

A study on opportunities and challenges of Ginger Export with reference to T. Narsipura taluk

Banuprakash. K. A.

Assistant Professor, Government First Grade College, Bukkapattana, Tumkur

Abstract - Horticulture is an important branch of agriculture and deals with intensively growing produced plants for human food and non-food uses and for personal or social needs. It involves plant propagation and cultivation with the aim of improving plant growth, yields, quality, nutritional value and resistance to insects, diseases and environmental stresses. It also includes plant conservation, landscape restoration, soil management, landscape and garden design, construction, maintenance and arboriculture (the cultivation of trees and shrubs especially for ornamental purposes). The diverse agro-climatic condition in the country makes it possible to grow almost all varieties of fruits and vegetables. India produces nearly 11% of all the world's vegetables and 15% of all fruits, yet its share in global exports of vegetables is only 1.7% and in fruits a meager 0.5%. In comparison to India, China is currently the world's largest fruit and vegetable producer with a production share of 34%. The globalization and commercialization of agricultural trade have also enabled farmers to go for horticultural crops. The horticultural crops are more nutritive and rich in vitamins and minerals as compared to other food crops. This also indicates that there is a vast scope for internal consumption besides having market for these products. The achievement in the horticulture sector is laudable as the sector now consists of more than 30.50 per cent of the GDP of the agriculture sector (India, 2013-14). Karnataka is India's 8th largest state in terms of geographical area covering 1.92 lakh sq km and accounting for 6.3 per cent area of the country. The state comprises of 30 districts and 176 taluks and has over 27,481 villages. Agriculture employs more than 60 per cent of Karnataka's workforce. As per the population Census 2011, agriculture supports 13.74 million workers, of which 23.61 per cent are cultivators and 25.67 per cent are agricultural workers. A total of 1,23,100 km² of land is cultivated in Karnataka constituting 64.6% of the total geographical area of the state, out of which 26.5 per cent of the sown area (30,900 km²) is under irrigation. Agriculture in Karnataka is heavily dependent on the southwest monsoon. The state ranks fifth in India in terms of total area under horticulture. It stands fifth in production of vegetable crops and third in fruit crop

production. It is also the largest producer of spices, aromatic and medicinal crops and tropical fruits. At present ginger cultivation is the main stay of the farmers of T.Narasipura Taluk, which boasts of cultivating export quality Ginger. The study of ginger cultivation has remained untouched in the field of agricultural geography of Karnataka. It's successful cultivation requires heavy investment, constant attention, careful nursing, throughout knowledge, skill and experience. Commercial ginger cultivation is in practise for the last 30 years, with more than 10 varieties of ginger grown in the taluk. Ginger crop is more susceptible to pests and diseases. The attack of pests and diseases affects adversely the yields of ginger. Most of the cultivators do not attend this factor with almost care, due to various reason such as, lack of capital at hand and lack of knowledge of proper control measures. This research article attempts to find out various aspects related to ginger cultivation in the study region and its export potential.

Index Terms - Agriculture, Horticulture, Spices, Ginger cultivation, Export potential.

INTRODUCTION

Tirumakudalu Narasipura, commonly known as T. Narasipura is regarded as 'the temple city of Karnataka'. The first name refers to the land of confluence of rivers Kaveri, Kabini and Spatika Sarovara (a mythical lake or spring, also named Gupta Gamini). The word 'Narasipura' is derived from the famous Gunja Narasimhaswamy temple that is located on the right bank of the Kabini (Kapila) river. Considered as sacred as Prayag (confluence of the Ganges, the Yamuna and the Saraswati at Prayag (Varanasi), Kashi in North India), it is also known as Dakshina Kashi, the town finds mention in tourism guides, both as a tourist place and a pilgrimage centre. The soil type is grouped in to three types viz., the red sandy soils, red loamy soils and deep black soils. The

