

## A STUDY ON CULTIVATION PRACTICES OF TURMERIC CROP IN KARNATAKA

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### *Abstract*

*India is recognised as the spice capital of the world, and Indian spices have a solid reputation. Turmeric, the golden spice, is widely grown in India, China, Myanmar, Nigeria, Bangladesh, Pakistan, Sri Lanka, Taiwan, and Indonesia, among other places. India is the largest of these countries in terms of both area and Production. The study deals with the cultivation practices of turmeric farmers in Karnataka. Turmeric growers face a variety of challenges, including a shortage of labour, a lack of agricultural research stations for the turmeric crop, a lack of quality seed, a lack of technology, and storage issues. Many essential suggestions have been offered to help turmeric growers solve their challenges. including a guaranteed and reasonable selling price, timely availability of quality seeds and credits, timely guidance of VEWs and the organisation of farmer exhibitions, subsidised fertilisers and pesticides, and the establishment of a separate turmeric research station.*

**Keywords:** *Turmeric, Cultivation, Spices, Production*

### **INTRODUCTION**

India is known as 'Land of Spices'. India is the world's largest spice producer, user, and exporter. 90 percent of India's production is used for domestic consumption. Turmeric is a spice that has been used for millennia for colouring, flavouring, and medicinal uses. Turmeric is grown in more than 25 Indian states, with Telangana, Andhra Pradesh, Karnataka, Tamil Nadu, and Gujarat being the largest producers. Turmeric was grown on roughly 1.94 million hectares in India in 2016-17, with a total yield of 10.52 lakh tonnes. Telangana topped both the area and production charts in 2016-17, with 50,000 hectares and 2,55,000 tonnes produced, followed by Tamil Nadu with 29,306 hectares and Andhra Pradesh with 134,122 tonnes. During the 2016-17 season, turmeric was grown on 14,994 hectares in Karnataka, with a total production of 76,490 tonnes. Belagavi district is second largest turmeric producing district with an area of 5,193 hectares and production of 32,573 tons of turmeric only after Chamarajanagar district with an area of 8,464 hectares and production of 34,744 metric tons of turmeric. Mysuru (2,345 ha and 25,660 metric tons) Bagalkot (2600 ha and 10,496 metric tons) in the state during the year 2018-19.

### **REVIEW OF LITERATURE**

**N. Kiruthika (2013)** The study revealed that marginal farmers saw greater production costs than small and large farmers, which was a result of economies of scale. The results of the production function study showed that more rhizomes, labour, organic manure, irrigation, and inorganic fertiliser would all contribute to a higher output. It was also discovered that the quantities of labour, rhizomes, organic manure, and inorganic fertilisers were all underutilised.

**Viraj C. A. et. al (2018)** The research found that the multiple determinations coefficient ( $R^2$ ) is 0.90. Rhizomes (0.32), tractor charge (0.19), human labour (0.80), chemical fertiliser (0.26), and FYM (0.19) were determined to be positive and very significant at the 1 percent level, according to the study's findings. It showed that human labour, followed by rhizomes, chemical fertiliser, FYM, tractor and machinery, was shown to have the greatest influence on yield determination.

**R. Govindasamy et. al (2021)** The study found that, it is lucrative to grow turmeric, with an average cost of production per acre of Rs. 108794 and a gross profit of Rs. 214821. Per acre, the Net Income was Rs. 106027. The fact that the Cost-Benefit Ratio was more than one shows that turmeric production was very lucrative and profitable for the growers.

## OBJECTIVES

- ❖ To study the cultivation practices of turmeric in Karnataka;
- ❖ To study the area, production and productivity of turmeric in major districts of Karnataka;
- ❖ To mention the problems and suggestions to improvement of the turmeric cultivation practices and production;

## METHODOLOGY

The study was mainly based on the secondary data from various sources, which included Annual Reports, Yearbooks, Statistical Data publications of Spices Board, Indiastat.com, Ministry of Commerce and Industries and Arecanut and Spices Development Board.

