

Cultivating Diversity: Exploring Chhattisgarh's Underutilized Horticultural Crops

Maneesh Sonkar

M.Tech Scholar, SV College of Agricultural Engineering and Technology and Research Station, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh-492012

*Corresponding Author: sonkarmaneesh54@gmail.com

Chhattisgarh, a state located in central India, is endowed with rich agricultural diversity and fertile lands that support the cultivation of a wide variety of crops. While traditional crops like rice, wheat, and pulses dominate the agricultural landscape, there exists a treasure trove of underutilized horticultural crops in Chhattisgarh that hold immense potential for both farmers and consumers. These lesser-known crops, often overlooked in mainstream agriculture, offer unique benefits in terms of nutrition, sustainability, and market value.

The underutilized horticultural crops in Chhattisgarh presents an opportunity to diversify agricultural practices, enhance food security, and promote sustainable farming methods. These crops, which include indigenous fruits, vegetables, herbs, and seeds, have the potential to thrive in the region's agro-climatic conditions and contribute to the overall agricultural economy of Chhattisgarh. With increasing consumer awareness about health and nutrition, there is a growing demand for exotic and nutrient-rich foods in the market.

Furthermore, these underutilized horticultural crops offer a range of benefits that make them valuable additions to the agricultural landscape of Chhattisgarh. Many of these crops are rich in essential nutrients, antioxidants, and medicinal properties, making them not only nutritious but also beneficial for overall health and well-being. Additionally, their cultivation can contribute to biodiversity conservation, soil health improvement, and sustainable farming practices.

Despite their numerous benefits and market potential, underutilized horticultural crops in Chhattisgarh often face challenges related to awareness, availability, and promotion. Farmers may lack knowledge about the cultivation techniques, market opportunities, and value-added products associated with these crops. Moreover, limited access to quality seeds, technical support, and market

linkages may hinder the widespread adoption of these crops.

In this context, it is essential to explore the untapped potential of underutilized horticultural crops in Chhattisgarh and highlight their significance in promoting agricultural diversity, enhancing nutrition security, and boosting rural livelihoods. By shedding light on the marketing potential, benefits, and availability of these crops, this study aims to create awareness among stakeholders, policymakers, and farmers about the untapped opportunities that lie within the realm of underutilized horticultural crops in Chhattisgarh.

Some of the Underutilized Horticultural Crops available in Chhattisgarh

Chhattisgarh has a diverse agro-climatic condition that is suitable for growing a variety of horticultural crops. Some of the underutilized horticultural crops in Chhattisgarh that have the potential for cultivation and promotion include:

- 1. Mahua (*Madhuca longifolia*):** Mahua is a traditional tree crop native to central India, including Chhattisgarh. The flowers of the Mahua tree are used to produce liquor and the seeds are used in edible oil and traditional medicine. Mahua is rich in sugar content and vitamins and minerals such as Vitamin C, Calcium, and Phosphorus. It is used to produce a fermented drink and edible oil, and its leaves and seeds are used for medicinal purposes. Mahua seeds can contain up to 50% oil as a major component.



Fig. 1 Mahua Seed



Fig. 2 Mahua Seed

2. **Sal Seed (*Shorea robusta*):** Sal seed is another important tree crop found in Chhattisgarh. The seeds are rich in valuable fat (12-14%) and protein and can be used for oil extraction and as a food source. Sal seed is rich in healthy fats and contains fatty acids such as Palmitic acid, Stearic acid, Oleic acid, and Linoleic acid. It is used to extract oil, which is used in cooking and in the treatment of skin ailments and rheumatism.



Fig. 3 Sal Seeds

3. **Chironji (*Buchanania lanzan*):** Chironji, also known as Charoli, is a nut-like seed that grows in the wild in Chhattisgarh. It is rich in protein, fat, and minerals and has various culinary uses.



Fig. 4 Chironji Seeds

4. **Karonda (*Carissa carandas*):** Karonda is a small, sour berry that grows well in the climate of Chhattisgarh. It is used in pickles, chutneys, and traditional medicines. (%) Karonda is rich in Vitamin C and contains other vitamins and minerals such as Calcium, Iron, and Phosphorus. It helps in digestion, boosts immunity, and helps in managing diabetes.



Fig. 5 Karonda Fruit

5. **Ghevda:** Ghevda, also known as Indian guar bean, is a leguminous crop that is drought-tolerant and grows well in Chhattisgarh. The seeds are used for food and fodder.



Fig. 6 Ghevda

6. **Ber (*Eugenia jambolana*):** Ber, also known as Indian plum or Jujube, is a small fruit tree that thrives in the arid regions of Chhattisgarh. The fruits are rich in Vitamin C, antioxidants and minerals. Ber is rich in Vitamin C and contain other vitamins and minerals such as Calcium and Iron. They help in digestion, boost immunity, and promote heart health.

7. **Amla (*Phyllanthus emblica*)**



Fig. 7 Amla

Amla (Indian Gooseberry): Amla is a rich source of Vitamin C (%) and antioxidants (%). It is traditionally used in Ayurvedic medicine and has various culinary applications. Amla is high in Vitamin C and contains other vitamins and minerals such as Vitamin A, Calcium, and Iron. It boosts immunity, helps in digestion, promotes hair growth, and helps in managing diabetes.

