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Economic aspects of production, processing and marketing of turmeric in western Maharashtra

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ABSTRACT

This paper is an attempt to examine the economics of production, processing and marketing of turmeric. The results of the study based on the data (2001-02) collected from ninety turmeric growers selected from the six villages three each of Miraj and Walava tahsils of Sangali district in Western Maharashtra indicate that the mean cost of cultivation of turmeric was Rs. 84,420.56 per hectare. The 112.39 q of output *i.e.* the wet rhizomes gave the returns of Rs. 1,08,692.91 with the per quintal cost of production of Rs. 724.91 and the benefit cost ratio of 1.33. The farm level processing starts from separation of fingers from rhizomes, transportation from field to processing unit, filling of utensils, cooking, drying and polishing of cooked fingers. The per quintal cost of processing of these wet rhizomes was Rs. 156.25. The human labour was the major item and shared 44.10 per cent of the total cost of processing. This was followed by machine labour 27.73, utensil charges 21.34 and fuel 6.82 per cent. Even though processing loss of produce was about 67 per cent still the returns were raised to Rs. 1,49,760.00 as the processed produced fetched manifold higher price. The ratio of additional returns (Rs. 41,067.09) with additional cost (Rs. 17,549.98) was 2.34 indicated the value addition have resulted in more added benefits. The per quintal cost of marketing of turmeric in Sangali market was Rs. 417.61. The producer's share in consumer's rupee was 73.38 per cent.

Key words : Turmeric, Production, Processing, Marketing.

INTRODUCTION

Turmeric is known in India from the ancient time. It is used in vegetable preparation and thereby consumed in daily diet. It is useful in preparing dye, drugs and cosmetics. It has unique importance in performing pooja and many religious and marriage ceremonies in Indian culture. It is one of the important spices, which play an important role in the national economy, and is also one among the five important major spices of India. India has the unique position of being the largest producer and exporter of turmeric. Though turmeric can be grown in all the states in the country, the major production of this important spice crop is confined to Andhra Pradesh, Kerala, Orissa, Tamil Nadu, Maharashtra and Assam. The area under turmeric was 1,22,500 hectares with production of 5,25,155 metric tones in the country during the year 2000-2001. The area under turmeric in Maharashtra was about 8200 ha. during 2000-2001. The Sangali district is prime one in cultivation of turmeric in Maharashtra. It alone occupies an area of about 1048 hectares with production of about 6283 tonnes of turmeric. It is, therefore, attempted to undertake this in Sangali district of Western Maharashtra.

MATERIALS AND METHODS

The study was primarily based on the farm level data pertaining to different aspects such as resource use, costs, return profitability, farm level processing and marketing of turmeric. The area under turmeric is increasing day by day in Sangali district and therefore, two tahsils *viz.*, Miraj and Walva from Sangali district having maximum area under turmeric were selected purposively. The sampling technique adopted for this investigation was two-stage random sampling with the village as the primary unit and the cultivators growing the turmeric as secondary unit. Three villages were selected from each of the tahsils with the probability proportion to the area under turmeric. Fifteen cultivators were selected randomly from each of the village under study. Thus the total sample comprised of ninety turmeric growers. The data on physical resource use, input-output prices, yields obtained, processing of turmeric were collected for from selected cultivators the crop year 2001-2002. The data on marketing aspects were also collected from intermediaries involved in the marketing of turmeric. A simple method of tabular analysis was used to analyze the data.

RESULTS AND DISCUSSION

Resource use and costs structure

The data on per hectare utilization of different resources and cost of cultivation are presented in Table 1.

It could be revealed from the Table 1 that, the total human labour required for cultivation of one hectare of turmeric was 147.07 male days and 140.73 female days. In this total human labour, the male labour comprised of 64.71 days of hired and 82.36 days of own. Whereas, the total female labour comprised of 92.69 days of hired

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female labour and 48.04 days of family female labour. The per hectare bullock labour use, was 9.20 pair days. The per hectare use of planting material *i.e*. the rhizomes was 2159.78 kgs. Manure is a scare commodity now a days. Therefore, it was applied preferably to the high value crops. The per hectare use of manure for turmeric crop was 58.98 quintals. Whereas, the per hectare use of plant nutrients like nitrogen, phosphorus and potassium through chemical fertilizers was in the order of 119.94, 35.84 and 35.84 kg, respectively.

