

Review Article

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Geographical Indications in Horticulture: North East India Perspective

Himadri Shekhar Datta^{1*}, Gargi Sharma², Sarat Sekhar Bora³

¹College of Horticulture, ²Department of Plant Breeding & Genetics, ³Agrometeorology,
KVK, Udalguri, Assam Agricultural University, Jorhat-785013, Assam, India

*Corresponding author

ABSTRACT

A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin (WIPO). Geographical Indication, an exclusive community rights, recognizes the importance of location, climate and human know how in making the products distinguished on the basis of their unique intrinsic attributes. It acts as an effective tool in protecting and rewarding the market potential of elite items and also the traditional knowledge associated with them (Kishore, 2018). Since the enactment of the Geographical Indications of Goods (Registration and Protection) Act, 108 agricultural items have been accorded with GI tags till date and among them the horticultural items has its share of more than 75 percent. Among horticultural crops, maximum GIs have been accorded to fruit crops (38 nos) followed by Plantation crops (14 nos). Vegetable crops and spices share 12 and 13 GI tags whereas flower crops and aromatic plants conferred with 5 and 3 GI tags, respectively. North East India comprising of eight states is rich in diversity of many fruits, vegetables, flowers particularly orchids, spices and medicinal plants (Deka *et al.*, 2012). It is evident from the list of registered GIs, how other states have quickly grabbed the opportunity and secured GI tagging of their goods and produce peculiar to their region. However, Northeast India, inspite of its rich horticultural diversity have not been able to take advantage of GI tagging. The horticultural produce of Northeast India got leg up with as many as 12 products accorded GI tags. GI tags will pave the way for better branding and marketing of these horticultural products both in domestic and international Market, besides protecting local crops and facilitating better return to legitimate rural producers. Thus, it is pertinent that a streamlined strategy should be adopted for tapping the untapped potential of the registered GI products, because unless that is done, the previous, ongoing as well as future registrations will have no sustainability (Sharma and Rajan, 2018).

Keywords

Geographical,
Product, Crop, Tag

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Introduction

North East India is sitting on hotspot of biodiversity of horticultural crops. Geographical Indications of the horticultural products with specific geographical origin to North East India is very much relevant in the present scenario as it protects the attributes and reputation of a product through market differentiation. A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin (WIPO). In order to be a GI, a sign must identify a product to be originating in a given place. Apart from that, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. As the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production. A geographical indication right enables those who have the right to use the indication to prevent its use by a third party whose product does not conform to the applicable standards (Chaudhary *et al.*, 2017). Darjeeling Tea, Kangra Tea, Tezpur Litchi etc. are some of the GIs in the horticulture sector.

Benefits of GI

Higher market price: The profitability is primarily influenced by repute and quality of product, market size and degree of competition, consumer perception and demand elasticity. Geographical indications provide an effective platform for obtaining premium market price. Studies indicate that consumers are willing to pay higher price for origin guaranteed products.

Remunerative price for producers: Geographical indication would realise higher returns in global markets and establishing effective agricultural brands can help farmers gain a competitive advantage in 'buyer-

driven' global markets.

Consumers: GI helps consumers get quality products of desired traits, protect consumers from deception. The qualities and uniqueness of the product create an image in the eye of consumers. So product becomes a brand for consumer.

Market penetration: A well-recognized brand with a strong reputation can help marketers penetrate new markets more easily. Favourable comments and advocacy by loyal customers also helps in facilitating access to new customers.

Traditional knowledge: The Traditional knowledge can be defined as the knowledge, innovations and practices of indigenous peoples and local communities. GI protects from loss of traditional lifestyles, misappropriation of Traditional Knowledge and its usage without any benefit-sharing.

Rural development: Protection of GI has significant implication on rural development by giving due recognition to our unique biodiversity and traditional knowledge. GI creates local jobs, prevent rural exodus and promotes rural tourism.

