

CHAPTER – I

INTRODUCTION

- 1.1 Introduction
 - 1.2 Selection of Problem
 - 1.3 Significance of the Research Work
 - 1.4 Objectives
 - 1.5 Study Region
 - 1.6 Data base
 - 1.7 Methodology
 - 1.8 Limitations
 - 1.9 Review of Literature
 - 1.10 Outline of the Research Work
- References
-

1.1 INTRODUCTION:

Agriculture is the backbone of Indian economy. It provides the means of livelihood for nearly 63 percent of her 1020 million peoples, contributes approximately 23 percent of the GDP, accounts for about 11 percent of her exports and plays a vital role in her industrial development by supplying raw materials. However, in the era of globalization, agriculture especially in developing countries is facing many problems. Inadequate and inferior production of cash crops is one of the problems being faced by Indian agriculture. So it is the need of the time to increase the area under cash crops and their productivity and quality as an alternatives for traditional food crops. Cultivation of condiments and spices has good scope in India. In fact, varied agroclimatic conditions prevailing in India are suitable to grow almost all spices.

In India plantation of 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.

Ginger is one of the important spice crops having an area of 85,930 hectares with a production of 3,07,370 tons in India. At International level India is a leader with 50 percent of the total global production of ginger. But there is wide gap in average yield per hectare of ginger ranging from 327 Kg in Himachal Pradesh and the 6862Kg in Mizoram. So there is tremendous scope to increase the yield per unit area and thereby the total production.

Maharashtra is one of the leading producer of ginger in which Satara district plays an important role since longback. Although area under this crop is less in Satara district (1537 ha. In 2004-05), it is well known for its quality production. Moreover as compare to sugarcane this is more beneficial crop of this district. Besides this most important advantage of ginger cultivation is that it could be stored

in the farm for 1 to 2 years and can be harvested when the market rates are favorable. As a result recently many farmers are attracted towards ginger cultivation.

Although, due to its quality 'Satari Aale' is well demanded in local and national market, certain problems like large capital investment, fluctuation in market rates and infection of pest and disease are some of the constraints in successful ginger cultivation. Hence, study of ginger cultivation has attracted many scholars.

1.2 SELECTION OF PROBLEM:

The researcher has selected the Ginger Cultivation in Satara District for the present study. The selection is based on following consideration.

- In Western Maharashtra, Satara district is relatively well watered and fertile part of the state and it is emerging as a productive agricultural region.
- Krishna river is the backbone of district's agriculture.
- Ginger cultivation is regarded as an integral part of the agriculture in the region.
- There are spatio-temporal variations in aerial concentration, production, marketing and economy of ginger cultivation in the study region.
- In the National and International market this cash crop has achieved its own position.
- The researcher is born and brought up in the same region and has close association with the ginger cultivation.
- The geographers have not studied ginger cultivation of this region yet.

All these consideration have motivated the researcher to undertake a geographical inquiry of ginger cultivation in Satara district.

1.3 SIGNIFICANCE OF THE RESEARCH WORK:

In the light of the fact that nearly 60 percent of the area in India is already under cultivation and there is very little scope for its further extension. Hence intensification of agriculture is the only solution to mitigate the increasing needs of agricultural produce. Among commercial crop ginger is one of the important spice crops that can provide economic support to the farmers. Cultivation of ginger varies according to rainfall and slope of the land. At present ginger cultivation is the main stay of some of the farmers in Satara district of Maharashtra State.

1.4 OBJECTIVES:

In view of the above, following specific objectives are selected such as:

1. To examine the physical determinants of ginger cultivation.
2. To assess the role of socio - economic determinants in ginger cultivation.
3. To study the spatial distribution and temporal growth of ginger cultivation with micro level analysis.
4. To compare the cost benefit ratio of ginger cultivation according to altitude and size of holdings.
5. To analyse the marketing system of ginger.
6. To highlight the problems and prospects of ginger cultivation.

1.5 STUDY REGION:

The study region selected for present investigation is Satara district (Fig.1.1) in general and Koregaon tahsil of the district in particular. The district is located in Southern part of Maharashtra between 17⁰5' to 18⁰11' North latitudes and 73⁰33' to 74⁰54' East longitudes and drains the Krishna and the Nira rivers. Having 10,492 sq.km. area (3.41 percent of state area), district is divided in to 11 tahsils and it support 27,96,906 population. The region has a slight circular shape with East - West stretch of about 120 k.m. The region presents diversified physiography with