soils are having high permeability and neutral with a pH of 7. The thickness of the soil varies from less than a meter to 6 m. North-eastern part of T. Narasipur taluk comprises of red loamy soil. It is characterized by clayey content mixed with sand. It is less permeable compare to sandy soil. It is having good moisture holding capacity and is fertile. The thickness varies from less than a meter to 16 m. Deep Black soils occur in south-western part of T. Narasipur taluk in a small area. These soils are dark brown, dark greyish brown to very dark grey or black in colour. The texture is usually clayey throughout the profile. These soils are fertile and generally produce good yields. Adequate soil and water management practices and drainage facilities are essential to obtain sustainable yields; otherwise salinity and water logging conditions may develop. These soils need to be drained once in 3-5 years with good quality water. The Taluk comprises of 5 Hoblies and 132 villages.

Population of T. Narasipura Taluk

Taluk	Geographical Area (sq. kms)	Total Population	Male (No.)	Female (No.)	% Share to total Population
T.Narasipura	600	2,92,035	1,46,258	1,45,777	9.73

Literacy Rate of T. Narasipura Taluk

Taluk	Rural (%)			Urban (%)			Total (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
T.Narasipura	65.10	53.80	59.40	81.40	72.90	77.00	67.00	57.20	62.60

(Source: Mysuru district at a glance-2014-15. Census (2011), Government of Karnataka.)

Ginger Cultivation:

In India plantation, spice crops are grown in an area of about 3.2 million hectares (1.82 percent of the total cropped area) contributing to an annual production of 2 million tons. Out of the 107 spices listed by the International Standard Organization (ISO), India grows about 52 spices in which only 16 spices are commercially important and these are cardamom, ginger, black-pepper, turmeric, clove, chilli, garlic, saffron, kalajeera, celery, cumin, coriander, fennel, fenugreek, ajwain and suwa. Hence

India is known as “The Home of Spices”. Ginger is one of the important spice crop having an area of 4,27,423 hectares with a production of 16,18,627 tons in World. At international level India is a second largest country with 27.24 percent of the total global production of ginger. Other important producers are China, Indonesia, Nepal, Nigeria, Bangladesh, Thailand, Philippines, Cameroon and U.S.A. Apart from these ginger having an area of 1,05,500 hectares with a production of 5,17,800 tones in India. Major production of this important spice crop is confined to Assam, Kerala, Gujrat, Mizoram, Sikkim, Arunachal Pradesh, Orissa and Karnataka. However there is wide gap in average yield per hectare of ginger ranging from 960 in Maharashtra and the 19,300 kg in Karnataka. So there is tremendous scope to increase the yield per unit are and thereby the total production in Maharashtra. India is also largest producer of dried ginger of about 15 m. tones. India ranks first among the ginger producing countries. The state (Kerala) contributes maximum dry ginger (Sunth) which is marketed internationally under the trade name “Cochin ginger”. During 2017-18, 28,550 tons dried ginger was exported earning a foreign exchange to the tune of Rs. 67.81 crores to the country. Ginger cultivation is more economical than the other cash crop like sugarcane. For the successful cultivation of ginger the farmers must have to know the botany of ginger. If the ginger is studied through its botany it will be helpful in proper cultivation and increasing its production. As per the recent studies it has been observed that the different variety of ginger crop has grown up to 30 cm to 100 cm. The ginger rhizome gets flourished underground at its base root and spreads in vertical and horizontal dimensions. Its rhizome is strong, hard, fleshy and slightly compressed at sides. Its sprouting is irregular as the palm of hand (fingers). Generally the rhizome is simple yellowish in its colour. It has 10 to 30 shoots above the ground level. These shoots break away every year but the rhizome can be kept in the land until it gets good market rate. Ginger can be harvested anytime in a year at the time of favourable market rate.

Stages of Ginger Growth: The farmers should know the stages of the ginger growth. If the stages are known, then only, one can take further steps to increase the production. Following are the stages of ginger growth:

- Germination of ginger plant gets completed after 30 days of plantation
- Sprouting of the ginger plant upwards get completed within 120 days
- Then after the ginger crop sprouting rhizome gets developed internally upto 180 days after plantation.
- The sprouting of rhizome process gets repeated in 180 to 215 days onwards.
- Generally after 215 days the leaves of ginger become yellowish and dried. The shoot dies and the crop is ready to harvest.