Legal Protection: It boosted exports of Indian geographical indications by providing legal protection and enables seeking legal protection in other WTO member countries.

Types of GI

Geographical names

Darjeeling, Kancheepuram

Non - Geographical names: Feni, Alphonso

Some examples of goods

Agricultural goods: Darjeeling Tea, Alphonso Mango

Natural goods: Makrana Marble

Manufactured goods:

Kolhapuri Chappal, Muga silk of Assam

UNIQUENESS- Natural & Human Factors

Natural Factors

Geographic factor (topography, soil, & climate)
Colour & Size
Chemical Constituents and
Oil Content
Use

Human Element

Human skill
Human labour

Protection of GI

Sui generis system
Collective or certification marks
Business practices, including
administrative product approval schemes

Historical development of GI

At global level, prior to TRIPS, no Agreement dealing with the protection of GI as such. TRIPS Agreement (1994) is the First International legal instrument in which the term GI appears (Shukla, 2016). The Agreement on Trade-Related Aspects of Intellectual Property Rights of 1994 ("TRIPS Agreement") provides the following definition:

"Geographical indications are, for the purposes of this Agreement, indications which identify a good as originating in the territory of a Member [of the World Trade Organization], or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin."

WTO members are free to implement in their law more extensive protection than is required

by TRIPS; such protection must not contravene the provisions of the Agreement.

The Indian Parliament enacted in 1999, The Geographical Indications (GI) of Goods (Regulation and Protection) Act for registration and better protection in relation to goods. This Act came into effect on 15th September 2003. Under Section 1(e) it is defined that "Geographical Indication" in relation to goods, means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating or manufactured in the territory of a country or a region or locality in that territory, where a given quality reputation or other characteristic of such good is essentially attributed to its geographical origin and in case where such goods are manufactured goods, one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality as the case may be. The focus of the Act is on quality reputation or other characteristic of such goods, which is essentially attributed to its geographical origin (Chaudhary *et al.*, 2017).

The remedies available for GI protection

- (i) Civil remedies
- (ii) Criminal remedies

The Fourth Schedule of the Act classifies the goods into 34 classes with Coffee, Tea, and Spices under Class 30 and Agricultural and Horticultural products under Class 31.

Who can apply for GI?

Any association of persons, producers, organization or authority established by under the law can apply.

The applicant must represent the interest of the producers

What does not qualify for GI?

- Things which are determined to be generic names or indications of goods not or ceased to be protected or which have fallen into disuse in that country
- Things which contain any matter likely to hurt the religious susceptibilities of any class or section of the citizens of India
- Things which would otherwise be disentitled to protection in a court
- The use of which would be likely to deceive or cause confusion
- The use of which would be contrary to any law in force
- Things which comprise or contain scandalous or obscene matter
- Things which although literally true as to the territory or region in which the goods originate, but falsely represent to the persons that the goods originate in another territory or region.

Geographical Indication (GI) Logo & Tagline

Ownership rights of the Logo and Tagline vests in the Department for Promotion of Industry and Internal Trade (DPIIT, 2019)

What can be Geographical Indications?

GI may be Agricultural product (Darjeeling Tea), Manufactured product (Kolhapuri Chappal), Food stuff (Bikaneri Bhujia), Natural product (Makrana Marble) Wine & Spirit Drink (Feni) and Handicraft (Muga Silk of Assam)

Status of GI in Horticultural products in India

Around 359 items accorded GI tags
Maximum GI granted to Handicraft (209)
Followed by Agricultural items (108)
Horticultural items covering more than 75%

of items (85) (Kishore, 2018)

Status of GI in Horticulture sector of Northeast India

North East India comprising of eight states is rich in diversity of many fruits, vegetables, flowers particularly orchids, spices and medicinal plants. It is one of the hot spot in India, known for its diverse nature of soil, climate, and topography. Among the commercial fruits of the country, maximum diversity in citrus, banana and jack fruit are found in Northeast India. North East India has a very large number of diversity in other tropical and subtropical fruits belonging to the genera *Garcinia*, *Annona*, *Averrhoa*, *Persia*, *Aegle*, *Passiflora* and *Tamarindus* etc. The region is also rich in different genotypes of cucurbits, solanaceous vegetables, ginger, turmeric, bamboo, leafy vegetables etc. Among the different ornamental horticultural crops, the region displayed the maximum diversity in orchids, fern and other flowering shrubs. Indigenous and minor horticultural crops available in the region are however not being exploited properly (Deka *et al.*, 2012).