## RESULTS AND DISCUSSION

### Cultivation Practices of Turmeric in Karnataka

**Turmeric-Varieties** - A number of cultivars are available in the country and are known mostly by the name of locality where they are cultivated. Some of the popular cultivars are Duggirala, Tekurpeta, Sugandham, Amalapuram, Erode local, Alleppey, Moovattupuzha, and Lakadong. The improved varieties of turmeric are Suvarna, Suguna, Sudarsana, Prabha, Prathibha, Krishna, Sugandham, Roma, Suroma, Ranga, Rasmi, Rajendra, Sonia, Alleppey, Supreme, Kedaram.

**Preparation of Land** - The land is prepared with the receipt of early monsoon showers. Four deep ploughings are used to bring the soil to a fine tilth. For laterite soils, hydrated lime at a rate of 500 kg/ha must be applied and well ploughed. Beds of 1.0 m width, 15 cm height, and convenient length are prepared as soon as pre-monsoon rains arrive, with a 50 cm space between beds. Forming ridges and furrows is another method of planting.

**Seed material** - For planting, whole or split mother and finger rhizomes are used, with well-developed, disease-free rhizomes being chosen. In furrows and ridges, the ideal spacing is 45-60 cm between rows and 25 cm between plants. For one hectare of turmeric, a seed rate of 2,500 kg of rhizomes is required.

**Weeding and Irrigation** - Weeding is required three times after planting, at 60, 90, and 120 days, depending on the severity of the weed. Irrigated crops require 15 to 23 irrigations in clayey soils and 40 irrigations in sandy loams, depending on weather and soil conditions.

**Mixed Cropping** - Turmeric is grown as an intercrop with with chilies, colocasia, onion, brinjal, and

cereals such as maize, etc.

**Curing of Turmeric Rhizomes** - The dirt and other contaminants are rinsed out of the harvested rhizomes. After that, finger rhizomes are detached from mother rhizomes and cooked for 1 hour in boiling water in a somewhat alkaline environment (100g of sodium bicarbonate or sodium carbonate in 100 litres of water). Typically, copper galvanized/iron or earthen vessels are used to cook turmeric. Boiling takes 40–60 minutes to achieve the desired stage. In the same way, mother rhizomes are cured. In most cases, mother rhizomes and finger rhizomes are cured individually.

**Drying of Cured Turmeric** - Cooked turmeric rhizomes are sun-dried for 10–15 days on a bamboo mat or a drying floor. Depending on the variety, locality, and cultural practises, dry recovery ranges from 15–30 percent. The dried turmeric is polished either manually by rubbing it on concrete floors or mechanically in drums powered by electricity. Turmeric powder, either as powder or as an emulsion, is added to the drum to give the rhizome a vivid colour.

**Sorting and Grading of Turmeric** - The size, colour, and shape of the item are used to grade it. The most common grades are 'finger' and round 'split.' Cured turmeric is labelled with its varietal designations as well.

#### PRESERVATION OF SEED

\* Rhizomes for seed are heaped in the shade of trees or in well ventilated sheds and covered with turmeric leaves.

\* Sometimes the heap is plastered over with earth mixed with cow dung

#### THE AREA, PRODUCTION AND PRODUCTIVITY OF TURMERIC IN MAJOR DISTRICTS OF KARNATAKA

Karnataka is one of India's most important turmeric-producing states. For the past few years, the area and production of turmeric in Karnataka has been expanding. The districts of Chamarajanagar, Mysore, and Belgaum produce the most turmeric in Karnataka.

**Table 1: The Area, production and productivity of turmeric in major districts of Karnataka 2018 - 19**

District	Area (ha)	Production (MT)	Yield (MT/ha)	Value (Lakh Rs)
Davangere	53(0.26)	524(0.44)	9.89	697
Kolar	44(0.21)	406(0.34)	9.23	1226
Bagalkote	2600(12.86)	10496(8.92)	4.04	13411
Belagavi	5193(25.69)	32573(27.70)	6.27	15088
Vijayapura	187(0.92)	1273(1.08)	6.81	902
Bidar	348(1.72)	3502(2.97)	10.06	11632
Kalaburagi	580(2.87)	4132(3.51)	7.12	3075
Raichur	72(0.35)	1080(0.91)	15.00	14094
Chamarajanagara	8464(41.88)	34744(29.55)	4.10	10433
Chikmagalore	55(0.27)	574(0.48)	10.41	30674
Hassan	83(0.41)	327(0.27)	3.94	90587
Mandya	75(0.37)	1143(0.97)	15.30	429
Mysuru	2345(11.60)	25660(21.82)	10.94	22016

State Total	20208	117558.0	5.82	495707
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Source: Horticulture Crop Statistics of Karnataka state at a Glance 2018-19: pp62.