SATARA DISTRICT LOCATION MAP

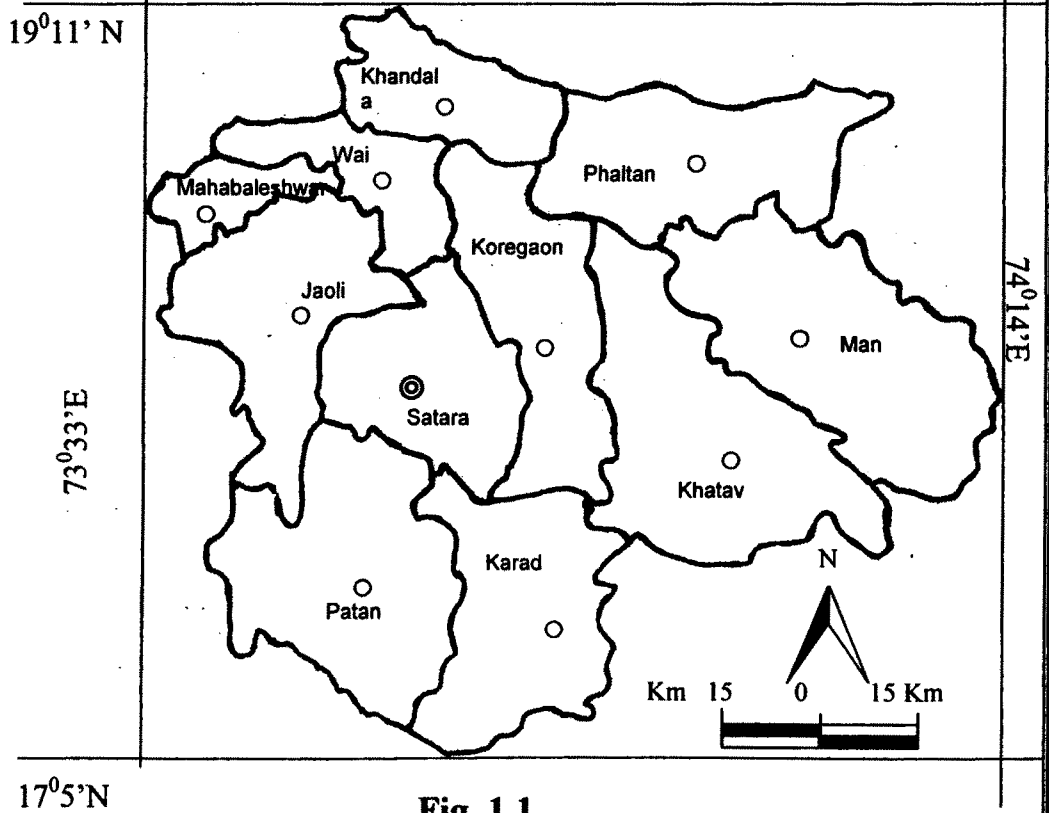
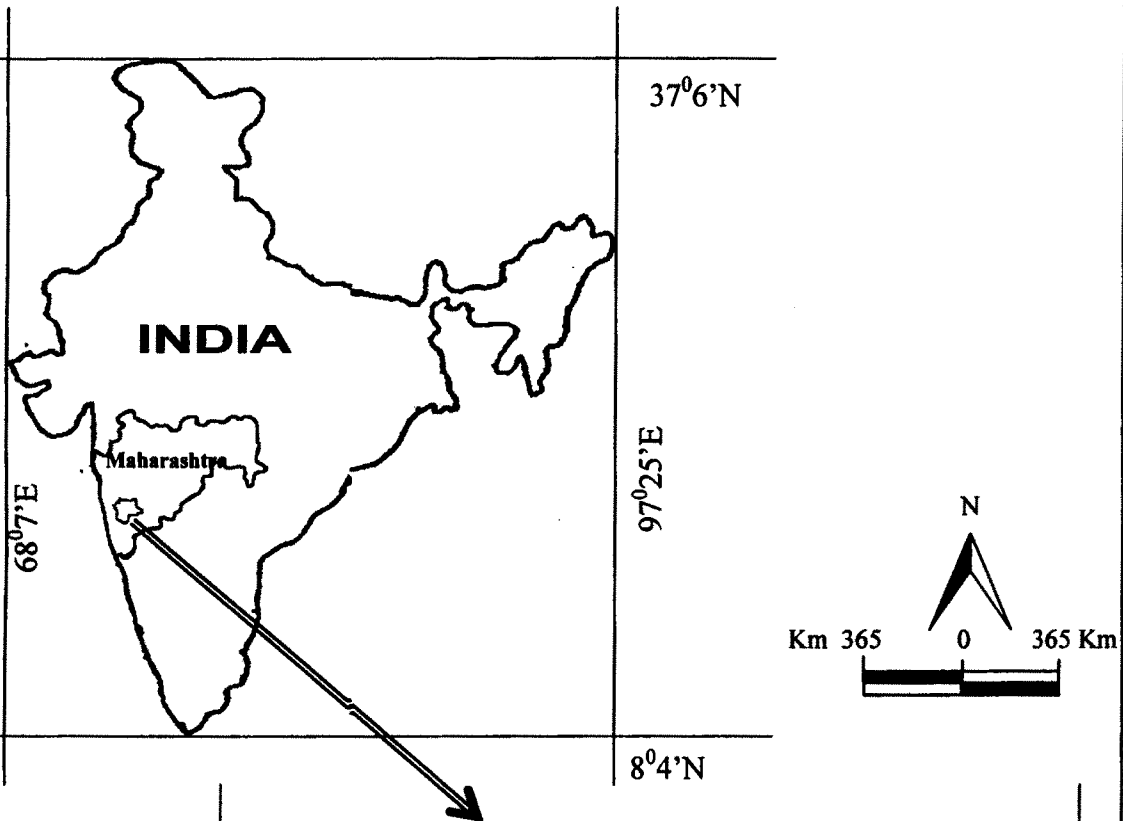


