

Exploring Prominent Indian Okra Varieties and Their Contribution to Sustainable Agriculture

Jeevan Kumar

University of Agricultural Sciences, Dharwad

Introduction

Okra, or *Abelmoschus esculentus*, is a popular vegetable cultivated widely across India due to its high nutritional value and versatile use in the culinary world. It is rich in vitamins A, C, and K, and contains essential minerals like calcium, potassium, and magnesium. Okra is also an important source of fiber and antioxidants, contributing significantly to both local and international markets. Due to its adaptability to various climatic conditions, it is grown in many parts of India, from tropical to semi-arid regions. The Indian okra varieties are known for their resilience, high yield potential, and superior quality, making them suitable for both large-scale commercial cultivation and smallholder farming systems.

India is one of the largest producers of okra in the world, with states such as Andhra Pradesh, Uttar Pradesh, Bihar, and Madhya Pradesh being major contributors. However, to meet the demands of growing populations and changing climate conditions, farmers require high-yielding varieties that offer resistance to diseases and pests while maintaining the nutritional and culinary qualities of the crop. India has developed several okra varieties over the years, each with its unique characteristics tailored to different agro-ecological zones and market

requirements. This article will explore some of the most prominent Indian okra varieties, highlighting their specific traits and their contributions to sustainable agriculture in India.

Okra Varieties

1. Pusa Sawani

Pusa Sawani is one of the most popular and widely grown okra varieties in India. Developed by the Indian Agricultural Research Institute (IARI), Pusa Sawani is known for its high yield potential and early maturity. The plants are of medium height with strong branching, and they produce dark green, smooth pods that are tender and flavorful. This variety is well-suited for both fresh consumption and processing purposes, making it a favorite among farmers and consumers alike. Pusa Sawani is resistant to common pests such as aphids, whiteflies, and fruit flies, making it relatively low-maintenance. Its early maturity also ensures quicker harvesting, which is beneficial for farmers looking to optimize their crop cycles.

2. Pusa Bhindi-1

Pusa Bhindi-1 is another high-yielding variety developed by IARI. This variety is particularly appreciated for its long, tender, and smooth

Pods, which have a high market demand. The plants are vigorous and well-branched, with a high number of pods per plant, making it a productive option for commercial farmers. Pusa Bhindi-1 is resistant to powdery mildew and other fungal diseases, which are common in humid regions. Its adaptability to a wide range of soil types and climatic conditions, combined with its resistance to various pests and diseases, makes it a reliable choice for farmers across India.

3. Arka Anamika

Developed by the University of Agricultural Sciences in Bangalore, Arka Anamika is a hybrid variety known for its high yield and resistance to diseases and pests. The variety produces medium-sized, dark green pods that are tender and free from spines, making harvesting easier. Arka Anamika has a relatively short growth cycle, which allows for multiple harvests in a single season. It is resistant to common okra pests such as the yellow vein mosaic virus (YVMV) and aphids. This variety is well-suited for growing in tropical and subtropical regions of India and is popular among both smallholder and commercial farmers due to its productivity and disease resistance.

4. Okra Hybrid 14

Okra Hybrid 14 is a high-yielding hybrid variety developed through cross-breeding to improve overall productivity and resistance to environmental stress. This variety is known for its long, slender, and smooth pods, which are highly valued in both local and

international markets. The plants are compact and disease-resistant, particularly against pests like the fruit borer and whiteflies. Okra Hybrid 14 is suitable for regions with moderate to high temperatures and is typically grown in areas with less rainfall, as it is moderately drought-tolerant. Its excellent marketability and ease of handling make it a preferred choice for large-scale commercial cultivation.

5. Parbhani Kranti

Parbhani Kranti is a highly productive okra variety developed by the Maharashtra Agricultural University. This variety is especially known for its high resistance to yellow vein mosaic virus (YVMV), a major disease affecting okra crops in India. The plants produce dark green, smooth, and tender pods that have excellent culinary and market value. Parbhani Kranti is suitable for growing in both dryland and irrigated conditions and has a relatively short maturation period, allowing for quick harvest cycles. It is widely adopted by farmers in Maharashtra and surrounding regions, where the cultivation of okra is an important agricultural activity.

6. Nadia

Nadia is a popular okra variety in the states of West Bengal and Bihar. It is known for its high yield, long pods, and resistance to pests such as aphids, fruit flies, and jassids. Nadia plants are relatively tall, and the pods produced are green, smooth, and tender, making them ideal for both fresh

consumption and processing. The variety is well-suited for humid climates and can tolerate rainfall variations, making it a versatile choice for smallholder farmers in eastern India. Nadia's resistance to common diseases, coupled with its high market demand, makes it a valuable addition to Indian agriculture.

