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Profitability in Cultivation of Chick Pea Production in Central Narmada Valley of Madhya Pradesh

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Abstract—*In India chick pea is being grown in 7.49m. Ha and production is 6.33m. Tones. Chick pea is major pulses crop in the state of Madhya Pradesh which occur the area 3043.4 thousand ha and the production is 3290.3 thousand tones. In this study, an effort has been made to examine the profitability in cultivation of chick pea at different size of farms in chick pea producing Narmadapuram division of Central Narmada Valley agro-climatic zone of Madhya Pradesh which is selected purposively having maximum area under cultivation of chick pea in the state. The sampling unit comprised of randomly selected 216 farm holdings (72 small, 72 medium and 72 large). The required primary data related to agricultural year 2012-13 were collected through survey method using pre-tested interview schedule. It was observed from the analyzed data that the total cost of cultivation was maximum on large (Rs. 22549.2/ ha) as compared to medium (Rs. 20952.5/ha) and small (Rs.20211.7) size of farms revealing that chick pea production involves high expenditure on purchased inputs viz. seed, fertilizers, insecticides and hired mechanical power. The maximum gross income was found on small (Rs. 53869.4/ha) followed by medium (Rs. 53517.6/ha) and large (Rs. 53701.3/ha) size of farmers. As far as the cost benefit ratio is concerned, it was found to be maximum on small (1:2.7), followed by medium (1:2.6) and large (1:2.4) size of farmers.*

Keywords*: chick pea, profitability.*

1. INTRODUCTION

Gram (C*ecer aritinum*) commonly known as 'chick pea' of Bengal gram is the most important pulse crop of India. India alone has nearly 75% of the world acreage and production gram. Chick pea occupies about 37% of area under pulses and contributes about 50% of the total pulse production of India. Chick pea considered 21.1% protein, 61.5% carbohydrate, 4.5% fat. It is also rich in calcium, iron and niacin. In India chick pea is being grown in 7.49m. Ha and production is 6.33m. Tones. Chick pea is major pulses crop in the state of Madhya Pradesh which occur the area 3043.4 thousand ha and the production is 3290.3 thousand tones. In Hoshangabad division rabi season of chick pea the second most important crop covering an area of 88.2 thousand ha. And the production is 140.6 thousand tones (year 2012). In the wake of technological advancements and WTO obligations in agriculture, the endeavors' are to increase productivity, profitability, adoptability, stability, sustainability and competitiveness of increase of the farm business. Chick pea, being the major commercial crop in farm business of the state with high-marketed surplus, need made to examine the profitability in production of chick pea at different scales of operation. The results of the study can fruitfully be used for diagnosis of the problem and providing suggestive measures for reducing production cost and increasing profitability for chick pea.

2. MATERIAL AND METHODS

The present study is confined to Central Narmada Valley agro-climatic zone of Madhya Pradesh, which was selected purposively looking to the major revolutions that took place in chick pea production in this plateau. Out of three district (Hoshangabad, Harda, Betul), Hoshangabada, Harda was selected randomly for the study as it accounts for maximum area under chick pea in the plateau. Out of eleven Blocks (Hardakhurd, Handiya, Timarni, Khirakiya, Vankhedi, Dolwa, ltarsi, Kesla, Pioariya, Seonimalwa, Babai,) in the districts, Hardakhurd, Timarni,Khirakiya Pipariya,Seonimalwa, Babai) , was selected randomly on the basis of same criteria. From the list of the entire village along with total number of operational holding and area under chick pea, 24 top most chick pea growing villages were selected for the study. Ten per cent of the chick pea growers listed was selected randomly from each land holding size groups. Thus, the sampling unit comprised of 216 chick pea growers (72small, 72 medium and 72 large). The cost of cultivation, cost of production, net profit, and cost-benefit ratio were worked out using standard cost and profitability concepts. The data was collected from the respondents for the agricultural year 2012-13 through survey method using per-tested interview schedule.

