



GI-Tagged Vegetables of India: Preserving Heritage, Protecting Farmers

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India is home to an extraordinary diversity of vegetables that have evolved over centuries under unique agro-climatic conditions and traditional farming practices. Many of these vegetables possess distinct qualities in terms of taste, aroma, texture, nutritional value, and adaptability, making them unique to specific geographical regions. The **Geographical Indication (GI)** tag is an intellectual property right that recognizes and protects such region-specific products by linking their quality and reputation to their place of origin. GI registration not only safeguards traditional knowledge but also enhances market value, prevents misuse of product names, improves farmers' income, and promotes rural development. Several vegetables from different states of India have received GI recognition, reflecting the country's rich agricultural heritage. These vegetables include famous products such as Mattu Gulla brinjal, Vazhakulam pineapple, Sirsi Supari, Kandhamal turmeric, and numerous region-specific crops with exceptional characteristics. Increasing awareness about GI-tagged vegetables encourages consumers to choose authentic products while motivating farmers to conserve indigenous varieties. This article highlights the concept of GI, its significance, major GI-tagged vegetables of India, benefits to farmers and consumers, challenges in commercialization, and future opportunities for promoting India's traditional vegetable wealth.

Keywords: Geographical Indication, GI Tag, Indigenous vegetables, Traditional varieties, Intellectual Property Rights, Vegetable diversity, Farmers, India

Introduction

India is recognized as one of the world's richest centers of agricultural biodiversity. From the snow-covered Himalayan valleys to the tropical coastal plains, every region cultivates vegetables that possess unique characteristics shaped by local climate, soil, culture, and traditional farming knowledge. Many of these vegetables have been cultivated for generations and have become an integral part of regional cuisine and cultural identity.

However, commercialization, replacement by modern hybrids, and misuse of famous regional names have threatened many indigenous vegetable varieties. To safeguard these valuable agricultural products, the Government of India introduced the **Geographical Indications of Goods (Registration and Protection) Act, 1999**, which came into force in 2003. A **Geographical Indication (GI)** tag identifies products whose quality, reputation, or characteristics are essentially linked to a particular geographical region. It provides legal protection against unauthorized use of the product name and ensures that only genuine producers from the designated area can market their products under the registered GI name. Today, several vegetables and horticultural crops have received GI status, helping preserve India's agricultural heritage while improving the livelihoods of farming communities.

What is a Geographical Indication (GI)?

A **Geographical Indication (GI)** is a form of intellectual property right that identifies goods originating from a specific geographical location, where their quality, reputation, or unique characteristics are directly attributable to that place of origin. Unlike trademarks, which belong to an individual or company, a GI belongs collectively to the producers of a particular region. The GI system is administered in India by the **Geographical Indications Registry**, Chennai, under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

Importance of GI Tag in Agriculture

GI registration offers numerous benefits to farmers, consumers, and society. It protects traditional crop varieties from imitation and misuse, enhances product reputation, increases market value, strengthens export opportunities, encourages conservation of indigenous germplasm, promotes sustainable cultivation, and supports rural employment. GI-tagged products often command premium prices because consumers associate them with authenticity and superior quality.

Major GI-Tagged Vegetables of India

1. Mattu Gulla Brinjal (Karnataka)

Mattu Gulla is one of India's most famous GI-tagged vegetables. It is cultivated mainly in the villages surrounding the Udupi district of Karnataka. The fruits are medium-sized, round, glossy green, and possess exceptional taste with very few seeds. The variety is closely associated with the famous Udupi cuisine and is particularly valued for preparing "Sambar" and stuffed brinjal dishes. The unique coastal climate, sandy loam soils, and traditional cultivation practices contribute to its distinctive flavor. Mattu Gulla received GI registration in **2011**, making it one of India's earliest GI-tagged vegetables.

2. Vazhakulam Pineapple (Kerala)

Although botanically a fruit, pineapple is an important horticultural crop recognized under the GI system. The Vazhakulam Pineapple of Kerala is known for its pleasant aroma, golden-yellow flesh, low fiber content, and excellent sweetness. It has become an important export commodity due to its superior quality.

3. Byadagi Chilli (Karnataka)

Byadagi chilli is internationally renowned for its brilliant red color and low pungency. It is widely used in food processing industries for natural coloring and spice production. The variety is rich in oleoresin, making it highly valuable for export.

