



ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2021; SP-10(8): 865-869
© 2021 TPI
www.thepharmajournal.com
Received: 07-06-2021
Accepted: 09-07-2021

Rashmi Jaiswal
Department of Agri-Business
and Rural Management, College
of Agriculture, IGKV, Raipur,
Chhattisgarh, India

Dr. MR Chandrakar
Department of Agricultural
Economics, College of
Agriculture, IGKV, Raipur,
Chhattisgarh, India

Dr. AK Gauraha
Department of Agri-Business
and Rural Management, College
of Agriculture, IGKV, Raipur,
Chhattisgarh, India

Yogesh Sahu
Department of Agri-Business
and Rural Management, College
of Agriculture, IGKV, Raipur,
Chhattisgarh, India

Teekendra Sahu
Department of Agri-Business
and Rural Management, College
of Agriculture, IGKV, Raipur,
Chhattisgarh, India

Corresponding Author
Rashmi Jaiswal
Department of Agri-Business
and Rural Management, College
of Agriculture, IGKV, Raipur,
Chhattisgarh, India

An economic analysis of production, processing and marketing of turmeric: A case study of Sambhav farmer producer organization, Raigarh district of Chhattisgarh

Rashmi Jaiswal, Dr. MR Chandrakar, Dr. AK Gauraha, Yogesh Sahu and Teekendra Sahu

Abstract

The present study was conducted in Raigarh district of Chhattisgarh, 40 farmers were selected under registered Sambhav, farmer producer organization (FPO) located at Raigarh district of Chhattisgarh. The primary data was collected in the cropping year 2020-21 from sampled households through personal interview method. The net income of turmeric was Rs 311343 per hectare. On an average yield of turmeric is 240.5 quintal per hectare. On an average the input-output ratio came to 1:3.72 on the sample farms. The average marketable surplus of turmeric from the total quantity produced was observed to be 105.62 quintal/farm(95.98 per cent). An average cost of processing per quintal of turmeric was calculated Rs. 2767 per quintal. Net profit from per quintal of processing is Rs 3333 and input output ratio came to 1:1.40 per quintal of turmeric.

Keywords: turmeric, net income, gross income, input-output ratio, marketable surplus, farmer producer organization, quantity, cost and profit

1. Introduction

India is the largest producer, consumer and exporter of turmeric in the world. Indian turmeric is considered to be the best in the world market because of its high curcumin content. India accounts for about 80 per cent of world turmeric production and 60 per cent of world exports. Chhattisgarh has produced 6.1 lakh metric ton of spices in the year 2013-14. Major Spices that are being produced are Chilly, Ginger and Turmeric. These three spices constitute around 78% of the total spices produced in Chhattisgarh. Raigarh and Surguja are the major producers of spices in the state followed by Korba and Bilaspur. The four districts constitute around 35% of total spices produced in the state.

Turmeric from Chhattisgarh accounted for over 126 million Indian rupees in the Indian economy in fiscal year 2018. This value was significantly higher than the previous year's contribution of turmeric from the state. Maharashtra was the largest contributor for turmeric to the agricultural gross value added among other states in the south Asian country, followed by Telangana

2. Material methodology

Sambhav, farmer producer organization (FPO) located at Raigarh district of Chhattisgarh has been selected purposely. The total number of farmer in Sambhav farmer producer organization is 40 which is located in Telipali village of Raigarh district.

The list of farmers cultivating turmeric, along with their cultivated area, was prepared. Based on the size of the farm, households were classified into 4 categories Marginal (less than 1 ha), Small (1 to 2 ha), Medium (2 to 4 ha), Large (Over 4 ha). A random sample of 40 farmers was drawn from Telipali villages, including the following number of farmers belonging to different categories.

The following number of farmers belonging to different categories.

Marginal farmer:	:	8(20%)
Small farmer:	:	12(30%)
Medium farmer	:	10 (25%)
Large farmer:	:	10 (25%)
Total		40(100.00 per cent)

2. Data collection

2.1.1 Primary Data: Primary information was obtained from selected farmers through private interviews using a pre-tested and well-structured schedule for research purposes.

2.1.2 Secondary data: Secondary data were obtained from various sources such as the District Statistical Office, Deputy Director of Agriculture, District Food Supply and Consumer Protection Office, Block Development Office.

2.2 Cost concept

2.2.1 Cost of cultivation

Cost Of Cultivation = Total Fixed Cost + Total Variable Cost

(A) Fixed cost

Fixed cost are those cost that do not vary with output and typical include rents, insurance, depreciation and set-up cost.

(B) Variable cost

Variable cost are the cost that do vary with output, it is also called direct costs. Example seed cost, fertilizer, plant protection cost etc.