The data on cost of cultivation exhibited in the same table revealed that, the per hectare cost of cultivation for turmeric was worked out to Rs. 54,083.35, Rs. 73,253.36 and Rs. 81420.56 at cost A, cost B and cost C, respectively. The share of cost A and cost B in the total cost C was 66.42 and 89.95 per cent. The planting material, rental value of land and human labour both hired and family were the major items of cost and they have accounted for 29.18, 22.24 and 21.30 per cent, respectively of the total cost. A significant expenditure have also been incurred on machine labour (4.97 per cent), manure (4.68 per cent), Irrigation (5.09 per cent) and plant protection (3.46 per cent).

Table 1 : Per hectare resource use and cost of cultivation of turmeric

Sr. No.	Crops	Units	Cost in Rs.	Per cent
1.	Hired human labour (days)			
	Male	64.71	4529.70	5.56
	Female	92.69	4634.50	5.69
2.	Bullock labour (pair days)	9.20	1104.00	1.36
3.	Machine labour	-	4050.00	4.97
4.	Planting material (kg.)	2159.78	23760.00	29.18
5.	Manures (qt.)	58.98	3806.96	4.68
6.	Fertilizers (kg.)	-	1837.79	2.25
	N	119.94	-	-
	P	35.84	-	-
	K	35.84	-	-
7.	Irrigation	-	4147.69	5.09
8.	Plant protection	-	2824.34	3.46
9.	Land revenue	-	209.08	0.26
10.	Depreciation	-	398.67	0.49
11.	Interest on working capital	-	2780.62	3.43
	Cost 'A'	-	54083.35	66.42
12.	Rental value of land	-	18115.48	22.24
13.	Interest on fixed capital	-	1054.53	1.29
	Cost 'B'		73253.36	89.95
14.	Family human labour (days)			
	Male	82.36	5765.20	7.09
	Female	48.04	2402.00	2.96
	Cost 'C'	-	81420.56	100.00

Returns and profitability:

It was attempted to know the per hectare output, cost of production, returns and profitability in the cultivation of turmeric. The details in this regard are given through Table 2.

It is observed from Table 2 that, the per hectare output *i.e.* in the form of wet rhizomes of turmeric was 112.32 quintals and its gross value as per prevailing post harvest price was to the tune of Rs. 108692.91. By dividing the total cost of cultivation by output, the per quintal cost of production came to Rs.724.90. The net returns over cost A, cost B and cost C were in the order of Rs. 54609.56, Rs. 35,439.55 and Rs. 27,252.35, respectively. The output input ratio was observed to be 1.33.

Table 2 : Per hectare output, returns and profitability of turmeric

Sr. No.	Particulars	Valves
1.	Output (Wet *Rhizomes*) in quintals	112.32
	Value of output Rs.	108692.91
2.	Cost of cultivation Rs.	81420.56
3.	Per quintal cost of production Rs.	724.90
	Net returns over	
4.	Cost 'A' Rs.	54609.56
	Cost 'B' Rs.	35439.55
	Cost 'C' Rs.	27252.35
5.	Output input ratio at cost C	1.33

Farm level processing of turmeric:

The turmeric crop is harvested in the form of wet rhizomes, which are not used for direct consumption on large scale. It requires certain kind of farm level processing. These rhizomes consist of two sets. The first set, is preserved and used as planting material for next season. The second set bear some fingers, the material which is actually used for processing and consumed as a turmeric. The processing of turmeric takes place may be on the farmers' own field or at the processing units located at near by fields on hiring basis. Farm level processing starts from separation of fingers from rhizomes. The produce has to pass through different operations like transportation from field to the processing unit, filling of kail and cooking, drying and polishing of the cooked fingers. The cost data on account of performing these operations are presented in Table 3.

Table 3 revealed that the total cost of processing a lot of 112.32 quintals of raw turmeric was to the tune of Rs. 17,549.98. Human labour was the major item of

Table 3 : Cost of processing of turmeric (Fig. in Rs.)

Sr. No.	Item of cost	Cost incurred	Cost /quintal
	Rhizomes processed in qt.	112.32	
1.	Human labour	7741.84	68.93
		(44.11)	
2.	Machine labour	4867.19	43.33
		(27.73)	
3.	Fuel	1197.33	10.66
		(6.82)	
4.	Utensil charges (kail, kalai,	3743.62	33.33
	polishing drum etc.)	(21.34)	
	Total	17549.98	156.25
		(100.00)	

processing cost and it alone shared about 44 per cent of the total cost. This has followed by the machine labour (27.73 per cent), utensils and kail (big pan) charges (21.73 per cent), and fuel charges (6.82 per cent). Per quintal cost of processing of raw turmeric came to Rs. 156.25.