4. Naga Mircha (Nagaland)

Naga Mircha, also known as King Chilli or Ghost Pepper, is among the world's hottest chillies. It possesses an extremely high capsaicin content and is widely used in traditional northeastern cuisine. Besides its culinary importance, it has medicinal and industrial applications.

5. Kandhamal Haldi (Odisha)

Although turmeric is classified as a spice crop, it is botanically related to several vegetable crops and forms an important component of horticulture. Kandhamal turmeric contains exceptionally high curcumin content and is widely recognized for its medicinal properties.

Unique Characteristics of GI Vegetables

Each GI-tagged vegetable possesses distinctive characteristics that cannot be replicated easily outside its geographical area. These include:

- Unique taste and flavor
- Attractive color and appearance
- Superior cooking quality
- High nutritional value
- Better shelf life
- Adaptation to local climatic conditions

- Traditional cultivation methods
- Cultural significance

The interaction between soil type, rainfall, altitude, temperature, indigenous farming practices, and local genetic diversity contributes to these special characteristics.

Role of Traditional Knowledge

The success of GI-tagged vegetables is deeply rooted in traditional agricultural knowledge passed down through generations. Farmers have carefully selected seeds, preserved local landraces, developed region-specific cultivation techniques, and maintained biodiversity without modern scientific tools. Traditional seed saving, organic manure application, mixed cropping, and indigenous pest management practices have played a major role in preserving these unique vegetables.

Economic Benefits to Farmers

GI registration creates opportunities for better income generation by allowing farmers to sell authentic products at premium prices. Consumers are increasingly willing to pay higher prices for products with guaranteed authenticity and quality.

GI-tagged vegetables also support:

- Farmer Producer Organizations (FPOs)
- Rural entrepreneurship
- Agro-tourism
- Export promotion
- Brand development
- Value addition
- Women self-help groups

Successful marketing of GI products often generates employment in grading, packaging, transportation, processing, and retail sectors.

Role in Biodiversity Conservation

Modern agriculture often emphasizes high-yielding hybrids, leading to the disappearance of traditional vegetable varieties. GI registration encourages conservation of indigenous germplasm because farmers receive economic incentives to continue cultivating local varieties. Conserving GI vegetables helps maintain valuable genes for disease resistance, drought tolerance, nutritional quality, and climate resilience that may become essential for future breeding programs.

Challenges in Promoting GI Vegetables

Despite their recognition, several challenges remain. Limited consumer awareness, inadequate branding, poor packaging, fragmented production systems, lack of organized marketing, counterfeit products, insufficient export infrastructure, and weak supply chains restrict the full potential of GI-tagged vegetables. Many farmers are still unaware of the commercial advantages offered by GI registration.

Role of Government and Research Institutions

Government agencies, agricultural universities, Krishi Vigyan Kendras (KVKs), and Farmer Producer Organizations play an important role in promoting GI-tagged vegetables by:

- Producing quality planting materials
- Conducting awareness campaigns
- Providing certification
- Developing branding strategies
- Facilitating export opportunities
- Organizing exhibitions and food festivals
- Supporting value addition and processing

Digital marketing platforms and e-commerce have further expanded market access for authentic GI products.

Future Prospects

The demand for traditional, nutritious, and region-specific foods is increasing globally. GI-tagged vegetables have enormous potential for domestic and international markets due to growing consumer preference for authentic products. Integration of GI products with organic farming, precision agriculture, climate-smart cultivation, blockchain-based traceability, geographical branding, and agri-tourism can significantly improve farmers' income while preserving India's agricultural heritage. Further exploration and registration of deserving indigenous vegetable varieties from different states will strengthen biodiversity conservation and promote sustainable rural development.

Conclusion

GI-tagged vegetables represent the rich agricultural heritage of India and symbolize the close relationship between nature, traditional knowledge, and farming communities. Their unique qualities are the result of centuries of adaptation to specific geographical conditions and careful selection by local farmers. GI registration provides legal protection, enhances market recognition, increases farmers' income, and preserves valuable indigenous germplasm for future generations. Promoting awareness, improving branding, strengthening supply chains, and encouraging consumer preference for authentic GI products will ensure that these traditional vegetables continue to thrive. Protecting GI-tagged vegetables is not merely about conserving crops—it is about safeguarding India's cultural identity, biodiversity, and the livelihoods of millions of farmers.

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