Land suitable for Ginger Cultivation:

The site should be flat with sufficient slope to avoid water stagnation and well drained. The site should be sunny, open, free from chemical, residual effect, diseases and insect-pests. However, partial shade conditions are essential for maximum growth and yield. Ginger crop should not be grown on the same field for at least three years to avoid the infestation of rhizome disease a serious problem in ginger industry. Preparation of land starts with the receipt of early summer showers or 10-15 days prior to planting. The land is to be ploughed 1-2 times with iron plough or tractor. After that 3-4 harrowing are given before the onset of the monsoon. Collection of weed stubbles etc. are removed. Beds of about 1 to 2 meter width, 15 cm height and of any convenient length are prepared at an inter-space of 45 cm in between beds. Ginger is always propagated by portions of the rhizomes known as seed rhizomes. Carefully preserved seeds rhizomes are broken or cut into small pieces of 2.5 to 5 cm length weighing 75 to 100 gm each having at least 2 to 3 good buds (eyes). The seed rate mostly depends on the method of cultivation adopted. Farmers of the study region are using more or less seeds than the recommended ones. The seed rate varies from 1500 to 1800 kg/ ha.

Manure for Ginger Cultivation:

Ginger besides long duration is an exhaustive crop and requires heavy manuring. The manure and fertilizer dose varies from place to place according to soil type, locality, initial fertility, level of soil in different ginger growing areas. At the time of planting farmers of the Satara district used well decomposed cattle manure or compost at the rate of 25 to 30 tone / ha. It is

broadcasted over the beds prior to planting. Besides this neem cake is applied at the rate of 1 to 2 tones/ha. at the time of planting used by the farmers reducing the incidence of rhizome rot of ginger and increases the yield. Fertilizers are applied to supply about 75 kg. N, 50 kg. P₂O₅ and 50 kg K₂O per hectare in overall cultivation in Satara district, whereas most of the farmers used fertilizer mixture (12:32:16) and vipul booster for rapid growth of ginger crop.

Harvesting:

The crop is ready for harvest in about 245 to 260 days. When the leaves turn yellow or wilting and start drying up gradually. But farmers in the study region harvested the crop after 16 months when particular crop completed two life cycles. Besides this few farmers harvested any time in between two life cycles of the crop when the market rates are favourable. Immediately after harvesting of ginger are thoroughly washed in water twice and thrice, dried for sometimes to remove the wetting water and with the help of gunny bag ginger gathered at the collection center for sending purpose.

Uses of Ginger:

- The aroma of ginger is pleasant and spicy and the flavour penetrating, pungent, slightly biting due to antiseptic or pungent compounds present in it. These properties make it indispensable in the manufacture of a number of food products like ginger bread, confectionery, gingerale, curry powders, certain curried meats, table sauces, in the pickling and in the manufacture of certain soft drinks like cordials, ginger cocktail, carbonated drinks, bitters, etc.
- Ginger is also used for the manufacture of ginger oil, oleoresin, essence, tinctures etc.
- Ginger preserved and ginger candy prepared from green or fresh ginger are quite a favourite of many and in great demand.
- A number of alcoholic beverages are prepared from ginger in foreign countries. Such as ginger brandy, ginger wine, ginger beer and gingerales etc.
- According to the Ayurvedic medical system, ginger is considered carminative, stimulant and given in dyspepsia and flatulent colic. It is also

prescribed as an adjunct to many tonic and stimulating remedies.