Fig. 1.1

hilly region dominated by leeward slopes of Western Ghats in west and alternative valleys and ridges culminating gradually into plateau in the east. The daily maximum temperature in hot season is 34⁰c to 37⁰c while the daily minimum temperature in cold season is between 12⁰c to 15⁰c. The soils vary from laterite patches in the west through deep medium black alluvials of the river in the center and poor gray soils in the east. The region receives rainfall mainly from southwest monsoons, ranging between 5000 mm to 200 mm. from west to east. The eastern part, which fairly falls in the rain shadow belt, experiences frequent drought conditions.

1.6 DATA BASE:

Basically the entire research work is based on primary data collected through intensive field work by employing schedule and questionnaire techniques. The informal discussions with ginger growers, ginger traders, agricultural experts, experimental farmers, agro consultant and office bearers of agricultural department provided the concrete base for the further analyses. Leading tahsil in ginger hectarage namely Koregaon has selected for further analysis. Ten percent villages and ten percent ginger growers from Koregaon tahsil are selected by stratified random sampling method for micro analysis.

The secondary data and information has been collected through village revenue offices, Taluka Revenue offices, Training and Visit's Scheme, Zilla Parishad, Satara, 'Soil and Water Conservation and Survey' Department, Satara, Office of Directorate of Horticulture, Pune and Satara, Office of Superintendent of Agriculture Satara, District Statistical office etc. Besides this some literature is referred from the certain journals, books and reports those have been mentioned under the heading of 'Bibliography'.

1.7 METHODOLOGY:

The commodity approach has been adopted for the present investigation. Satara district of southern Maharashtra is selected as a study region in general and Koregaon tahsil of this district in particular on the basis of highest area

under ginger cultivation. Whereas, village and farm plots have been chosen as an aerial unit for micro level analysis. The stratified random sampling (10 percent) method has been adopted for the selection of the villages based on area under ginger cultivation and elevation from mean sea level. Same sampling method has been used for the selection of ginger growers. The collected data through different sources were edited, processed and analysed by using different cartographic techniques such as isopleth, choropleth, graphs, charts, maps etc. Some statistical techniques are also used to explain the correlation between different factors.

1.8 LIMITATIONS:

Being a micro level study village is the aerial unit selected for investigation. However, in some cases satisfactory records from these offices were not made available. Moreover, these offices do not publish village-wise yearly statistics of agriculture in detail. The researcher in such situation has to restrict the area of enquiry. To make good of these deficiencies sample surveys were undertaken covering various aspects of ginger cultivation.

Besides this at the time of collection of primary data it has been observed that some of the farmers, due to illiteracy could not give correct and relevant information. Especially some of the ginger growers to put secrets about the production and net returns of particular crop did not respond fully. To overcome this difficulty an attempt has been made to achieve the relevant information by consulting the educated and knowledgeable farmers of the neighborhood area.

1.9 REVIEW OF LITERATURE:

The knowledge of research work in the past relating to the problem under study is necessary and can help in proper understanding of concepts, methodological and analytical issues relating to the study. In view of this it is observed that several attempts have been made by climatologist, agricultural scientists, as well as economists and scholars from other disciplines to study the different aspects of various spices cultivation.

The study of ginger cultivation is mostly done in Agricultural Universities. Especially studies concern with the scientific techniques of plantation method, protection of crops as well as improvement in the yield and quality of the product. However, studies related to spatial organisation and a temporal changes of ginger cultivation at micro level has not given full attention.

