



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(10): 345-348
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www.thepharmajournal.com

Received: 27-08-2023

Accepted: 30-09-2023

Siya Ram

Department of Agri-business and Rural Management, College of Agriculture, Raipur, Chhattisgarh, India

Dr. MR Chandrakar

Department of Agricultural Economics, College of Agriculture, Raipur, Chhattisgarh, India

Narottam Atree

Department of Agricultural Economics, College of Agriculture, Raipur, Chhattisgarh, India

Dr. AK Gauraha

Department of Agri-business and Rural Management, College of Agriculture, Raipur, Chhattisgarh, India

Aman Kumar Gupta

Department of Agri-business and Rural Management, College of Agriculture, Raipur, Chhattisgarh, India

Virendra Kumar Choudhary

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

Corresponding Author:

Siya Ram

Department of Agri-business and Rural Management, College of Agriculture, Raipur, Chhattisgarh, India

Cost of processing and profitability structure of turmeric in Surguja district of Chhattisgarh

Siya Ram, Dr. MR Chandrakar, Narottam Atree, Dr. AK Gauraha, Aman Kumar Gupta and Virendra Kumar Choudhary

Abstract

The present study was conducted in the Surguja district of Chhattisgarh. A processor was selected to examine the economics of the processing of turmeric. Personal interviews were used to collect primary data from sampled households during the crop year 2022–23. According to the data, the total cost of processing per quintal is Rs 3479.77. Machine labour has the biggest percentage of cost (43.97 percent), followed by human labour (17.24 percent). That table depicts the factor-wise distribution of total cost per quintal. The profitability of turmeric processing was observed to be that the overall cost of processing was estimated to be Rs 6479.77 per quintal, with the processing cost being Rs 3479.77 per qtl. The price of unprocessed turmeric is Rs 3000.00 per quintal. The average income per quintal is Rs 11700.00, with a net profit of Rs 5220.23 per quintal. As a result, the input/output ratio is 1:1.81.

Keywords: Cost of processing, profitability aspects and input output ratio

Introduction

One of the first crops to be domesticated, turmeric (*Curcuma longa* L.), has been farmed in India for many centuries. Many people believe that turmeric, the primary spice powder used in Indian cuisine, is the herb with the greatest ability to prevent and maybe reverse disease. Despite being produced as an annual crop, turmeric is an upright perennial plant. Rarely does the leafy branch grow taller than one meter. The major tuber, which is located at the base of the aerial stem, bears rhizome, the economically valuable part known as the bulb and fingers. Turmeric is used in food preparation, cosmetics, and medicinal. It is a common ingredient in South Asian and Middle Eastern cuisine. It contributes to curry's distinctive yellow color and flavor. It's a food coloring found in cheese, butter, and other foodstuffs. Turmeric has been used in India from ancient times. It is used in the preparation of vegetables and hence ingested on a regular basis. It may be used to make dye, pharmaceuticals, and cosmetics. It holds special significance in Indian culture for performing pooja and other religious and marital rites. It is one of the significant spices that play a vital part in the national economy, as well as one of India's five primary spices. India holds the distinction of being the world's largest producer and exporter of turmeric (Patil *et al.*). Turmeric is a tropical perennial plant native to India and Indonesia that is grown across the tropics. It is regarded as the "Golden Spice of Life" and is one of the most significant spices used in cooking all over the world. It is a popular commercial spice in India. Indian turmeric is regarded as the greatest in the world (Thiripurasundari and hiripurasundari).

India is the world's top producer, user, and exporter of turmeric. Turmeric cultivation in India covered 3.24 lakh hectares in 2022-23, with a yield of 11.61 lakh metric tons (more than 75% of global turmeric production). Turmeric is cultivated in over thirty different varieties in India, and it is grown in more than 20 states Maharashtra, Telangana, Karnataka, and Tamil Nadu are the states that produce the most turmeric. India accounts for more than 62% of global turmeric commerce. More than 380 exporters shipped 1.534 lakh metric tons of turmeric and turmeric products valued at 207.45 million USD during 2022-23. Bangladesh, the United Arab Emirates, the United States, and Malaysia are the top export destinations for Indian turmeric. By 2030, it is anticipated that turmeric exports would exceed USD \$1 billion thanks to the Board's targeted actions. (The National Turmeric Board's formation is announced by the Indian government.) Turmeric production for the state of Chhattisgarh was estimated at 1.120 tons in 2023. Spices are produced using horticulture crops. Chhattisgarh produces turmeric. In comparison to the previous year's 1.303 tons, this is a drop.

The data for Chhattisgarh is updated once a year, with 12 observations and an average of 0.980 tons from March 2012 to 2023. A record high of 1.303 tons was recorded in 2022, and a record low of 0.770 tons was recorded in 2012. The Department of Agriculture and Farmers Welfare report the information, which is still current in CEIC.

2. Methodology

2.1 Processing cost

Processing cost includes the cleaning washing boiling drying, polishing, grinding, sieving charges, packaging weighing charges and storing charges etc. The cost actually paid by the selected growers for marketing of produce was considered and analyzed.