Costs and returns of processed turmeric:

The data on value addition and additional returns due to processing are given in Table 4.

The data exhibited in Table 4 revealed that, after adding the cost of processing of turmeric, a lot of 112.32 quintals to the tune of Rs. 17,549.98 in the total cost of cultivation of Rs. 81,420.56; the cost of processed turmeric then came to Rs. 98,970.59. The processed turmeric has fetched the higher price and its value was Rs. 1,49,760.00. After subtracting from this the value of raw output Rs. 1,08,692 the additional returns came to Rs. 41,067 over additional cost of processing of Rs. 17,549.98. The ratio of additional returns over additional cost was 2.34 and the overall output-input ratio on account of processing was 1.51.

Marketing of turmeric:

Marketing is a crux of production problems. Success of production of any crop enterprise depends up on its successful marketing. Turmeric is specialized crop grown in the Sangali district of Maharashtra. This section deals with the marketing of the farm level processed turmeric in Sangali market.

Marketing cost:

The data on per quintal cost of marketing of processed turmeric in Sangali market are presented in Table 5.

The data reported in Table 5 revealed that the per quintal total cost of marketing of processed turmeric in Sangali market was to the tune of Rs. 417.61. Commission charged by the agent was the major item of marketing cost and it alone shared 52.68 per cent of the total marketing cost. This has followed by the transportation of produce from production point to the market (24.56 per cent) and grading and packing (12.52 per cent).

Table 5 : Per quintal cost of marketing of turmeric

Sr. No.	Items of cost	Cost in Rs.	Per cent to total cost
1.	Grading and packaging	52.26	12.52
2.	Loading	10.10	2.42
3.	Transportation	102.55	24.56
4.	Unloading	10.10	2.42
5.	Market fee	12.30	2.94
6.	Hamali	5.15	1.23
7.	Weighing charges	5.15	1.23
8.	Commission charges	220.00	52.68
	Total	417.61	100.00

Table 4 : Cost and returns on account of turmeric processing (Fig. in Rs.)

Sr. No.	Particular	Per hectare	Per quintal
1.	Output (Wet *Rhizomes*) in qt.	112.32	--
2.	Value of output Rs.	108692.91	967.70
3.	Cost of cultivation/Production in Rs.	81420.56	724.89
4.	Cost of processing	17549.98	156.25
5.	Total cost Rs. (3+4)	98970.54	881.14
6.	Value of processed output in Rs.	149760.00	4000.00
7.	Quantity of processed output in qt.	37.44	--
8.	Additional returns over additional cost Rs. (6-2)	41067.09	3032.30
9.	Ratio of additional returns with additional cost (8÷4)	2.34	--
10.	Overall output - input ratio on processing (6÷5)	1.51	--

Price spread:

Price spread is a difference between the price paid by the consumer and the price received by the producer. This difference in nothing but a sum of the amount taken away by the intermediaries on account of their services and margins involved in the market. The data on price spread in the marketing of turmeric in Sangali market is reported in Table 6.

It is evident from the data reported in Table 6 that the average per quintal price paid by the consumer for processed turmeric was Rs. 4881.65 and the net price received by the consumer was Rs. 3582.39. Thus the producers share in consumers' rupee was 73.38 per cent. Major portion of the consumers' rupee *i.e.* 10.62 per cent was appropriated by the wholesalers on account of the services rendered by them and their margins in the marketing of turmeric. This has followed by the marketing cost incurred by the producers (8.56 per cent) and cost and margin of the retailers 7.44 per cent.

Table 6 : Price spread in marketing of turmeric

Sr. No.	Particulars	Value (Rs.)	Percentage to consumers' price
1.	Net price received by the producer	3582.39	73.38
2.	Marketing cost incurred by the producer	417.61	8.56
3.	Costs and margins of the wholesaler	518.32	10.62
4.	Cost and margins of the retailer	363.33	7.44
5.	Price paid by the consumer	4881.65	100.00

Conclusion:

The following conclusions can be drawn from the findings of the above study.

– The per hectare returns from the cultivation of turmeric were Rs.27272.25.

– On account of processing of turmeric the value addition have resulted in more added benefits.

The producers share in the price paid by the consumer was quite satisfactory and can be increased due to the non-perishable product of processed turmeric.

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