It is evident from the list of registered GIs, other states have quickly availed the opportunity and obtained GI tagging of their goods and produce unique to their region. However, Northeast India, in spite of its rich horticultural diversity have not been able to take advantage of GI tagging. The horticultural produce of Northeast India got leg up with as many as 12 products accorded GI tags.

Naga Mircha

Capsicum chinense: Plant height of 3 year old is 12-13 feet

Recently been described as a distinct species *Capsicum assamicum* based on morphological properties and proteomic

analysis
Fruit colour Red, brown, white red with conical to semi conical shape and rough wrinkle surface
Recorded to be the hottest chilli in the world in 2006 with a Scoville heat unit (SHU) rating of 1,001,304
Pungency reduced if grown in bright places
Very high capsaicinoid content 2.45% to 5.36%.As other varieties have capsaicinoid less than 1% ,so ideal for capsaicin extraction since 1% capsaicin is standard for commercial extraction
Fruity aroma, distinctive pungency and exquisite unique taste are the special characteristics(Gogoi *et al.*, 2018; Meetei *et al.*, 2016)

Naga Tree Tomato

Solanum betaceum: Perennial shrub, grown as a backyard venture crop
Small, tender 10-18 feet tall tree, which bears fruits which are oval and egg shaped and grows in clusters
Varied from red to orange with inside pulp of the fruit is light orange and the seeds are black
The fruit weight usually 100 to 150 g and has sweet taste and resinous aroma
It has relatively thicker outer skin, less moisture content and long shelf life
Helps to controlling in High Blood Pressure and brings down cholesterol levels
Special organoleptic quality, sweetness with more carbohydrates and protein
(Rai *et al.*, 2005; NERAMAC, 2014)

Arunachal Orange

Oranges cultivated in the climatic conditions of Arunachal Pradesh
Citrus reticulata: Trees grow between 3 - 6 m high
Fruit round with medium thick peel & weights 100 -150g

Distinguished by loose skin of fruit, the relative ease with which the segments can be separated
High TSS & medium acidity provides unique sweet sour taste
Orange colour at fruit ripening with high Vitamin C and high juice content
(NERAMAC, 2014)

Sikkim Large Cardamom

Important cash crop of Sikkim and Darjeeling
Amomum subulatum: Perennial herb with aerial leafy shoots of height of 1.7 to 2.6 m and possess 9 to 13 leaves in each tiller
Inflorescence is a condensed spike with yellowish perianth of 10-15 fruits
Fruit round or oval shape, capsule with reddish brown colour
Shade loving tree, supports conservation of tree biodiversity
Superior quality because of native environment & traditional system of curing
Quality different from small cardamom with lower volatile oil content & more fibrous
Traditional knowledge of curing with controlled heat to ensure proper and uniform drying(NERAMAC, 2014)

Mizo Chilli

Capsicum frutescens: Characterized by a bushy type of plant growing up to 120 cm. The leaves are smooth oval shaped
Fruit small sized pod, highly pungent, mature fruit is dark red
Stands apart because of its smaller size with 37,153 SHU
High K in the jhum lands responsible for distinctive red color
Burning of field helps in reducing the weed growth, soft rot disease and increase the availability of certain plant nutrients

particularly potash which helps the crop grow well and provides good colour to the final fruit

Free from pesticide residue

Capsaicin content of 0.59% (NERAMAC, 2014)