In view of this, Ridley (1912), Burkill (1966) and Rosengarten (1969) studied about the origin and history of ginger cultivation. The geographical studies on ginger cultivation as such are relatively rare. However, Randhawa, Nandpuri (1970) and Paulose (1973) have studied silent features of ginger cultivation in India, highlighting the basic role of factors like climate, soil, water etc. in ginger cultivation. Nair and Varma (1971) studied ginger cultivation practices in Kerala. Abdul Smad (1953) described basic factors of ginger cultivation in Malbar. Kingra and Gupta (1977) examined ginger cultivation practices in Himachal Pradesh with special reference to hilly region. Besides these Arya (1986,1989) attempted study of ginger potential in Himachal Pradesh and India. Ginger cultivation practices in Orissa are studied by Panigarhi and Patro (1985).

Among the geographers outside India, Groszmann (1954, 1984) Whiley (1974) and Guenther (1958, 1959) also studied ginger production in Queensland and Jamaica respectively. Moreover Haynes, Patridge and Sivan (1973) have analysed the ginger production technology in Fiji.

Aiyer (1944) and Paulose (1973) have proved that temperature range from 28⁰C to 35⁰C is favourable for ginger cultivation and concluded that ginger is grown in India on a wide variety of soils but is very sensitive to waterlogging. The influence of light and temperature on leaf area index, chlorophyll content and yield of ginger have been analysed by Shankar and Swamy (1988). Ravishankar and Mathuswamy (1987) studied the quality of ginger grown in different light intensities. Jayachandran et al. (1991) highlighted the performance of ginger under shade and on open conditions.

Khan (1959), Aiyadurai (1966), Sood, Sharma (1976) and Sirohi (1980) studied the schedule of planting that influences the yield of ginger. Singh

(1971), Venkataraman (1980), Mishra (1981), and Jha (1986) gave importance of mulching in ginger cultivation. Gowda, Melenta and Prasad (1999) examined the influence of NPK on the yield of ginger. Effect of growth regulators on ginger cultivation has been studied by Enver and Valicek (1994). Butler (1918), Park (1939), Burtuc (1942), Takahashi (1954), Joshi (1974), Sharma (1979), Ghorpade (1983), Ramchandran (1989), Chauhan and Paten (1990), and recently Sood Ruchi (2002) have analysed pest and diseases of ginger.

Aiyadurai (1966), Randhawa and Nandpuri (1970) record that at the Ambalavayal Research Station in Kerala 'Rio-de-Janeiro' give the highest yield compare to any other varieties. Post-harvest technology in ginger described by Lal, Joshi and Rattan (1990). Jayachandran (1992) and Subramanyam (1962) have analysed the importance of low storage temperature and relative humidity for longer safe life of fresh ginger.

The economics of ginger cultivation has been studied by Mittal (1969) in Sirmour District of Himachal Pradesh. Anand (1982) and Satney (1989) studied the selected markets for ginger and its derivatives with special reference to dried ginger. Sikka and George (1983) found that the ginger waste material after processing is best and nutritious feed to the domestic animals. Moreover Leung (1984) studied by-products of ginger. Sayana (1948), Vaswani (1948), Agarawal (1949), Bansil (1961), Bendall and Daly (1966), Shrinivasan (1968) studied about the marketing of ginger.

In Maharashtra several researchers worked on ginger for their M.Sc Degree in Mahatma Fhule Agriculture University, Rahuri, they are as follows: Phadtare (1980), Datkale (1984), Gavande (1986), Chavan (1997), Pol (2001), Shewate (2005), Vidhate (1997) and Pawar (1985).

It is evident from the review of literature that the works on ginger cultivation of geographical relevance are very few. However, the above studies will be useful in present investigation.

1.10 OUTLINE OF THE RESEARCH WORK:

Entire work has been organised into six chapters including findings and recommendations.

Chapter first opens with the introduction, which includes selection of problem, significance of research work, objectives, study region, database, methodology, limitations, review of literature and outline of the research work.

Chapter second presents geographical setting including physiography, climate as well as study of soil in view of suitability for ginger cultivation in the study region.

Chapter third deals with the analysis of the socio-economic factors which includes demographic factors, such as population growth, density and spatial pattern of farm workers, irrigation facilities and infrastructural aspects which influence the agriculture in general and ginger cultivation in particular.

Chapter fourth is related to origin and spread of ginger cultivation as well as spatio-temporal growth and development of ginger cultivation in India, Maharashtra, and study region.

Chapter fifth highlights the economics of ginger cultivation. This chapter is concerned with the per hectare yield, returns and cost benefit ratio of ginger cultivation according to altitude and size of holdings. It also includes the marketing of ginger, marketing channels, monthly fluctuation in ginger market rate, marketing constraints.

Chapter sixth is devoted to the study the findings and recommendations for ginger cultivation followed by the bibliography at the end.

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