8. **Jamun (*Eugenia jambos*):** Jamun is a seasonal fruit with medicinal properties. It is rich in antioxidants (%) and has anti-diabetic properties. Jamun is rich in Vitamin C and contains other vitamins and minerals such as Iron and Calcium. It helps in managing diabetes, boosts immunity, and promotes heart health.

Promoting the cultivation and utilization of these underutilized horticultural crops in Chhattisgarh can help diversify agricultural production, improve farmers' income, and contribute to food security and nutrition in the region. Government support, research initiatives, and market

linkages can play a vital role in encouraging farmers to grow these crops and creating awareness among consumers about their nutritional benefits.

Conclusion

Chhattisgarh is a home to a variety of known underutilized horticultural crops that offer unique advantages in terms of nutrition, sustainability, and market value. These crops, such as Mahua, Sal Seed, Chironji, Karonda, Ghevda, Kusum, Ber, Amla, and Jamun, are packed with essential nutrients, antioxidants, and medicinal properties, making them not only nutritious but also beneficial for overall health. Encouraging the growth and utilization of these underutilized horticultural crops in Chhattisgarh can help diversify agricultural output, boost farmers' earnings, and enhance food security and nutrition in the area. Despite their many benefits and market potential, these crops often struggle with issues like awareness, availability, and promotion. Therefore, it is crucial to uncover the untapped potential of underutilized horticultural crops in Chhattisgarh and emphasize their importance in fostering agricultural diversity, improving nutritional security, and supporting rural livelihoods

References

Ali, A., & Bhattacharjee, B. (2023). Nutrition security, constraints, and agro-diversification strategies of neglected and underutilized crops to fight global hidden hunger. *Frontiers in nutrition*, 10, 1144439.

Meena VS, Gora JS, Singh A, Ram C, Meena NK, Pratibha, Roupael Y, Basile B, Kumar P. (2022) Underutilized Fruit Crops of Indian Arid and Semi-Arid Regions: Importance, Conservation and Utilization Strategies. 8(2):171.

Sinha, Kavita & Khare, Vikrant. (2018). Nutritional and medicinal value of underutilized vegetable crops in India. 2067-2072.

Datta, S., Sinha, B. K., Bhattacharjee, S., & Seal, T. (2019). Nutritional composition, mineral content, antioxidant activity and quantitative estimation of water-soluble vitamins and phenolics by RP-HPLC in some lesser used wild edible plants. *Heliyon*, 5(3), e01431.

Dandsena, Neeta & Shukla, Rashmi & Taqa, Amer. (2023). Value addition of wild and underutilized edible fruits of Bastar region of Chhattisgarh. 12. 2319-7463.

Malhotra, Suresh. (2013). Blue Print for Horticulture Development in Chhattisgarh.

Ebert, A.W. (2014). Potential of Underutilized Traditional Vegetables and Legume Crops to Contribute to Food and Nutritional Security, Income and More Sustainable Production Systems sustainability ,(6), 319-335.

<https://agriportal.cg.nic.in/horticulture/HortiHi/vision.htm>

<https://agriportal.cg.nic.in/horticulture/PDF/Budget/Annual%20Plan%202013-14.doc>

Table 1: Nutritional properties and benefits of underutilized horticultural crops

Crop	Nutritional properties	Health Benefits/Uses
Mahua	<ul style="list-style-type: none"> - High sugar content (sucrose, glucose, fructose, arabinose, few amounts of maltose and rhamnose) - Vitamins and minerals such as Vitamin C, Calcium, and Phosphorus 	<ul style="list-style-type: none"> - flowers are used to produce a fermented drink and seeds are used for edible oil - Leaves and seeds are used for medicinal purposes - Provides an alternative source of income for forest-dependent communities - Can help to conserve forests and biodiversity - Can be used as a sweetener in various dishes
Sal Seed	<ul style="list-style-type: none"> - Rich in healthy fats - Contains fatty acids such as Palmitic acid, Stearic acid, Oleic acid, and Linoleic acid 	<ul style="list-style-type: none"> - Used to extract oil - Oil is used in cooking and in the treatment of skin ailments and rheumatism
Amla	<ul style="list-style-type: none"> - High in Vitamin C - Contains other vitamins and minerals such as Vitamin A, Calcium, and Iron 	<ul style="list-style-type: none"> - Boosts immunity - Helps in digestion - Promotes hair growth - Helps in managing diabetes
Karonda	<ul style="list-style-type: none"> - Rich in Vitamin C - Contains other vitamins and minerals such as Calcium, Iron, and Phosphorus 	<ul style="list-style-type: none"> - Helps in digestion - Boosts immunity - Helps in managing diabetes
Jamun	<ul style="list-style-type: none"> - Rich in Vitamin C - Contains other vitamins and minerals such as Iron and Calcium 	<ul style="list-style-type: none"> - Helps in managing diabetes - Boosts immunity - Promotes heart health
Ber	<ul style="list-style-type: none"> - Rich in Vitamin C - Contains other vitamins and minerals such as Calcium and Iron 	<ul style="list-style-type: none"> - Helps in digestion - Boosts immunity - Promotes heart health
Lasoda	<ul style="list-style-type: none"> - Rich in Vitamin C - Contains other vitamins and minerals such as Calcium and Iron 	<ul style="list-style-type: none"> - Helps in digestion - Boosts immunity - Promotes heart health

* * * * *