Karbi Anglong Ginger

Zingiber officinale: It is an herbaceous perennial, unbranched, pseudo-stems or aerial shoots reach a height of 30-90 cm. Mostly two varieties of ginger viz., Nadia & Aizol cultivated. Bhola is also cultivated in the district

Nadia variety is medium to bold, light brown in colour, moderately pungent and have mild flavor with Oleoresin content 3.40%

Aizol variety is large rhizome with less fibre content (NERAMAC, 2014)

Tripura Queen Pineapple

Ananas comosus: medium tall (1.0-1.5 m) herbaceous perennial plant with 30 or more trough-shaped and pointed leaves 30-100 cm long

Fruits are spiny & orange yellow in color

Sweetness and unique aroma

Fruits oval in shape with golden yellow pulp

Smaller fruits with lesser fibre content

Not suitable for slices due to its smaller size & deep eyes

Juice content 23.68% ,sugar content more but less acidity

(NERAMAC, 2014)

Tezpur Litchi

Tezpur Litchi is a special type of Litchi grown in Litchu Pukhuri and Porowa village

of Sonitpur district of Assam

Pleasant flavour, juicy pulp (aril) with attractive colour & small seed with tight pulp

Size weighs around 70-80 g and high Total sugar content 15.59-16.28 g/100g are the special characters

Khasi Mandarin

Citrus reticulata: small size & evergreen trees with pronounced upright growth habit. Fruit globose to oblate and distinguished by tight and smooth skin

Not easy to peel, but has more flesh and juice

Rind medium-thick, fairly loosely adherent with prominent, sunken oil glands

Flesh color orange; fruits lose quality and rind puffs if not picked when ripe.

Rich source of Vitamin C with TSS (°Brix) 11.56 and Acidity 0.64%

(GI Registry Journal, 2014)

Kachai Lemon

Citrus jambhiri: High yielding land race of lemon in Ukhrul district of Manipur

Fruits are spheroid in shape and the individual fruit weight ranges from 70 to 100 g. and are yellow in colour

Uniqueness of the fruit lies in its bearing habit. Even if it gets ripened it doesn't fall from the tree

Unplucked fruits remain on the tree and the fruits change its colour in next fruiting season (green to yellow)

The rind colour is white and the pulp colour is yellow

Fruit is a rich source of Ascorbic Acid, containing 46-51 mg/100 ml juice.

TSS is 6.8 -10.5 °Brix and Acidity 4.1-6.1%

(MOMA, Govt of Manipur; GI Registry, 2014).

Table.1 List of GI registered Horticultural products of India

Crop	Name	Geographical area
Fruit Crop (38nos.)		
Mango	MaldalaxmanBhog Mango	West Bengal
	Maldakhirsapati (Himsagar) Mango	West Bengal
	Maldafazil Mango	West Bengal
	Mango malihabadiDusseheri	Uttar Pradesh
	Appemidi	Karnataka
	Marathwadakesar	Maharashtra
	Banaganpalle mangoes	Telangana& Andhra Pradesh
	Alphonso	Maharashtra
	Bhagalpurizardalu	Bihar
Citrus	Coorg orange	Karnataka
	Nagpur orange	Maharashtra & MP
	Arunachal orange	Arunachal Pradesh
	Khasi mandarin	Meghalaya
	Kachai lemon	Manipur
	Memongnarrang	Meghalaya
	Jalna Sweet orange	Maharashtra
Banana	Nanjanagud banana	Karnataka
	Chengalikodannendran Banana	Kerala
	Virupakshi hill Banana	Tamil Nadu
	Sirumalai hill Banana	Tamil Nadu
	Kamalapur red Banana	Karnataka
	Jalgaon banana	Maharashtra
Grapes	Nashik grapes	Maharashtra
	Bangalore blue Grapes	Karnataka
	Sangli raisins	Maharashtra
Pomegranate	Solapur pomegranate	Maharashtra
Strawberry	Mahabaleshwar strawberry	Maharashtra
Pineapple	Vazhakulam	Kerala
	Tripura Queen	Tripura
	Vazhakulam	Kerala
Guava	Allahabad surkha	Uttar Pradesh
Kokum	Sindhudurg&Ratbagiri kokum	Maharashtra
Litchi	Tezpur litchi	Assam
	Shahi litchi of Bihar	Bihar
Pomello	Devanahallipomello	Karnataka
Custard Apple	Beed Custard apple	Maharashtra

