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RESEARCH PAPER

Economics of ginger production in Satara district of Western Maharashtra

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Abstract : The present study entitled, 'Economics of ginger production in Satara district of Western Maharashtra' is based on a sample of 40 ginger growers drawn from Koregaon and Khatav tehsils of Satara district. The study was based on both primary and secondary data. Primary data were collected through personal interview method from ginger growers, with the help of well-structured and pretested questionnaire exclusively designed for the study. The data collected was pertaining for the year 2019-2020. The total gross returns obtained from ginger cultivation was Rs. 10,09,861.20/ha. The cost of cultivation *viz.*, Cost C was Rs. 5,21,104.49/ha in ginger cultivation. The share of cost A and cost B in the total cost was Rs. 3,14,652.74 and Rs. 4, 84,934.49, respectively in ginger cultivation. The various measures of income were worked out with the particular level of cost. The farm business income and the family labour income was Rs. 6,95,208.46 and Rs. 5,24,926.71 for ginger cultivation, respectively. The net profit for ginger cultivation was Rs. 4, 88,756.71. The benefit-cost ratio obtained was Rs.1.90 for ginger cultivation *i.e.,* by spending 1, they got back Rs. 1.90 in ginger cultivation. The per quintal cost of production of ginger was Rs. 1,174.45. It was found that the net return in ginger cultivation was high indicated that, cultivation of ginger is profitable venture.

Key Words : Cost, Returns, Profitability, Ginger

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INTRODUCTION

Agriculture is the main occupation of rural masses. Agriculture form the backbone of Indian economy and despite concentrated on Industrialization in the last six decades, agriculture occupies a place of pride, being a largest industry in the country, which provides employment to work force in the country. It provides not only the employment, food grain for domestic consumption but a large number of our exports are also dependent on it. Among the various crop group's, spices group is one of the dominant group in India. Ginger (*Zingiber officinale*) is known in India from the ancient time and has been used in innumerable ways for flavouring food and other dietary preparation and also in medicine.

Generic name of ginger is derived from the Greek word *zingiberis*, which comes from the ancient Sanskrit singabera, meaning 'shaped like a horn'. It first seen in the writings of Confucius in the 5th century BC. It has been used medicinally in the West for atleast 2000 years. In India, ginger is called "Aadu" in Gujarati, "Shunti" in Kannada language (Karnataka), Allam in Telugu, Inji in

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Tamil and Malayalam, Alay in Marathi, and Adrak in Hindi and Urdu. Ginger is a perennial herb, of family *Zingiberaceae*, probably native to south-eastern Asia. It is produced everywhere and picked and dug in autumn and winter. In a broader sense, the term ginger can be applied to all plants in the genus Zingiber (the "true gingers") and the *Zingiberaceae* family is known as the "ginger family". India is popularly known as the "Spice Bowl of the world" as a wide variety of spices with premium quality is grown in the country since ancient times. In Vedas, as early as 6000 BC, scruples evidences are available regarding various spices, their properties and utility. Among the commodities that were traded during that period, spices occupied a major portion due to their superior quality and diversity which attracted foreigners to India.

It is propagated through rhizomes. Rhizomes put forth erect, leafy stems 30-90 cm. In height, 15-20 cm long, narrow, lane late and with a prominent midrib ginger grows well in warm and humid climate and is cultivated from sea level to an altitude of 1500 m above sea level. Ginger can be grown both under rain fed and irrigated conditions. For successful cultivation of the crop, a moderate rainfall at sowing time till the rhizomes sprout, fairly heavy and well distributed showers during the growing period and dry weather for about a month before harvesting are necessary. Ginger thrives best in well drained soils like sandy loam, clay loam, red loam or lateritic loam. However, being an exhaustive crop it is not desirable to grow ginger in the same soil year after year. The crop performs well in a temperature range of 19°C-28°C and a humidity at 70-90 per cent. The best time for planting ginger in the West coast of India is during the first fortnight of May with the receipt of Pre monsoon showers. Under irrigated conditions, it can be planted well in advance during the middle of February or early March. Ginger attains full maturity in 210-240 days after planting. Harvesting of ginger for vegetable purpose starts after 180 days based on the demand. However, for making dry ginger, the matured rhizomes are harvested at full maturity *i.e.* when the leaves turn yellow and start drying.

The total area of ginger in the world along with production is 3641.551 thousand ha producing 9330.844 tonnes of ginger in the year 2019-20. India and Nigeria have the largest area under ginger cultivation. In India area under ginger cultivation is 165.00 ha with the production of 1.109.000 metric tonnes during the year 2019-20. Though the ginger can be grown in all states of India, the major production is confirmed to Assam, Maharashtra, West Bengal and Meghalaya. The area under ginger cultivation in Maharashtra is 7.83 thousand ha with production of 113.14 thousand metric tonnes in the year 2019-20.

Satara district is one of the leading ginger producing district in Maharashtra alone occupies nearly 50 per cent area and production of the state. In view of this the present study was undertaken with the specific objectives are as follows:

– To analyse trends in area, production and productivity of ginger in India.

– To study the cost and returns of ginger production.