- It also has aphrodisiac values, besides its use in tinctures and as a flavourant.
- Ginger oil is used primarily as a food flavourant in soft drinks like gingerale, bitters, cordials and liquors, as a spice in bakery products, confectionery, pickles, sources, and preserves.
- The pharmaceutical uses are carminative rubefacient, stimulant in alcoholic gastritis, dyspepsia, flatulent colic, etc.
- Veterinary uses of ginger are stimulant and carminative in indigestion of horses and cattle, in spasmodic colic of horses and prevent the griping by purgatives.

Export Potential of Ginger

Statistics of Area, Production, yield and Value of Ginger in Karnataka State during 2018-19

Crop	Area (in Hectare)	Production (in MT)	Yield (in MT./Hectare)	Value (in Lakh Rs.)
Ginger	18,078	2,13,751	11.82	1,09,509

Source: Annual Report, Department of Horticulture, Government of Karnataka

Statistics of Area, Production, yield and Value of Ginger in T. Narasipura Taluk during 2018-19				
	3,371	38,530	11.43	7,274

Source: Annual Report, Department of Horticulture, Government of Karnataka

Out of total production of 2,13, 751 Metric Tonne of Ginger cultivated in entire Karnataka state, 38,530 metric tonne of ginger is grown in T. Narasipura Taluk only, making it the largest producer of Ginger, contributing, 18% of the total production of the state. There is an upward increase in the acreage from 2,741 hectare in 2015-16 to 3,371 hectare in 2018-19 in Ginger cultivation recording 23% increase in a span of four years.

According to AGMARK standards ginger is classified into following classes

Grade designations and quality of Garbled Non-bleached Ginger (Whole)

Special Characteristics

Grade designation	Quality						
	Size of rhizomes, (length in mm). (Min.)	Organic Extrinsic matter, %/m (Max.)	Inorganic extrinsic matter, % (m/m) (Max.)	Moisture, % (m/m) (Max.)	Total ash, % (m/m) (Max.)	Calcium (as calcium oxide)% (m/m) (Max.)	Volatile Oil, % (ml/100g m) (Min.)
Special	20.0	1.5	0.5	12.0	8.0	1.1	1.5
Standard	15.0	2.0	6.0	13.0	12.0	4.0	4.0

Statement of the Problem

At present ginger cultivation is the main stay of the farmers of T.Narasipura Taluk, which boasts of cultivating export quality Ginger. The study of ginger cultivation has remained untouched in the field of agricultural geography of Karnataka. It's successful cultivation requires heavy investment, constant attention, careful nursing, throughout knowledge, skill and experience. Commercial ginger cultivation is in practise for the last 30 years, with more than 10 varieties of ginger grown in the taluk. Ginger crop is more susceptible to pests and diseases. The attack of pests and diseases affects adversely the yields of ginger. Most of the cultivators do not attend this factor with almost care, due to various reason such as, lack of capital at hand and lack of knowledge of proper control measures. The questions which will be attempted to answer in this research report are: What are the various motivating factors for farmers to switch over to ginger cultivation in recent times? What are the various favourable factors enabling the tremendous growth of Ginger in the taluk? How to create awareness about Ginger cultivation and its revenue earning capacity? Which are the limitations existing in the export of Ginger? To explore answers for these questions, the research has been undertaken.

Objectives of the study:

1. To study the agricultural profile of Karnataka state, with special reference to T. Narasipura Taluk
2. To understand the various factors related to Ginger cultivation and its productivity

3. To highlight the export potential of Ginger crop in the study area.
4. To list out various limitations of ginger export and to suggest measures to deal with those problem.

Study area: The study is limited to T. Narasipura Taluk of Mysore District.

Data Collection: This report is prepared using only the secondary data available from various published sources. The annual report of horticultural statistics, published by Horticultural department of Government of Karnataka has been extensively used to collect information about production, productivity and export value of Ginger in the study area.