Fig	Purandar fig	Maharashtra
Chikoo	DahanuGholvadchikoo	Maharashtra
Vegetable crop (12nos.)		
Chilli	Naga Mircha	Nagaland
	Guntur sannam chilli	Andhra Pradesh
	Bydagi chilli	Karnataka
	Bydagi chilli	Karnataka
	Mizo chilli	Mizoram
	Bhiwapur chilli	Maharashtra
	Khola chilli	Goa
Brinjal	UdupiMattuGullabrinjal	Karnataka
	JalgaonBharatibrinjal	Maharashtra
Bean	Waghyaghevada	Maharashtra
Onion	Banglore rose onion	Karnataka
	Lasalgaon onion	Maharashtra
Tree Tomato	Naga tree tomato	Nagaland
Plantation crops (14nos.)		
Tea	Darjeeling tea	West Bengal
	Kangra tea	Himachal Pradesh
	Nilgiriorthodox	Tamil Nadu
	Assam orthodox	Assam
Coffee	Monsooned Malabar arabica coffee	Kerala
	Monsooned Malabar robusta coffee	Karnataka
	CoorgArabica coffee	Karnataka
	Wayanaadrobusta coffee	Kerala
	Chikmagalur Arabica coffee	Karnataka
	Arku valley arabica coffee	Andhra Pradesh & Orissa
	Bababudangirisarabica coffee	Karnataka
Coconut	Eathomozhy tall coconut	Tamil Nadu
Cashew	Vengurla Cashew	Maharashtra
Areca nut	SirsiSupari	Karnataka
Spices (13nos.)		
Cardamom	Sikkim Large cardamom	Sikkim
	Alleppey Green cardamom	Kerala
	Coorg Green cardamom	Karnataka
Ginger	Assam KarbiAnglong Ginger	Assam
Pepper	Malabar Pepper	Kerala
	Tellicherry Pepper	Kerala
Turmeric	Waligoan Turmeric	Maharashtra
	Sangli Turmeric	Maharashtra

	Erode Turmeric	Tamil Nadu
	KandhamalHaladi	Orissa
Bay leaf	UttarkhandTejpat	Uttarkhand
KalZeera	Himachali Kala Zeera	Himachal Pradesh
Garlic	Kodaikanalmalaipoondu	Tamil Nadu
Flower (5nos.)		
Jasmine	Mysore Malligae	Karnataka
	HadagaliMalligae	Karnataka
	UdupiMalligae	Karnataka
	Madurai Malli	Tamil Nadu
Kewda	GanjamKewda flower	Odisha
Aromatic plants (3nos.)		
Betel Leaf	Mysore betel leaf	Karnataka
	Magahi Paan	Bihar
	Tirur betel leaf	Kerela

Table.2 The Horticultural Products of North East India with GI tag

Horticultural Item	State
Assam Orthodox Tea	Assam
Naga Mircha	Nagaland
Naga Tree Tomato	Nagaland
Arunachal Orange	Arunachal Pradesh
Large Cardamom	Sikkim
Mizo Chilli	Mizoram
Assam KarbiAnglong Ginger	Assam
Tripura Queen Pineapple	Tripura
Tezpur Litchi	Assam
Khasi Mandarin	Meghalaya
Kachai Lemon	Manipur
MemongNarang	Meghalaya