Processing cost = variable cost + fixed cost

Where,

Variable cost = packaging + drying +polishing +.....Cmn

Fixed cost = Variable cost + Depreciation charges + License fee + Interest on fixed capital

2.2 Profitability aspect

For the estimation of farm profitability the following

measures were used

Gross Income = Value of main product and by product.

Gross expenses = Cost of unprocessed turmeric + Processing

Net Income = Gross Income – Processing cost

Benefit Cost Ratio = Net Income/ Total cost.

3. Result and Discussion

3.1 Cost of handling operations and processing of turmeric (Rs./Qtl.)

The data revealed that per quintal total cost of processing is Rs 3479.77. The percentage of cost of machine labour is the highest among the (table 4.10 fig.4.22 and 4.23) i.e. 43.97% followed by human labour i.e. 17.24 percent. Cleaning and washing charges (1.02), Boiling / cooking charges (9.93), Drying charges (1.20), Polishing charges (3.34), Sieving charges (1.06), Packaging charges (1.50), Storage charges (3.73), Interest on working capital (3.55), And other fix cost just like Depreciation charge (6.60), License fees (0.57) and Interest on fixed capital (0.50). The factor-wise distribution of total cost per quintal is showing that table.

Table 1: Cost of handling operations and processing performed at farm level by processor s Rs./Qtl.

S. No.	Particular	Rs./Qtl.	Percentage
1	Cleaning and washing charges	35.64	(1.02)
2	Boiling / cooking charges	345.45	(9.93)
3	Drying charges	41.72	(1.20)
4	Polishing charges	116.32	(3.34)
5	Grinding charges	121.53	(3.49)
6	Sieving charges	36.77	(1.06)
7	Packaging charges	52.18	(1.50)
8	Storage charges	129.63	(3.73)
9	Human labour	600.00	(17.24)
10	Machinery cost	1530.00	(43.97)
11	Other	80.00	(2.30)
12	Interest on working capital	123.57	(3.55)
	Total variable cost	3212.81	(92.33)
13	Depreciation charge	229.50	(6.60)
14	License fees	20.00	(0.57)
15	Interest on fixed capital	17.47	(0.50)
	Total fixed capital	266.97	(7.67)
	Total cost (WC+FC)	3479.77	(100.00)

Note: Figures in the parenthesis indicate percentage of total processing cost.

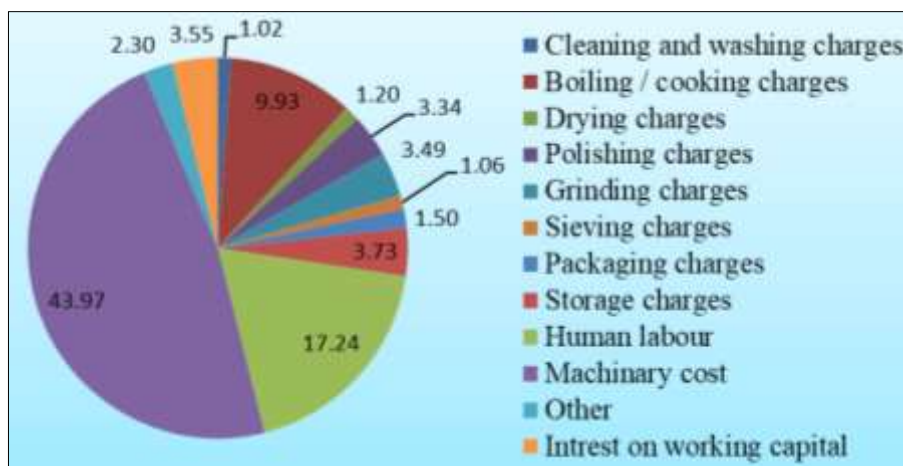


Fig 1: Figures in the parenthesis indicate the percentages to the total variable processing cost