2.2.2 Cost of production

Cost Of Production = Cost of Cultivation / Total Production

2.2.3 Profitability concept

(A) Gross income

Gross income defined as total value of main product.

Gross income = physical production price / quintal

(B) Net income: Net Income = Gross Income - Total Cost.

(C) Input – Output Ratio

Input - Output Ratio = Gross Income/Total Cost.

2.2.4 Marketing concept

Marketable surplus

Marketable surplus is the residual left with the farmer after meeting his requirement for family consumption, farm need for seed and feed for cattle.

MS= P-C

Where,

MS= Marketable surplus

P= Total production and

T= Total requirement

With the help of this ratio the management will be able to plane how much gross income required covering the cost and how the profitable is going to change with the production level. This can be used as a tool for future production, budget, pricing and profitability planning

3. Result and Discussion

3.1 Cost of cultivation of turmeric

The cost of cultivation is presented in table no. 1. It has been observed that on an average per hectare cost of cultivation of paddy was estimated as Rs.148926.46 which varied from table. Rs.137835.32 per hectare at marginal farm to Rs.146375.20 per hectare at small farms, Rs. 148103.84 at medium farms and 157683.842 per hectare at large farms respectively. The major share of cost on the cultivation of turmeric was observed as high labour charges which was average estimated 32.7 percent. The next major cost was observed as seed cost 22.79%

Table 1: Cost of cultivation of Turmeric

S. No	Particulars	Farm size				
		Marginal	Small	Medium	Large	Overall
1	Family labour	7000 (5.0)	6800 (4.6)	6450 (4.3)	6450 (4.0)	4795.3 (4.9)
2	Hired Labour charges	50500 (36.6)	54550 (37.2)	56500 (38.1)	58750 (37.25)	55277.5 (32.7)
3	Machine charges	5800 (4.2)	5900 (4.0)	6150 (4.1)	6400 (4.05)	6067.5 (3.6)
4	Seed cost	29640 (21.50)	33345 (22.7)	35568 (24.0)	35568 (22.5)	33715.5 (22.79)
5	Manures	6916 (5.01)	7410 (5.06)	9880 (6.6)	9880 (6.2)	8546.2 (5.7)
6	Fertilizer	6501 (4.7)	6501 (4.4)	7101 (4.7)	7101 (4.5)	6801 (4.6)
7	Plant protection k chemical and herbicide	395 (0.2)	450 (0.3)	500 (0.33)	550 (0.34)	476.5 (0.5)
8	Irrigation charges	5681 (4.1)	5928 (4.04)	6422 (4.3)	6916 (4.3)	6249.1 (4.5)
9	Interest on working Capital	3722 (2.7)	3618.36 (2.4)	3857.84 (2.6)	3948 (2.5)	3781.05 (3.5)
10	Total variable cost (A)	116155.32 (84.3)	124502.36 (84.04)	126036.84 (85.10)	135563 (85.97)	125981.41 (84.33)
	B. fixed cost					
11	Rental value of land	20000 (14.5)	20000 (13.6)	20000 (13.50)	20000 (12.68)	20000 (13.5)
12	Land revenue	12 (0.007)	12 (0.007)	12 (0.008)	12 (0.008)	12 (0.008)
13	Depreciation on	250	300	350	400	325

	Implements	(0.18)	(0.20)	(0.23)	(0.25)	(0.21)
14	Interest on fixed capital	1418 (1.0)	1561.84 (1.06)	1705.34 (1.15)	1708.84 (1.08)	1598.05 (1.08)
	Total fixed cost (B)	21680 (15.6)	21873.84 (14.94)	22067.34 (14.89)	22120.84 (14.02)	26322.44 (17.79)
	Total cost=(A+B)in ha	137835.32 (100)	146375.20 (100)	148103.84 (100)	157683.84 (100)	147926.46 (100)

Note: Figure in parentheses indicate percentage to total quantity produced

3.2 Processing Cost of Turmeric

The data revealed that the per quint total cost of processing is Rs 2767. The percentage of cost of machine labour is the

highest among the table i.e 52.04% followed by human labour i.e 17.3%

Table 2: Cost of handling operations and processing performed at farm level by farmers

S.no	Particular	Cost incurred	Cost incurred in %
1	Cleaning And Grading	34.41	1.2
2	Curing	330	1.1
3	Drying	35.84	1.29
4	Polishing	100	3.61
5	Storing	100	3.61
6	Packaging	35	1.2
7	Human Labour	480	17.3
8	Machine Labour	1440	52.04
9	Other Charges	50	1.8
10	Interest On Working Capital	104.8	3.7
11	Total variable cost (A)	2710.8	97.9
12	Depriciation charges	50	1.8
13	License fee	05	0.1
14	Interest on fixed capital	2.2	0.07
15	Total fixed cost (B)	57.2	2.06
16	Total cost(A+B)	2767	

