



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2017; SP1: 206-209

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An Economic Analysis of Production and Marketing of Aromatic Rice in Balrampur District of Chhattisgarh

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Abstract

The present study is based on an economic analysis of production and marketing of aromatic rice with the following objectives: To work out the cost and returns of aromatic rice in the study area. To find out the marketing pattern of aromatic rice in the study area. The present study was conducted in Balrampur district of northern hills of Chhattisgarh. Out of six blocks of the district, three blocks, namely Balrampur, Shankargarh, and Kusmi were selected randomly for the study. A sample of one hundred fifty farmers were selected for the study. The primary data from the farmers has been collected through personal interview method with the help of well designed schedule for the year 2014-15. The canal was observed as a major source of irrigation. The average cropping intensity was observed 137.24 percent. The average size of holding of aromatic rice growers was 2.25 hectares. On an average the cost of cultivation per hectare of Jeeraphool variety of aromatic rice was calculated at Rs.35236.04. Among different cost items contribution of total labour cost was 54.85 percent to the total cost in case of Jeeraphool variety of aromatic rice. Gross income for Jeeraphool variety was found to be Rs.64089.20. On an average input-output ratio of aromatic rice varieties i.e., Jeeraphool came to 1:1.81. On an average marketable surplus in Jeeraphool variety was worked out to 73.21 percent. On an average the disposable pattern of the sampled households were found that in case of Jeeraphool 49.86 percent of the sampled households sold their produce to retailers followed by co-operative society i.e., 37.79 percent. Study also suggested that the establishment of farmer's cooperative society or sale society will not only solve money problems of small and medium farmers but also reduces the role of commission agents in the production and marketing of aromatic rice in the state and some specific minimum support price should be declared for aromatic rice to ensure benefit for the producers and also to maintain the precious biodiversity of aromatic rice in the Chhattisgarh state.

Keywords: Major Aromatic rice, jeeraphool, production and marketing.

Introduction

Rice is one of the important cereal crops of the world and forms the staple food for more than 50 per cent of population and is known as king of cereals. In world, rice has occupied an area of 160.60 million hectares, with a total production of 738.20 million tones and productivity 3424.41 kg/ha. India is the second largest producer of rice after China. India has production of 105.48 million tones with productivity 3020 kg/ha.

Aromatic rice is one of the major types of rice. It is a medium- to long-grained rice. It is known for its nut-like aroma and taste. Aroma quality of scented rice is a major character which increases the value of rice in international market. The demand for special purpose aromatic rice has dramatically increased over the past two decades. India emerges as one of the major exporter of rice in international market.

In Chhattisgarh, rice is grown in 3.64 million hectares with production of 7.65 million tones and productivity 1517 kg/ha. Chhattisgarh has a sizeable area under various varieties of aromatic rice i.e., Jeeraphool, Kapoorbhog Vishnubhog, Dubraj, Tulsimanjari, Badshahbhog, Madhuri, Chini-kapoor, Siyaram, Jawaphool, etc. These varieties are grown by the farmers in different agro climatic zones of Chhattisgarh state.

Material and methods

The present study was undertaken in Balrampur district of Chhattisgarh out of six blocks of Balrampur, three blocks namely Balrampur, Shankargarh and Kusmi were selected for the study. One hundred fifty farmers were selected randomly from three blocks and 50 farmers were selected from each block. The primary data were collected for the year 2014-15, which were related to cost and return of major aromatic rice. Information was collected from the respondents using well designed schedule. To work out the cost of cultivation, cost and returns, measures of farm profit of aromatic rice.

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Standard method of cost of cultivation has been adopted for analyzed the data. To calculate marketable and disposable pattern of aromatic rice following formula has been adopted.

Marketable surplus

It is the quantity of produce, which is left into the hands of farmers after curtailing family requirements, quantity stored for seed, and quantity used for wage payment is the marketable surplus, it is computed by use of following mathematical model:

$$MS = P - (C + W + S)$$

Where,

MS = Marketable surplus

P = Total production

C = Family consumption

W = Quantity used for wage payment

S = Quantity kept for seed

Disposal pattern

To examine the marketing pattern of major aromatic rice at different categories of farms, simple analysis was done. To estimate the marketable surplus of produce, total quantity used for different purposes is deducted from total production of crop.

$$MS = P - (C + W + C_f)$$

Where,

MS = Marketable Surplus

P = Total Production

C = Family Consumption

W = Quantity use for Wage

C_f = Quantity used for cattle feed.

