</i> (lour) Raeusch	Flacourtiaceae	Paniala	Small tree Ripened fruits eaten as raw and cooked as jam
12	<i>Grewia subinaequalis</i> D. C.	Tiliaceae	Phalsa	Small to medium sized tree Ripened fruits are eaten as raw and also used in pickles
13	<i>Madhuca indica</i> J. F. Gmel	Sapotaceae	Mahua	Medium to large deciduous tree Fruits are eaten as raw and after drying fruit pulp also used for alcohol production
14	<i>Manilkara hexandra</i> Roxb.	Sapotaceae	Khirmi	Medium to large sized tree Fresh as well as dry fruits are eaten as raw
15	<i>Mimusops elengi</i> L.	Sapotaceae	Maulshree	Medium sized evergreen tree Ripened fruits eaten as raw
16	<i>Moringa oliefera</i> Lam.	Fabaceae	Sahijan	Small tree Fruits are used as vegetables
17	<i>Morus alba</i> L.	Moraceae	Sufaid Shahtoot	Short lived fast growing small to medium sized tree Fruits eaten as raw
18	<i>Morus indica</i> L.	Moraceae	Shahtoot	Small deciduous tree Fruits eaten as raw
19	<i>Morus nigra</i> L.	Moraceae	Kala Shahtoot	Deciduous tree Fruits eaten as raw and also used in pickles and chutney
20	<i>Mucuna pruriens</i> (L.)D.C.	Fabaceae	Badi Kewanch	Annual climbing shrub Fruits are used as vegetables
21	<i>Physalis minima</i> L.	Solanaceae	Rasbhari	Perennial herb Ripened fruits are eaten as raw
22	<i>Pithecellobium dulce</i> Roxb.	Fabaceae	Jungali julebi	Thorny deciduous tree Fruit eaten as raw
23	<i>Solanum nigrum</i> L.	Solanaceae	Kali Mukaiya	Short lived herb or shrub Fruit eaten as raw
24	<i>Spondia pinnata</i> (L.F.) kurz.	Anacardiaceae	Amla	Small deciduous tree Ripened fruits are used in pickles
25	<i>Syzygium cumini</i> L.	Myrtaceae	Jamun	Medium to large sized evergreen tree Ripened fruits are eaten as raw
26	<i>Xeromphis uliginosa</i> (Retz) Maheshwari	Rubiaceae	Pindar	Small tree Unripened fruits are used as vegetable
27	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Ber	Spiny shrub or small tree Ripened fruits eaten as raw



## CONCLUSION

This investigation contributes the database of traditional knowledge of 27 underutilised fruits as a local food resource. Majority of the plant species (77.80 %) are used as ripened raw fruits. Some unripe fruits (18.50 %) are used as vegetable and some (22.20 %) are used in pickles and other products like Morabba, Sharbat and alcohol production (e.g. *Madhuka indica*). The current status of underutilised fruit plants calls for an urgent need of research and development effort for its conservation, bioprospection and sustainable utilization. This will also helpful in further investigation of other underexploited potential of underutilised edible fruits. As a result, it may open avenues

of opportunity for scientific validation creating awareness and improving the economy of ethnic community.

## ACKNOWLEDGEMENT

The financial support under the Women Scientist Scheme of Department of Science and Technology is gratefully acknowledged for providing financial assistance and also thankful to Department of Botany, DDU Gorakhpur University, Gorakhpur (UP) India for providing expertise in identification of plant species.

## REFERENCES

1. Arora, R.K. and Pandey, A., Wild edible plants of India, Malhotra Publishing House, New Delhi. (1996).
2. Deshmukh, B.S. and Shinde, V., Fruits in the wilderness: A potential of Local food resource, Int. Jr. of Pharma and Bio Sciences VI-2 (2010).
3. Duthie, J.F. Flora of upper gangetic plain and of the ancient Siwalik and Sub Himalayan tract (Rep. ed.), Botanical Survey of India, Calcutta (1960).
4. Jain, S.K. A manual of Ethnobotany, 2<sup>nd</sup> edn. Scientific publishers, Jodhpur, India. (1995).
5. Jain, S.K. and Rao, R.R. A handbook of field and herbarium methods, Today and Tomorrow Printers and Polishers, New Delhi, 33-58. (1967).
6. Kala, C.P. Status and Conservation of rare and endangered medicinal plant and in the Indian Trans Himalaya. Biological Conservation, 93: 371-379 (2000).
7. Kamal, Medicinal plants resources of North Eastern Uttar Pradesh, Nat. Symp. Of Med. Plants " Farming Science and Practice for Improving Financial Status of Indian Farmers Vision 21<sup>st</sup> Century and Herbal Trade Fair / Exhibition, June 26-

- 27, DDU Gorakhpur Univ. Gkp. India, pp.54 (2004).
8. Kirtikar, K.R. and Basu, B.D. Indian Medicinal Plants, Lalit Mohan Basu, Allahabad, 2, 1272 (1933).
9. Nautiyal, S and Kaul, A. K. Non Timber forest Products of India, Jyoti Publishers and Distributors, Dehradun (2003).
10. Singh, S.K. Forest Flora of Nichlaur. Ph.D.thesis, Gorakhpur University, Gorakhpur (1969).
11. Srivastava, T.N. Flora Gorakhpurensis, Today and Tomorrow Printer and Publisher. 1-477(1976).