Table.3 Varieties of Tezpur Litchi

Variety	Fruit size/shape	Colour	Flesh	Sweetness	Fruiting habit
Ilachi	Round & small. Seed small. Grape like shape	Shendury	Compact	Sugar sweet & scented	Medium
Bilaiti	Round & very large. Apple shaped, small seed	Brick red	Compact & scented	Sugar sweet	Profuse
Bombay	Round & very large. Small seed. shape like strawberry	Brick red	Compact & scented	Sweet but slightly sour	Profuse
Piyaji	Elongate & medium large	Brick red	Loose pulp scented like onion	Sweet sugar	Alternate
Haldia	Elongated large seed	Yellowish red	Compact	Sweet	Medium

(Source: NERAMAC, 2014)

Table.4 Some Horticultural GIs under Examination from North East India

Name of the product	Location	Special character	Reference
Mizobanana	Mizoram	attractive size, shape and taste	GI Registry, 2019
Assam lemon	Assam	Cluster bearing habit, seedless fruits	GI Registry, 2019
Naga cucumber	Nagaland	Low in calories, high in potassium and contain high level of water.	GI Registry, 2019
Manipur Black Cherry	Manipur	Natural edible colour high moisture content	NERAMAC, 2017
Assam elephant apple	Assam	Used curries, traditional medicine	NERAMAC, 2017
Leteku	Assam	High potassium content Rich source of pectin	NERAMAC, 2017
Dalle Khorsani	Sikkim	Unique flavour and high pungency	GI Registry, 2018
Mizo Chow chow	Mizoram	Low caloric value Wide adaptability	GI Registry, 2018
Siroi Lily	Manipur	bell shaped petals	GI Registry, 2017
Passion fruit	Mizoram	small in size, its flavour is excellent and less acidic	GI Registry, 2018
Rahre	Arunachal Pradesh	rich source of essential oil adapted to biotic & abiotic stress	GI Registry, 2017
Tamenglong Orange	Manipur	sweet- sour taste and high juice content	GI Registry, 2017

Table.5 Some horticultural products of North East India with potential for GI

Name of the product	Location	Special character
Longaibrinjal	Karimganj, Assam	Soft, very less seed, more flesh with unique aroma(Datta,2016)
Maroinapakpi	Manipur	Associated with traditional recipes and also with the ethnotherapy of certain diseases (Ayam,2011)
Tree bean	Manipur/ Mizoram	Flowers, tender pods and seeds edible & a good source of proteins, fats, carbohydrates, vitamins and minerals(Roy <i>et al.</i> , 2016)
Bhinkol	Assam	Very good infant food, source of bio antacid. (Borborahet <i>et al.</i> , 2016)
Darjeeling banana	Manipur	Pseudostems green, tinged with brownish colour, leaf sheath bases not enclosing pseudostems, blotched with black-brown spots, waxy when young, devoid of wax on maturity (Singh <i>et al.</i> , 2016)
Moran Ada	Assam	Moran Ada is very rich in oil & has medicinal property (Hazarika and Kakoti, 2013)
Senduriaam, Matiaam, Tilikiaam	Assam	Unique flavour and taste (The Sentinel, June 27, 2019)
<i>Rhynchostylisretusa</i> <i>Vanda coerulea</i> <i>Orchislatifolia</i> <i>Dendrobiumhookeri anum</i>	North East India	Traditional medicine Traditional food Cattle feed (Medhi & Chakrabarti, 2009)
Assamiya Paan Gaan Paan	Assam	Have high leaf pungency Profuse branching habit (Maiti & Saikia, 2002)

Table.6 SWOT Analysis of Horticultural GI in North East India

Strength	Weakness
Agro climatic diversity	Poor socio economic condition
History of Organic farming	Lack of market access
Proximity to export destinations	Slow pace in adoption of technology
Adequate rainfall during monsoon	Subsistence farming
Potential to commercialize	Lack of business acumen
Opportunity	Threat
Organic farming	Growing interest of rural youth towards off-farm job
Infrastructural facilities can be created with private sector participation	Uncertainty in external trade scenario
Govt policies for NER specially 'Look East Act East'	Insurgency
Scope for value addition	Price fluctuation during glut season



