

## Spine Gourd: Economic Significance, Utilization and Market Potential in Chhattisgarh

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### Abstract

Spine gourd (*Momordica dioica* Roxb.), locally known as kakora or kantola, is a nutritionally rich and economically valuable underutilized vegetable crop predominantly found in the forested and tribal regions of Chhattisgarh. The crop is highly appreciated for its nutritional composition, medicinal properties, and seasonal market demand during the monsoon months. Collection and marketing of wild fruits provide an important source of supplementary income for tribal and rural households. Despite its significant commercial potential, large-scale cultivation remains limited due to the scarcity of quality planting material, inadequate production technologies, and low farmer awareness. Scientific cultivation, dissemination of improved varieties, efficient propagation techniques, and value-addition initiatives can enhance productivity, strengthen livelihood opportunities, and promote sustainable utilization of this indigenous vegetable crop.

**Keywords:** spine gourd, kakora, underutilized vegetable, tribal livelihood, market potential.

### Introduction

Spine gourd (*Momordica dioica* Roxb.) is a perennial dioecious cucurbitaceous vegetable native to the Indian subcontinent and widely distributed across tropical and subtropical regions (Singh *et al.*, 2018). In Chhattisgarh, the crop occurs naturally in forests and wastelands and constitutes an important component of the traditional diet of tribal communities. Owing to its high nutritional value, medicinal importance, and adaptability to diverse agro-climatic conditions, spine gourd has attracted increasing attention as a promising crop for nutritional security and livelihood enhancement (Rashid *et al.*, 2020). However, its commercial cultivation remains limited because

of inadequate domestication efforts, lack of improved varieties, and insufficient awareness regarding scientific production practices (Kumar *et al.*, 2022).

### **Economic Importance**

Spine gourd contributes significantly to the rural economy of Chhattisgarh, particularly among tribal and forest-dependent households. Fruits harvested from natural habitats are sold in village and urban markets, generating seasonal income during the monsoon period (Yadav *et al.*, 2021). Owing to its limited availability and strong consumer demand, the crop often commands premium market prices compared with many conventional vegetables. Improved cultivars such as Indira Kankoda-1 and Chhattisgarh Kankoda-2 have demonstrated higher productivity and offer substantial opportunities for commercial cultivation (Kumar *et al.*, 2022). Expansion of cultivated area, coupled with improved production practices, can enhance farm profitability, generate employment, and strengthen livelihood security in rural areas (Pandey *et al.*, 2020).

### **Uses of Spine Gourd**

Spine gourd is widely consumed as a vegetable, with its tender fruits used in a variety of traditional dishes. Unlike bitter melon, its fruits are less bitter and more palatable, increasing consumer acceptance. In addition to fruits, young leaves, flowers, and seeds are also edible. The crop is rich in essential nutrients such as proteins, vitamins (notably vitamin C and carotene), minerals, and dietary fiber, thus contributing to nutritional security. Moreover, it possesses several medicinal properties and is traditionally used for treating ailments such as fever, diabetes, inflammation, and digestive disorders. Ethnomedicinal uses of spine gourd are well documented among tribal communities of central India (Singh *et al.*, 2018; Kumar *et al.*, 2022).

### **Demand in Chhattisgarh**

The demand for spine gourd in Chhattisgarh is steadily increasing due to its unique taste, nutritional benefits, and seasonal availability. It is highly preferred during the monsoon season when it appears in local and urban markets. Urban consumers consider it a delicacy, which results in higher market prices. However, the supply is limited as most of the produce is collected from wild sources rather than cultivated systematically. This mismatch between demand and supply highlights the significant potential for expanding its cultivation and commercialization in the state (Kumar *et al.*, 2022).

### **Constraints and Opportunities**

The cultivation of spine gourd faces several challenges, including its dioecious nature, low seed germination, difficulty in vegetative propagation, scarcity of quality planting material, and

limited technical knowledge among farmers (Kumar *et al.*, 2022). Nevertheless, these constraints offer substantial opportunities for research and development. Introduction of improved varieties, standardization of propagation techniques, and promotion of scientific cultivation practices can significantly enhance productivity and profitability (Meena *et al.*, 2022). Furthermore, value addition, processing, and market-oriented production systems can increase farmers' income and improve livelihood security (Pandey *et al.*, 2020).

## Conclusion

Spine gourd is a high-value indigenous vegetable with considerable potential for improving nutritional security, livelihood resilience, and sustainable agricultural development in Chhattisgarh. Its increasing market demand, premium pricing, and adaptability to local conditions make it an attractive enterprise for small and marginal farmers (Yadav *et al.*, 2021). Promotion of improved varieties, scientific cultivation techniques, quality planting material production, and value-addition interventions can facilitate wider adoption and commercialization (Kumar *et al.*, 2022). Strategic support through research, extension services, and market development initiatives will be essential for unlocking the full economic potential of this underutilized crop (Meena *et al.*, 2022).

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