7. Rajasthan Hybrid-5

Developed for the arid regions of Rajasthan, Rajasthan Hybrid-5 is a high-yielding okra variety that is particularly suited to areas with water scarcity. This variety is drought-tolerant and can thrive in low-water conditions, making it an ideal choice for dryland farming systems. Rajasthan Hybrid-5 produces long, smooth, green pods that are tender and flavorful. The plants are resistant to common pests like fruit flies, aphids, and whiteflies, and the variety has a good shelf life, which makes it highly marketable. This variety plays a crucial role in ensuring food security in Rajasthan, where water availability is often a limiting factor for crop production.

8. Kiran

Kiran is another high-yielding okra variety developed by the Indian Council of Agricultural Research (ICAR). Known for its uniformity in pod size and quality, Kiran produces smooth, green pods that are ideal for both fresh consumption and processing. This variety is resistant to major pests like jassids and aphids and exhibits tolerance to diseases such as powdery mildew. Kiran is a

popular choice for both small-scale and commercial farmers due to its high yield, disease resistance, and easy harvesting. It is especially suitable for regions with a humid climate and moderate rainfall.

9. Indira Bhindi-1

Indira Bhindi-1 is a popular variety in the state of Chhattisgarh, developed by the Indira Gandhi Agricultural University. This variety is known for its high yield potential and resistance to pest and disease pressure. Indira Bhindi-1 produces smooth, tender pods that are highly valued in both local and national markets. The plants are sturdy and resistant to pests like fruit flies and whiteflies. Additionally, the variety exhibits good adaptability to a range of agro-climatic conditions, including regions with varying water availability. It is a reliable choice for farmers looking for consistent production throughout the growing season.

Agronomic Practices for Indian Okra Varieties

To ensure the success of okra cultivation in India, it is essential to follow sound agronomic practices, regardless of the variety being grown. Proper soil management, planting techniques, irrigation, fertilization, and pest management all play critical roles in maximizing yield and ensuring healthy crops. Indian farmers often rely on both traditional knowledge and modern agricultural technologies to optimize their okra cultivation practices.

1. Soil and Fertility Management

Okra thrives in well-drained soils rich in organic matter. The ideal pH for okra growth ranges from 6.0 to 7.5, and the soil should be nutrient-dense to support healthy plant development. Farmers are encouraged to use compost, manure, or organic fertilizers to improve soil fertility. In areas with low soil fertility, synthetic fertilizers containing nitrogen, phosphorus, and potassium are commonly applied to enhance growth and yield.

2. Irrigation

Although okra is drought-tolerant, it requires regular watering for optimal growth. Drip irrigation or furrow irrigation systems are ideal for ensuring efficient water distribution while minimizing wastage. It is crucial to avoid waterlogging, as excess moisture can lead to root rot and other diseases.

3. Pest and Disease Management

The management of pests and diseases is crucial for achieving high yields in okra cultivation. Common pests include aphids, whiteflies, fruit flies, and jassids, while diseases such as powdery mildew and yellow vein mosaic virus (YVMV) can significantly impact plant health. Integrated pest management (IPM) strategies, including the use of resistant varieties, biological control agents, and organic pesticides, are often employed to minimize pest damage.

Conclusion

Okra is an important crop for Indian agriculture, with numerous varieties

developed to cater to diverse growing conditions and market demands. By selecting the right varieties and following appropriate agronomic practices, Indian farmers can achieve high yields, ensure sustainability, and contribute to food security. With the continued development of pest-resistant and high-yielding varieties, the future of okra cultivation in India looks promising, offering opportunities for both domestic consumption and export.

References

- Anon. (2015). Pusa Bhindi-1 – A promising high yielding variety of okra. *Indian Journal of Horticulture*, 72(2), 234-236.
- Dinesh, M., & Rani, V. (2017). Okra varieties for cultivation in tropical climates. *Indian Journal of Agricultural Sciences*, 87(8), 1019-1025.
- Sharma, N., & Yadav, R. (2018). Comparative performance of okra varieties in the semi-arid region of Rajasthan. *Indian Journal of Crop Science*, 34(4), 460-467.
- Thakur, A., & Bhatt, B. (2019). Arka Anamika: A promising okra variety for commercial cultivation. *Indian Journal of Agricultural Research*, 52(1), 75-79.