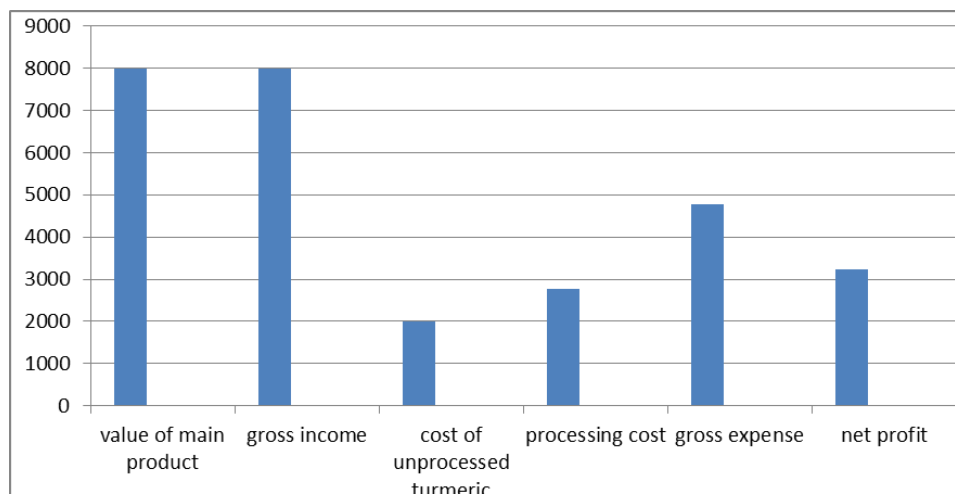
3.3 Profitability aspect of Turmeric cultivation

It was observed that the overall cost of cultivation was Rs. 147926.46 (Table 1) of sample unit. Table no. 2 shows that the average main product production was 1900 per quintal.

Processing cost is 2767 per quintal. The average gross income from table no.3 per quintal was Rs.8000 and the net profit was Rs. 3333 per quintal and the input-output ratio was 1:1.40.

Profitability Aspect of Turmeric Production (Rs/q)

S.no	Particular	Amount
1	Cost of unprocessed turmeric	1900
2	Processing cost	2767
3	Gross expense	4667
4	Value of the main product (20% of unprocessed turmeric)	8000
5	Gross income	8000
6	Net profit	3333
7	Input output ratio	1:1.40



Profitability aspect of turmeric

3.4 Marketable surplus of turmeric of sampled households(qt/farm)

It is observed that the overall average total quantity produce are 105.62 and 127.84 quintal per farm respectively. On an

average the marketable surplus of the turmeric crop is 105.62 quintal per farm. The marketable surplus of marginal, small, medium and large farmers are 39.81, 86.4, 149.5, 149.8 quintal per farm respectively.

Table 4: Marketable surplus of turmeric (qt/farm)

S.No	Particular	Marginal	Small	Medium	Large	Overall
1	Total produced Quantity	48.72 (100)	102.34 (100)	172.9 (100)	186.2 (100)	127.84 (100)
2	Quantity used for Home	1.50 (0.69)	3.25 (0.67)	4.25 (0.38)	5.67 (0.25)	3.66 (0.36)
3	Quantity used for Seed	7.41 (3.41)	12.35 (2.78)	18.25 (0.68)	30.85 (1.3)	17.21 (1.69)
4	Total quantity Utilized	8.91 (4.10)	15.6 (3.25)	22.50 (2.00)	36.52 (1.5)	20.88 (2.03)
5	Marketable Surplus	39.81 (92.1)	86.4 (93.41)	149.5 (95.99)	149.8 (96.89)	105.62 (95.98)

Note: Figure in parentheses indicate percentage to total quantity produced

4. Marketing of Turmeric

4.1 Disposal pattern

The FPO purchased the rhizome (raw) turmeric from the farmers at the rate of 1900 Rs per quintal and processed it in the form of powder turmeric. They make the packets of 100gram of turmeric powder and sell it to the consumers at the rate of 40Rs.under their own branding name SAMBHAV SHREE. The FPO purchased the whole marketable surplus from the farmers and make it loose powdered turmeric and packaged powdered turmeric as well as polishing the dried turmeric roots. They have their own retailing counter through which they directly sell their products to the consumers. The FPO performs the whole processing by their own, bearing all the processing charges. Maximum quantity products are being sell by their own retail counter.