Findings and Inferences:

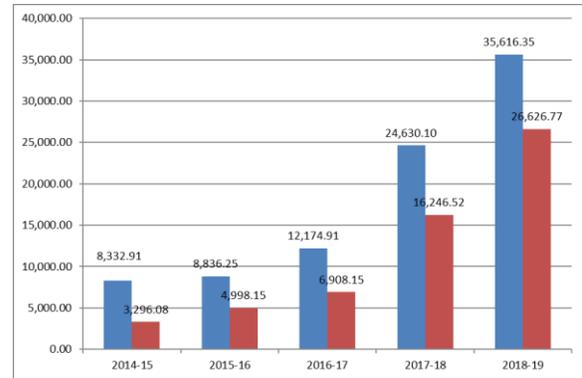
- It shall be lime bleached
- Its fibrous content shall be characteristic of the variety with peel not entirely removed
- It shall be free from added colouring matter.
- It shall be free from mould growth and living insects and practically free from dead insects, insect fragments and rodent contamination.
- It shall have characteristic taste and flavour and shall not have a musty odour or a rancid or bitter taste.
- It shall comply with restrictions in regard to Aflatoxins, Metallic Contaminants, Insecticide or Pesticide residue, poisonous metals, naturally occurring Contaminants, Microbial load and the like as specified by the Codex Alimentarius Commission or as per buyers requirements for Export purposes and the Prevention of Food Adulteration Rules, 1955 for domestic trade.

Export of Ginger has increased from 8,332.91 tonnes in 2007-08 to 35,616.35 tonnes in 2018-19 in quantum and increased from Rs. 3,296.08 Lakhs to Rs. 26,626.77 Lakhs in value terms.

Export of Ginger in the last five years is as follows.

Year	Quantity in Tonne	Value in Lakh Rs.)
2014-15	8,332.91	3,296.08
2015-16	8,836.25	4,998.15
2016-17	12,174.91	6,908.15
2017-18	24,630.10	16,246.52
2018-19	35,616.35	26,626.77

Source: DGCIS



The first ever Agriculture Export Policy (AEP) was introduced by the Government in December 2018. As a part of the process of implementation of AEP, 18 States viz. Maharashtra, U.P., Kerala, Nagaland, Tamil Nadu, Assam, Punjab, Karnataka, Gujarat, Rajasthan, Madhya Pradesh, Andhra Pradesh, Telangana, Manipur, Sikkim, Nagaland, Mizoram and Uttarakhand and the 2 UTs viz., Ladakh and Andaman & Nicobar Islands have finalized the State specific Action Plan. The State Level Monitoring committee has been formed in 25 States and 4 UTs. 28 States & 4 UTs have nominated respective Nodal agencies for implementation of AEP.

REFERENCES

- [1] Reports, Directorate of Economics & Statistics, Government of Karnataka, Bangalore.
- [2] Dhillan, A. R. (2003). extent and export potential of major flowers grown in Haryana and other parts of India. *Agricultural Marketing* , 27-29.
- [3] HN, Nikhil. (2008). *A study of Arecanut Marketing and Prices under Economic liberalisation in Karnataka*. Bangalore: Univeristy of Agricultural Sciences.
- [4] Horticulture, Department of (2016). *Horticulture crops statistics of Karnataka*. Bangalore: Government of Karnataka.
- [5] LB, Hugar. (1980). *Marketing of Vegetables in Belgaum City: An economic analysis*. Dharwad: University of Agricultural Sciences.
- [6] Rani Rei, O.A and M. Fadiga. (2004). Forecasting Agricultural Commodity prices with Asymmetric error GARCH models. *Journal of Agricultural research in Economics* , 71-85.
- [7] RV, Deshpande. (2003). Administrative reforms in the field of Agricultural Marketing in the

context of WTO. *Indian Journal of Agricultural Marketing* , 1-13.

- [8] SK, Sarangi. (2006). *Marketing Management*. Mumbai: Asian Book House.
- [9] Srivastava, R. C. (2006). *Agricultural Markets and Transport Network*. Hyderabad: Rawat Publication.
- [10] Statistics, D. o. (2016). Bangalore: Government of Karnataka.
- [11] Y, R. (2008). Profile of rural marketing in new perspectives. *rural and agricultural marketing* , 821-825.