Fig.1 GI Registration Trend in Indian Sectors (Source: Kulkarni and Konde, 2011)

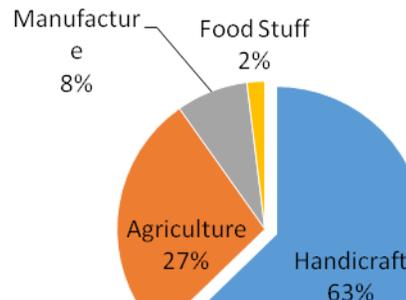


Fig.2 Geographical Indications in Horticultural crops (Kishore, 2018)

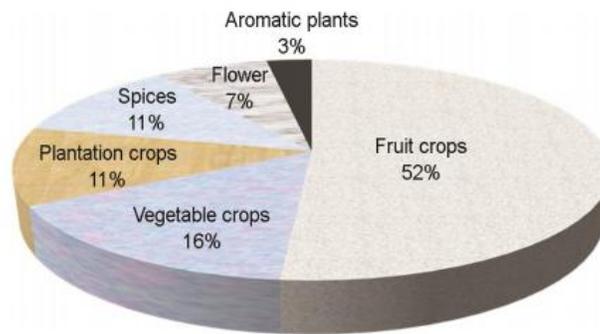


Fig.3 Statewise ownership of Geographical Indications in Horticultural crops (Kishore, 2018)

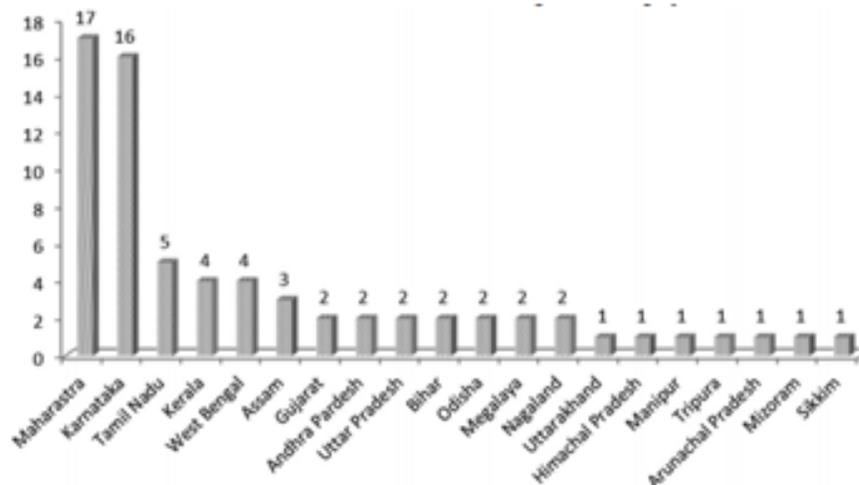


Fig.4 Trends in allotment of Geographical Indications in Horticultural crops (Kishore, 2018)