5. Constrains and Suggestions

The most significant restrictions were stated to be the shortage of labour followed by unavailability of grinding machine due to which the cost of processing is reported very high. Constrains in marketing facing by the growers was major stated as high fee followed by lack of advertisement and limited market of their product.

To overcome the problem of high machinery charges, Govt. subsidies and funding should be done. This helps the farmers to cut the processing cost to some extent. They should more focus on advertising of their products so that people can be aware of their products. They should start selling their products into the local markets first. Once the marketing result is done with the better result, they should move to levelup markets.

6. Reference

- Angles S, Hosamani SB. Growth in area, production 2018. Horticultural Statistics at a Glance. Ministry of Agriculture 2002.
- Chinnadurai M *et al.* "Economics of Turmeric Cultivation in Erode District of Tamil Nadu." Agricultural Science Digest 2018;38(4):293-296.
- Chitney MP. Production and Marketing of Turmeric in Assam. International Education and Research Journal 2017;3(5):217-219.
- Damodaran K, Velayutham LK. An economic analysis of turmeric production in Guntur district of Andhra Pradesh. International Journal of Research in Economics & Social Sciences 2015;5:41-47
- Dhanalakshmi K, *et al.* "Production and Economics of Turmeric Cultivation." International Journal of Current Microbiology and Applied Sciences 2018;7(11):3496-3502
- Dodke SS, Kalamkar NV, Shende, Deoghare B. Economics of Production and Marketing of Turmeric. Ind. J Agril. Mrkt 2002;16(2).
- Govt. of India "Raigarh State". Imperial Gazetteer of India, 1909;21:45-47. Retrieved 19 February 2014
- Janailin S Papang, Tripathi AK. Costs and Returns Structure of Turmeric (*Curcuma longa* Linn.) and Constraints Faced by Producers in Jaintia Hills District of Meghalaya, India, Indian J Agric. Res 2013;48(3):192-198.
- Karthik V, Amarnath JS. An Economic analysis of Turmeric Production in Tamil Nadu, India, Direct Research Journal of Agriculture and Food Science 2014;2(6)
- Kiruthika N. The economics of production of turmeric in India: A case study of Erode district of Tamilnadu, Journal of Innovative Research and Solutions (JIRAS). 2013; 1(1):23-30.
- Kiruthika N. "The Economics of Production of Turmeric in India: A Case Study of Erode District of Tamil Nadu." Journal of Innovative Research and Solutions 2013;1(1):23-30.
- Lokesh GB, Chandrakant MG. Economics of Production, Marketing of Turmeric in Karnataka. Indian Journal of Agricultural Marketing 2004;18(2):32-44.
- Moghe SM, Zakiuddin KS, Arajpure VG. "Design and Development of Turmeric Polishing Machine", International Journal of Modern Engineering Research (IJMER), 2012;2(6):4710-4713, ISSN: 2249-6645
- Mane US, Changule RB, Kolekar PL, Gharge SH. An economic analysis of turmeric arrivals and price behaviour in Sangali district of Maharashtra. International Journal of Commerce and Business Management 2011;4(2):224-227.
- Patil PM, Chhaphkane NK. "Improving design and operation of steam based turmeric cooking process". International Journal of Engineering Research and Applications (IJERA) ISSN: 2248- 9622 www.ijera.com 2013;3(4):933-935.
- Patil PR. "Economics of Production and Marketing of Turmeric in Sangali District" un-published M. Sc. (Ag.) Thesis, Mahatma Phule Krishi Vidyaapeeth, Rahuri (M.S.) 2000.
- Patil PS. Turmeric Cultivation Technique in Sangali District. Un-published Thesis, Open University, Nashik. 2002.
- Pawar JR, Murlidharan MA. Future Marketing and Price Stabilization." A Case Study of Sangali Turmeric Market, Indian J. Agril. Mktg 1988;2(3):182-188.
- Sangliene DC, Chamuah HK. Problems and Prospects of

- Spices Production for Export in Meghalaya with Special Reference to Turmeric (Lankadong) and Ginger (Nadia), *Indian Spices* 1997, 51-53.
20. Senthil Kumar C, Dr. Manivannan L. An Analysis on Production and Marketing of Turmeric and Chilli in Erode District, *International Journal of Research in Computer Application & Management* 2011;1(5):88-90.
 21. Senthilkumar C. A Study On Spices Production And Marketing In Erode District, *Names International Journal of Management Research* 2011;1(1):11-17.
 22. Singh S, Gauraha AK. Business performance of Vandana self help group; A case study of koriya district of chattisgarh, *international journal of current and applied science* 2020;9(11):xx-xx