MATERIAL AND METHODS

The sampling technique followed was multistage sampling procedure was adopted for selection of district, tehsils, villages and the ginger growers. In the first stage, Satara district was purposively selected because of availability of more area under ginger cultivation in the district. In second stage, two tehsil *viz.,* Koregaon and Khatav were selected. In third stage from each selected tehsil four villages were selected. In fourth stage, from each selected village five ginger growers were selected constituting a total sample size 40.

The study was based on both primary and secondary data. The primary data were collected through personal interview method from ginger growers, with the help of well-structured and pretested questionnaire exclusively designed for the study. The data collected from ginger growers by personal interview method and pertaining for the year 2019-2020.

Analytical tools :

Estimation of costs and returns :

Cost A: Includes the costs on account of hired human labour, bullock labour, machinery charges, value of manures, value of fertilizers, value of seedling, plant protection charges, land revenue, depreciation and repairs, interest on working capital etc.

Cost-B: Cost-B = Cost 'A' + rental value of land + interest on fixed capital.

Cost-C: Cost-C = Cost 'B' + imputed value of family labour.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized

under following heads :

Per hectare physical input and output in ginger production :

Per hectare utilization of physical input and output in ginger cultivation is presented in Table. 1.

From the Table 1 it was revealed that 62.30 man-days and 81.20 man-days of family male labour and hired male labour were utilized on per hectare ginger farm. Similarly, 25.10 man-days family female labour and 124.06 hired female labours were used on the same piece of land. It is seen that on an average 12 hours of bullock labours and 11 hours of machine labours were used on one hectare ginger field (Table 1).

The seed of ginger used in the form of rhizomes that is 27.60 quintals Rhizomes were used for one hectares land. 10 tonnes of farm yard manure was applied to soil before sowing. Selected farmers have utilized both types of fertilizers *i.e.,* straight as well as complex. In straight fertilizers, Urea, SSP, MOP, were applied which in complex Nimboli khat, 19:19:19, 13:00:45 and 12:61:00 were used. The plant protection chemicals used by the growers for per hectare farm was 6.12 lit. It is observed that selected growers have harvested, average 443.70 quintals total fresh ginger rhizomes.

Table 1 : Physical inputs and outputs in ginger production (per ha)

Sr. No.	Particular	Unit	Requirement
I	**Input**		
1.	Labour requirement		
A	Family human labour		
	Male	Man-Day	62.30
	Female	Man-Day	25.10
B	Hired human labour		
	Male	Man-Day	81.20
	Female	Man-Day	124.06
C	Machine labour	Hrs.	11.00
D	Bullock labour	Pair days	12.00
2.	Rhizomes (seed)	Qtl.	27.60
3.	Manures		
	FYM	Ton.	10.00
4.	Fertilizers		
	Straight		
	Urea	Kg	137.50
	SSP	Kg	152.00
	MOP	Kg	256.00
	Complex		
	Nimboli khat	Kg	625.00
	19:19:19	Kg	62.50
	13:00:45	Kg	75.00
	12:61:00	Kg	62.50
5.	Plant protection chemicals	Lit	6.12
II	**Output**		
	Total fresh harvested	Qtl.	443.70

Cost of cultivation of ginger farm:

Per hectare item wise expenditure in ginger production was estimated and information on various items of cost of cultivation of ginger is presented in Table 2. The result revealed that cost-C was found to be Rs. 5, 21,104.49. For ginger cultivation in which the contribution of cost A and cost B was 60.38 per cent and 93.06 per cent, respectively. On the contrary share of rhizome was 5.30 per cent. Among the various items of expenditure, the proportionate share of rental value of land was 32.30 per cent predominant because higher yield and prices of ginger. The share of hired human labour was 12.55 per cent.

The expenditure on manure and fertilizers was Rs. when constituted () per cent. In different items in working capital, plant protection cost Rs. 3,060 constituting (0.59) per cent, irrigation charges Rs.13,886 constituting (2.66) per cent, interest on working capital Rs.32,817 constituting (6.30) per cent, Land revenue Rs.120.80 constituting (0.02) per cent and depreciation on capital assets Rs. 29,270 constituting (5.62) per cent of the total cost.

Expenditure on labour cost, hired human labour cost Rs. 65,412, family labour cost Rs.36,170, machine labour cost Rs. 27,500 and bullock labour cost Rs. 24,000 were the cost collectively contributed (12.55) per cent, (6.94) per cent, (5.28) per cent and (4.61) per cent, respectively.

Profitability of ginger production (Rs./ha) :

The per hectare profitability of ginger cultivation was analysed and presented in Table 3. It is seen from the table that the total gross returns obtained from ginger cultivation was Rs. 10,09,861.20/ha. The cost of cultivation *viz.,* Cost C was Rs. 5,21,104.49/ ha in ginger cultivation. The share of cost A and cost B in the total cost of ginger cultivation was Rs. 3,14,652.74 and Rs. 4, 84,934.49, respectively. The various measures of income were worked out with the particular level of cost and it was again shown in Table 3. The farm business income *viz.,* gross returns minus cost A was Rs.