Results and discussion

Demographical features of the sampled households

The demographic characteristics of the sampled farmers in the study area are described in table. It can be seen from the table 1 that the female population was seen slightly higher than male being 50.34 percent and in case of male it was 49.66 percent. The average family size was found highest in large farms i.e.7.65 and lowest in marginal farms i.e.6.03 per cent.

Literacy among the family member of sample households was observed to be higher in small farmers 77.44 per cent. Over all literacy was observed to be 76.04 per cent among the sample households. The scheduled tribe, other backward caste and general shared 87.33 per cent, 4.67 percent and 8 per cent to the total population of sample household of the study area respectively.

Table 1: Demographical features of the sampled households

S. No.	Particulars	Marginal	Small	Medium	Large	Total
1.	Total no. of households	30	40	40	40	150
2.	Total family member	181 (100)	266 (100)	278 (100)	306 (100)	1031 (100)
	a. Male	82 (45.30)	139 (52.26)	135 (48.56)	156 (50.98)	512 (49.66)
	b. Female	99 (54.70)	127 (47.74)	143 (51.44)	150 (49.02)	519 (50.34)
3.	Average family member	6.03	6.65	6.95	7.65	6.87
4.	Education					
	a. Literacy percentage	72.93	77.44	75.90	76.80	76.04
5.	Social group					
	a. Scheduled Tribes	24 (80.00)	38 (95.00)	36 (90.00)	33 (82.50)	131 (87.33)
	b. Other Backward Castes	2 (6.67)	-	1 (2.50)	4 (10.00)	7 (4.67)
	c. General	4 (13.33)	2 (5.00)	3 (7.50)	3 (7.50)	12 (8.00)

Note: Figures in the parenthesis indicate the percentages to total number of households and total number of family.

Operation wise cost of cultivation of Jeeraphool

Operation wise cost of cultivation of Jeeraphool has been presented in table 2. It gives an overview of cost wise percentage share in different operations of Jeeraphool cultivation. It includes cost incurred in material, human labour, machine labour, bullock labour etc.

No operation was found costlier than manure and fertilizer of crop pointing out to be 18.15 per cent to the total cost of

cultivation. Rental value of land was found second most expensive operation with the percentage share of 17.03 to the total cost of cultivation and transplanting was found third most expensive operation with the percentage share of 12.86. Total operational cost was showing increasing trend from marginal to large farms; it is due to higher availability of factors of production. Percentage share of fixed cost was found 18.00 per cent to the total cost of cultivation.

Table 2: Operational wise cost of cultivation of jeeraphool (Rs/ha.)

S. No.	Particulars	Marginal	Small	Medium	Large	Overall
(A)	Variable cost					
1.	Field Preparation	3423.9 (10.15)	3807.7 (11.02)	4047.9 (11.53)	4500 (12.10)	3979.60 (11.29)
2.	Manure & Fertilizer	6349.98 (18.82)	6387.47 (18.49)	6406.7 (18.25)	6428.9 (17.29)	6396.14 (18.15)
3.	Seed & Sowing	2073.69 (6.15)	2053.07 (5.94)	2014.64 (5.74)	2035.15 (5.47)	2042.16 (5.80)
4.	Interculture	1715.21 (5.08)	2000 (5.79)	2025.53 (5.76)	2250 (6.05)	2016.51 (5.72)
5.	Transplanting	4408.69 (13.07)	4488.46 (12.99)	4505.31 (12.83)	4691.4 (12.62)	4531.11 (12.86)
6.	Irrigation	500.54 (1.48)	441.97 (1.28)	399.28 (1.14)	558.58 (1.51)	473.39 (1.34)
7.	Plant Protection	1811.94 (5.37)	1728.83 (5.01)	1748.57 (4.98)	1778.9 (4.78)	1764.06 (5.01)
8.	Harvesting	2628.26 (7.79)	2669.87 (7.73)	2739.36 (7.80)	3265.62 (8.78)	2838.94 (8.06)
9.	Threshing & Winnowing	1923.91 (5.70)	1990.38 (5.77)	2175.53 (6.20)	2250 (6.05)	2095.69 (5.95)
10.	Transportation	1532.6 (4.55)	1560.89 (4.52)	1588.65 (4.53)	1869.79 (5.03)	1645 (4.67)