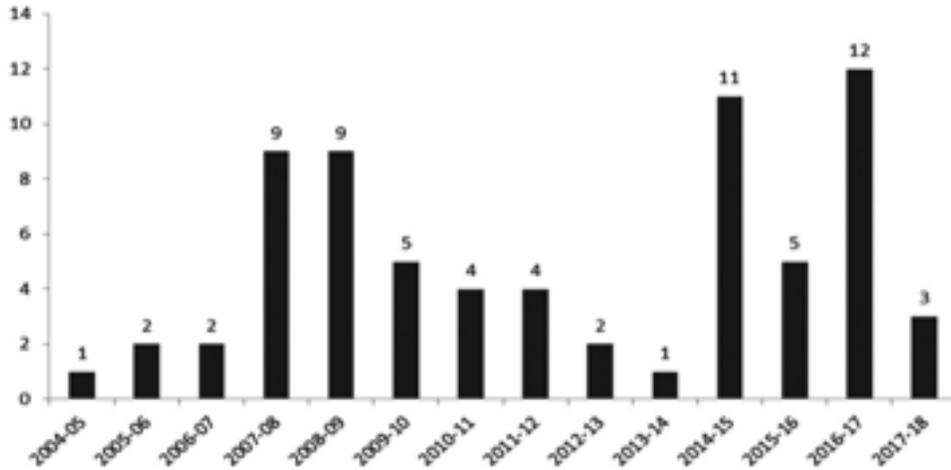
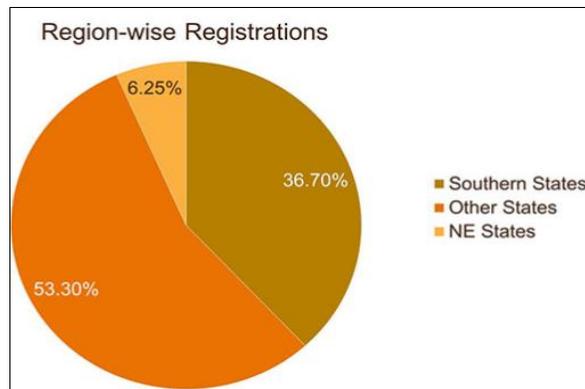


Fig.5 Status of GI in Horticulture sector of Northeast India (Source: Lyngdoh *et al.*, 2016)



Assam (Orthodox) Tea

With its special aroma and bold & malty flavor, Assam tea is the preferred beverage for many in the world.

Teas “that are grown and manufactured out of the basic *Camelliasinensis* var. *assamica* and other variants in the Brahmaputra or Assam Valley in north east India”

Assam Orthodox Teas are rolled with machinery in a manner that mimics hand-rolling. Most of the specialty tea are made with orthodox production methods

Two flush with 1st flush: March and 2nd flush:

May-June

Bright yellow colour with unique taste (GI Registry Journal,2007)

MemangNarang

Citrus indica: very small tree or shrub 3-6 feet tall.

Fruits are spherical to depressed globose, with smooth surface

Fruits are deep orange red to almost scarlet when full ripe

Can be used as a rootstock as virtually free from pest & diseases.

Fruits very small in size and flavor not agreeable, mostly used as medicine

Nokrek Biosphere Reserve is the natural home of the Endangered species Germplasm conserved at the National Citrus Gene Sanctuary in the Reserve (GI Registry Journal, 2014)

Geographical Indications protecting Traditional Knowledge

Traditional knowledge (TK) can be defined as the knowledge, innovations and practices of indigenous peoples and local communities

GI gives protection against misappropriation of TK, and its usage without any benefit-sharing

GI can create economic rewards for producers & enhance commercial value

Kolakhar: Traditional Knowledge of Assam

Kolakhar is a traditional ingredient and a popular food additive in Assam

It is known to help normalizing digestive disorders of stomach

It is generally prepared from the ash of *Musa balbisiana* (Bhimkol)

Kolakhar have pH 13

Kolakhar, a traditionally known antacid is rich in Potassium Carbonate

(Deka and Talukdar, 2007; Hemanta *et al.*, 2014)

Issues and concern

GI status not exploited post registration

Lack of background work for filing and awareness

Limited Consumer Awareness of GI

Lack of initiatives in building brands and visibility

Lack of formal organization structures and/or control mechanisms

Requirement of support in terms of R&D, marketing etc

Conclusion and future prospects are as follows:

Protect & exploit market potential of origin linked reputed products

Defence against unfair competition

Effective inter institutional linkages and coordination

Need of the hour to spread GI literacy

Option for Doubling Farmers income

Developing, registering and enforcing a GI can be time consuming and needs to be addressed

Strict implementation of rules and regulations

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