Table 1 indicates the area, production, and productivity of turmeric in major districts of Karnataka. Whereas the majority, 29.55 percent (34744 MT) of turmeric is produced using 41.88 percent (8464 ha) of land in the Chamarajanagar district and its productivity was 4.10 MT/ha. Only 0.21percent (44ha) of turmeric was produced using 0.34 percent (406 MT) of land in the Kolar district and its productivity was 9.23 MT/ha. Therefore, the observation from the study clearly reveals that the year of 2018-19 a total of 117558.0 metric tonnes of turmeric was produced using 20208 ha of land in Karnataka and its productivity was 5.82 MT/ha, with some fluctuations in the districts of Karnataka.

## PROBLEMS AND SUGGESTIONS TO IMPROVEMENT OF THE TURMERIC CULTIVATION PRACTICES AND PRODUCTION

### Problems

- **Lack of proper knowledge:** Many farmers are unaware of the right strategies for growing turmeric. Farmers lack sufficient understanding of the market for improved seeds and herbicides. Traditional farming practises are used by the majority of farmers. It is really costly.
- **Non availability of labour during peak time:** In turmeric farming, there is a demand for labour. To remove weeds, fertilise, spray insecticides, and boil turmeric, farmers require workers. However, there are occasions when labours are unavailable. Furthermore, worker wages have risen, causing farmers' production expenses to rise as well.
- **High cost of fertilizers & pesticides:** Turmeric farming necessitates the application of fertilisers and insecticides. There is a need for fertilizers to increase the yield of turmeric, as well as pesticides to protect against disease. Farmers do not always have access to these at the correct time, and the prices are exorbitant.
- **Non availability of storage facilities:** Farmers lack the necessary storage facilities to keep the turmeric they have cultivated for several days. Farmers are forced to sell their produce at reduced rates in the market due to a lack of storage facilities.
- **problem of transportation:** Fertilizers and pesticides must be transported to the farm, and cultivated produce must be sold, but farmers do not have access to good transportation, and so must pay higher transportation expenses.

### Suggestions

- To address the real challenges of turmeric producers in an organised manner and design a strategy for turmeric production, a consortium of progressive turmeric growers, scientists from various organisations, and representatives of turmeric growers' associations is required.
- More effort should be placed on developing specific turmeric varieties. Seed-producing agencies should be established in the state's turmeric-growing areas so that farmers are not harmed by the cost of seed transportation and the lack of certified seeds.
- Because changes in area and productivity are producing volatility in turmeric production, the government should focus more on pricing methods, market facilities, and policies that will assist stabilise prices and boost farmer profits.

- To make the greatest money from the sale of turmeric, one must wait for the market price of turmeric to rise. Until then, suitable storage facilities for turmeric should be provided, as well as proper training to improve farmers storage habits.
- More infrastructure should be built by the government to address important issues such as suitable storage facilities, better varieties, adequate electrical supply, chemical fertilisers, improved transportation, and pesticides.

## CONCLUSION

India is the largest producer and consumer of turmeric and also the biggest exporter of the world. Karnataka is one of India's major turmeric growing states. Chamarajanagar, Belgaum, Mysore, Bagalkot and Kalaburagi districts are the major turmeric growing districts of Karnataka. the study revealed that, a total of 117558.0 metric tonnes of turmeric was produced in Karnataka utilising 20208 ha of land, with a productivity of 5.82 MT/ha, with some variations among the districts of Karnataka in the year of 2018-19. growers in Karnataka require timely fertilisers and insecticides, as well as high-quality seeds, professional labour, storage, and transportation. Turmeric output and yield will rise if all of these facilities are available.

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