11.	Interest on working capital	1054.74 (3.13)	1085.14 (3.14)	1106.05 (3.15)	1185.13 (3.19)	1111.30 (3.15)
	Total cost	27423.46 (81.29)	28213.78 (81.68)	28757.52 (81.91)	30813.47 (82.87)	28893.94 (82.00)
(B)	Fixed cost					
1.	Land revenue	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)	10 (0.03)
2.	Rental value of land	6000 (17.79)	6000 (17.37)	6000 (17.09)	6000 (16.14)	6000 (17.03)
3.	Interest on fixed capital	300.5 (0.89)	320 (0.92)	340 (0.97)	360 (0.96)	332.1 (0.94)
	Sub total	6310.5 (18.71)	6330 (18.32)	6350 (18.09)	6370 (17.13)	6342.1 (18.00)
(C)	Total cost (A+B)	33733.96 (100)	34543.78 (100)	35107.52 (100)	37183.47 (100)	35236.04 (100)

Note: Figures in the parenthesis indicate the percentages to the total cost.

Measures of farm profit of Jeeraphool variety

It is quite evident from table 3 that, on an average, the value of net income, family labour income, farm business income and farm investment income per hectare came to Rs.28853.13, Rs.33574.15, Rs.39906.25 and Rs.33585.23 respectively from

Jeeraphool. Gross income of the farms by main product and by product together was found to be Rs.64089.20 per hectare. The overall input output ratio was found to 1:1.81 in Jeeraphool cultivation.

Table 3: Measures of farm profit by different category of farm of Jeeraphool variety

S. No.	Particulars	Marginal		Small		Medium		Large		Overall	
(1)	Gross income	54738		60213		68221		70847		64089.2	
	Yield of main product	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value	Qt	Total value
		20	50000	22.05	55125	25.07	62675	26.11	65275	23.52	58820
	Yield of by product	23.69	4738	25.44	5088	27.73	5546	27.86	5572	26.34	5269.2
(2)	Net income	21004.04		25669.22		33113.48		33663.53		28853.13	
(3)	Family labour income	27081.2		30951.22		37491.92		37149.04		33574.15	
(4)	Farm business income	33381.7		37271.22		43831.92		43509.04		39906.25	
(5)	Farm investment income	27304.54		31989.22		33453.48		40023.53		33585.23	
(6)	Input output ratio	1:1.62		1:1.74		1:1.94		1:1.91		1:1.81	

Marketable surplus of major aromatic rice

Marketable surplus of major aromatic rice is presented in table 4 with marginal, small, medium, large farmers was 47.5,

58.60, 73.48, 82.69 per cent for Jeeraphool. Overall marketable surplus for Jeeraphool was 73.21 percent.

Table 4: Marketable surplus of Jeeraphool of sampled household. (per farm)

Farm size						
S. No.	Particulars	Marginal	Small	Medium	Large	Overall
(A)	Total production	6 (100)	8.60 (100)	17.80 (100)	25.07 (100)	14.93 (100)
(B)	Consumption -					
1.	Home consumption	2.97 (49.5)	3.32 (38.60)	4.30 (24.16)	3.74 (14.92)	3.62 (24.25)
2.	Seed retained	0.18 (3)	0.24 (2.79)	0.42 (2.36)	0.60 (2.39)	0.37 (2.48)
	Total consumption	3.15 (52.5)	3.56 (41.40)	4.72 (26.52)	4.34 (17.31)	4.00 (26.79)
(C)	Marketable surplus	2.85 (47.5)	5.04 (58.60)	13.08 (73.48)	20.73 (82.69)	10.93 (73.21)

Note: Figures in parentheses indicate percentages to total quantity produced

Disposable pattern of major aromatic rice

Disposable pattern of major aromatic rice is presented in table 5. Overall disposable pattern for jeeraphool was 49.86 per cent

to retailer, 37.79 per cent to co-operative society and 12.35 per cent to consumer. Maximum produce was sold to retailer in case of Jeeraphool.

Table 5: Disposable pattern of Jeeraphool of sampled household (qt/farm)

Farm size						
S. No.	Particulars	Marginal	Small	Medium	Large	Overall
(A)	Marketable surplus	2.85 (100)	5.04 (100)	13.08 (100)	20.73 (100)	10.93 (100)
1.	Consumer	0.47 (16.49)	0.65 (12.90)	1.45 (11.09)	2.63 (12.69)	1.35 (12.35)
2.	Co-operative society	0.93 (32.63)	1.36 (26.98)	5.56 (42.51)	7.86 (37.91)	4.13 (37.79)
3.	Retailer	1.45 (50.88)	3.03 (60.12)	6.07 (46.40)	10.24 (49.40)	5.45 (49.86)

Note: Figures in parentheses indicate percentages to total quantity produced

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