Table 2 : Cost of cultivation of ginger **(Rs./ha)**

Sr. No.	Particular	Amount	Percentage
1.	Hired human labour		
	Male	40,600.00	7.79
	Female	24,812.00	4.76
2.	Machine labour	27,500.00	5.28
3.	Bullock labour	24,000.00	4.61
4.	Seed (Rhizomes)	27,600.00	5.30
5.	Manure	40,000.00	7.68
6.	Fertilizers		
	Straight		
	Urea	825.00	0.16
	SSP	1,216.00	0.23
	MOP	3,507.20	0.67
	Sub total	1,90,060.20	
	Complex		
	Nimboli khat	30,625.00	5.88
	19:19:19	3,437.00	0.66
	13:00:45	5,250.00	1.01
	12:61:00	6,125.00	1.18
	Sub total	45,437.00	
7.	Irrigation charges	13,886.41	2.66
8.	Plant protection	3,060.00	0.59
9.	Total working capital (1 to 8)	2,52,443.61	48.44
10.	Interest on working capital @ 13 per cent	32,817.67	6.30
11.	Land revenue	120.80	0.02
12.	Depreciation on capital assets	29,270.66	5.62
13.	Cost-A(Σ item 9 to 12)	3,14,652.74	60.38
14.	Rental value of land (1/6th of gross return)	1,68,310.20	32.30
15.	Interest on fixed capital@ 10 per cent	1,971.55	0.38
16.	Cost-B (Σ item 13 to 15)	4,84,934.49	93.06
17.	Family labour		
	Male	31,150.00	5.98
	Female	5,020.00	0.96
18.	Cost-C (Σ item 16 to 17)	5,21,104.49	100.00

Table 3 : Profitability of ginger production (Rs./ha)

Sr. No.	Particular	Amount
1.	Gross return	10,09,861.20
2.	Cost-A	3,14,652.74
3.	Cost-B	4,84,934.49
4.	Cost-C	5,21,104.49
5.	Farm business income (Gross return - Cost-A)	6,95,208.46
6.	Family labour income (Gross return - Cost-B)	5,24,926.71
7.	Net profit (Gross return - Cost-C)	4,88,756.71
8.	Benefit-Cost ratio (Gross return / Cost-C)	1.90
9.	Per quintal cost of production (Cost-C / total harvested fingers)	1,174.45

6,95,208.46 for ginger cultivation and the family labour income *viz.*, gross returns minus cost B was Rs. 5,24,926.71 for ginger cultivation. The net profit *viz.,* gross return minus cost C for ginger cultivation was Rs. 4, 88,756.71. The benefit-cost ratio *viz.,* gross returns divided by cost C obtained was 1.90 for ginger cultivation. Per quintal cost of production of ginger was Rs. 1,174.45. It was found that the net return in ginger cultivation was high, therefore, the pre assigned hypothesis *viz.,* cultivation of ginger is profitable venture.

Conclusion :

It can be concluded that ginger cultivation was a profitable and money making enterprises in the study area with B/C ratio of 1.90. Cost of cultivation was found to be Rs. 5, 21,104.49 in which the contribution of cost A and cost B was 60.38 per cent and 93.06 per cent, respectively. Among the various items of expenditure, the proportionate share of rental value of land was 32.30 per cent predominant because of higher yield and prices of ginger. The share of hired human labour was 12.55 per cent. The contribution of cost-A and cost-B in cost-C was Rs. 3,14,652.74 and Rs. 4,84,934.49, respectively in ginger cultivation. Farm business income was Rs. 6,95,208.46, Family labour income was Rs. 5,24,926.71 and net profit was Rs. 4,88,756.71. Per quintal cost of production of ginger was Rs. 1,174,45. Ginger is profitable crop enterprise.

REFERENCES

Kadam, A.S., Suryawanshi, R.R., Dhengale, S.S. and Shinde, H.R. (2019). Economic analysis of production of ginger in Sangli district of Maharashtra. *Internat. J. Chem. Stud.,* **7** (6): 1456-1460.

Korikanthimath, V.S. and Govardhan R. (2000). Economics of ginger production in paddy field and upland situation, separately and simultaneously in Coorg district of Karnataka State. Mysore, *J. Agric. Sci.,* **34** (4) : 346-350.

Kumar, A. (2007). Economics of production and marketing of ginger in Nainital district of Uttarakhand, *Internat. J. Agric. Mktg.*, **49** (2):1-4.

Mathew, M., Vani, N. and Aparna, B. (2016). Economics of production of ginger in Wayanad district of Kerala, India. *Asian J. Res. Mktg.,* **63** (3) : 627-632.

Melati, Ilyas, S., Palupi, R. and Susila, A. D. (2016). Growth, yield and quality of ginger from produced through early Senescence. *Internat. J. Appl. Sci.& Technol.,* **6** (1) : 21-28

Shah, S.P. and Zala, Y.C. (2006). Cost- benefit analysis of ginger cultivation in middle Gujarat. *Agric. Econ. Res. Rev.,* **19** (2): 206.

Sundaram, I. Satya (2000). Spices striving hard to lead globally, *Facts for you*, **20** (5) : 13.

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