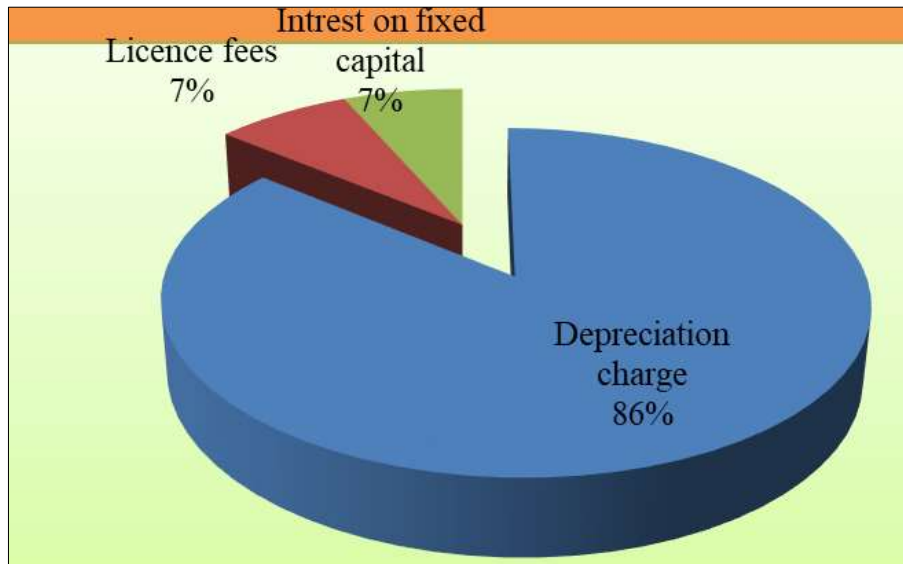


Fig 2: Figures in the parenthesis indicate the percentages to the total fix processing cost

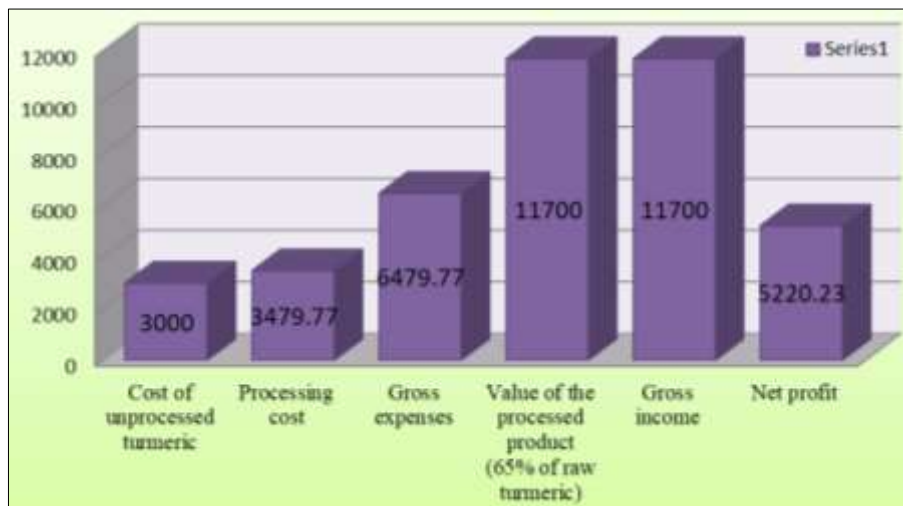


Fig 3: Profitability aspect of turmeric processing at sample unit (Rs./Qtl.)

3.2 Profitability aspect of turmeric processing

The profitability aspect of turmeric processing show the table 4. 11 and fig.4.24 It was observed that the overall cost of processing was gross expenses is estimated Rs 6479.77 per quintal in which the processing cost is Rs 3479.77 per qtl. Followed by the cost of unprocessed turmeric i.e. Rs 3000.00 per quintal. The average income is noted Rs 11700.00 per quintal and net profit of Rs 5220.23per quintal. So the input output ratio is 1:1.81 respectively.

Table 2: Profitability aspect of turmeric processing at sample actors (Rs./Qtl.)

S. No.	Particular	Amount
1	Cost of unprocessed turmeric	3000.00
2	Processing cost	3479.77
3	Gross expenses	6479.77
4	Value of the processed product (65% of raw turmeric) (Price of processed turmeric Rs. 180/kg)	11700.00
5	Gross income	11700.00
6	Net profit	5220.23
7	Cost (Rs./kg)	99.69
	Input – output ratio	1:1.81

Note: Figures in the parenthesis indicate net profit and input output ratio

4. Conclusion and Suggestion

Turmeric is one of the most indispensable spices and is used as an important ingredient in culinary all over the world, but its processing involves a lot of problems. Before turmeric can be used, the turmeric rhizomes must be processed rhizome are boiled and steam to remove the row odor, gelatinize the starch, and produce a more uniformly colored product. Turmeric is a common spice and a major ingredient in curry powder. Curcumin is a major component of turmeric, and the activities of turmeric are commonly attributed to curcuminoids (curcumin and closely related substances). Curcumin gives turmeric its yellow color. Processing of turmeric is a big problem, which we cannot use without processing. Therefore, it is very important to process turmeric and preserve should be maintained the ingredients and curcumin found in it. So through this research we have come to the conclusion that the biggest expense comes in machinery 1530 (43.97 percent) and labour 600 (17.24 percent) per qt/ cost for processing of turmeric. For this process, one has to go through different stages which are explained in table no 1 and indicate the fig. no.1. Whereas profitability aspect of turmeric processing total gross expenses Rs. 6479.77 and value of the processed product (65% of raw turmeric) and total gross income Rs. 11700.00. In which only Rs 5220.23

net income was come out whose input output ratio came to 1:1.81 respectively. For its future scope and suggestion, first of all the machinery and processing units should be cheap and durable and should be available in every growing area, as well as there should be skilled labor and technical knowledge so that the right work can be done at the right time, where it can be done cheaply. More profitable work can be done.

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