3. RESULTS AND DISCUSSION

3.1 Cost of cultivation

On as average, growers spend Rs. 9799.8 per hectare on the operational inputs (cost A $_1$) in the cultivation of chick pea (Table1). Cost cultivation was highest on large on (Rs. 22549.2/ha) followed by medium (20952.5/ha) and small (Rs. 20211.7/ha) size of farm, revealing that it increased with increase in size of holding (Table 1). This implies that medium and large farmers due to their strong resource base and purchasing power use more inputs especially seed of improved variety as compared to the small ones. Cost A_1 and A_2 are identical on all the farm sizes since none of the famer lease in the land for chick pea cultivation. Cost B_1, was Rs. 7776.8, Rs. 8820.2 and Rs. 10789.2 per hectare, respectively on small, medium and large size of farms and at aggregate level; it was Rs. 10099.6 per hectare. Similarly Cost B_2 was Rs. 16725.7, Rs. 17710.3 and Rs.19709.8 per hectare, respectively on small, medium and large size of farms. Cost C_1 was Rs. found to be highest (Rs. 11578.6/ha) on large as compared to medium (Rs. 10157.7/ha) and small (Rs. 9425.5/ha) size of farms. Cost C_2 was Rs. 18374.3, Rs. 19047.8 and Rs. 20499.3 per hectare on small, medium and large size of farms, respectively. Cost C_3 (overall total cost) was Rs.20211.7, Rs.20952.5, and Rs. 22549.2and Rs. 22301.7 per hectare, respectively for small, medium, large and at aggregate level (Table 1). This indicated that chick pea production is capital intensive as compared to other Kharif crops like maize, sorghum ect. The trend of increasing cost with the increase in size of holding reflected towards the capacity of chick pea growers to invest more on technological inputs with the increase in size of farms and thus, the general trend of large scale economics does not stand true in case of chick pea production. The cost of production also revealed a similar trend indicating that the cost incurred on purchase inputs did not reflect in gross income of soybean on different size of holdings. This may be due to managerial problems, quality aspects of inputs, and other soil health and biotic factors which need to be examined in- depth.

Table 1: Details of cost concepts (Rs/ha) of chickpea on different size of farms.

Particulars	Small (72)	Medium (72)	Large (72)	Overall (180)
	7477.0	8522.1	10490.3	9799.8
Cost A1	(37.0)	(40.7)	(46.5)	(43.9)
Cost A2: Cost A1 + Rent paid for leased in land	7477.0	8522.2	10490.3	9799.8
Cost B1: CostA1 + interest on fixed capital	7776.8	8820.2	10789.2	10099.6
Cost B2: Cost B1+ Rental value of owned land	16725.7	17710.3	19709.8	19015.2
Cost C1: cost B1 + Imputed value of family labour	9425.5	10157.7	11578.6	11358.6
Cost C2: Cost B2 + Imputed value of family labour	18374.3	19047.8	20499.3	20274.2
Cost C3 : Cost C2 + 10% cost as managerial cost	20211.7	20952.5	22549.2	22301.7

3.2 Profitability

On an average gross income of Rs. 53670.5 per hectare was obtained from cultivation of chick pea in the study area. The gross income was found to be maximum on small (Rs. 53869.4/ha) followed by large (Rs.53701.3/ha) and medium (Rs.53517.6/ha) size of farms which follows the productivity trend since the sale price of chick pea is more or less identical irrespective of size of holding. This also reflected towards tendency of sale of produce just after harvesting due to poor holding capacity of the farmers and shortage of storage facilities. The maximum farm investment income was Rs. 46392.4 per hectare on small followed by medium (Rs. 44995.5/ha) and large (Rs. 43211.0/ha) size of farms. Higher family labour income was noted on small (Rs.37143.8/ha) as compared to medium (Rs. 35807.4/ha) and large (Rs.33991.4/ha) size of farms revealing that the use of family labour was higher of these farms Due to small holdings, the family labour were employed to other off farm activity In case occupations or for pursuing higher education in urban areas. The maximum net income from cultivation of chick pea was found to be more on small (Rs.33657.7/ha) followed by medium (Rs.32565.1/ha)and large (Rs.31152.1/ha) size of farms, although the differences were insignificant. The maximum cost-benefit ratio was observed on small (1:2.7) followed by medium (1:2.6) and large (1:2.4) size of farms. At aggregate level it was 1:2.4 (Table 2) in the study area revealing that chick pea production is cost effective even on consideration of operational and fixed cost.

Table 2: Profitability (Rs/ha) of chickpea crop at different size of farms.

Economic Parameter	Small (72)	Medium (72)	Large (72)	Overall (180)
Yield (a1) Main product qlt/ha	17.0	16.9	16.9	16.9
(a2) Value of Main Product	53693.1	53340.3	53523.9	53493.5
(b1) By product qlt/ha	12.7	12.3	12.5	12.5
(b2) Value of By product	176.4	177.4	177.3	176.9
Gross Income	53869.4	53517.6	53701.3	53670.5
Net Income	33657.7	32565.1	31152.1	31368.8
Farm business Income	46392.4	44995.5	43211.0	43870.6
Cost of production Rs./qlt.	1188.9	1239.6	1334.2	1317.2
Input-Output Ratio	2.7	2.6	2.4	2.5

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