Cost and Returns of Safflower in Marathwada Region of Maharashtra

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Abstract

The oilseeds have been the backbone of Agricultural economy of India from the time immemorial. The oilseed crops are chief source of oils and fats which form the valuable ingredient's in human diet and industry as well. It covers ten per cent of the total cropped area and 8 per cent of the production of food in the country. Oil seed are mainly used for extraction of edible oil; edible oils are the chief source of fats and proteins: fatty acid provides 2.5 times more calories than carbohydrates. In the human body, fats and oil act as a transport medium for vitamins A, D, E and K.

Safflower (*Carthamus Tintorium .L.*)' grown in India for multipurpose that is oil seed as well as crop. About 120 safflower growers were selected from two districts (Osmanabad and Hingoli) in Marathwada region of Maharashtra for study. Cross sectional data were collected from safflower growers with the help of pretested schedule by personal interview method. The data pertains for the year of 2016-17. The cost concepts of Cost-A, Cost-B and Cost-C were used to analyse the data. The study revealed that by using the mentioned physical inputs the main produce (grain) was occurred about 12.37 quintals and by-Produce (straw) was 1.08 quintals. It was observed that per hectare Cost-C of safflower was Rs. 28541.51 which the share of Cost-B was 86.80 per cent followed by Cost-A was 62.67 per cent. Per hectare gross return of safflower was Rs. 38122.15 and net profit was Rs. 9580.64 Output-input ratio of safflower was 1.34.

Keywords: Safflower, Analysis, Economic, Cost, Returns, Profitability.

Introduction

Safflower belongs to family Asteraceae. It is one of the important oilseed crops and occupies second position among the major oilseed crops *viz.*, groundnut, safflower, sesamum, mustard, linseed and sunflower grown in India. It is an important crop from the point of its economic importance due to high oil (24-36 per cent) and mineral value for human and cattle. So it plays a vital role in the state and national economy. In India, safflower as an oilseed crop introduced in 1970-71 onwards. It is one of the fastest growing and short durational crops in India. Oilseeds are an important segment of Indian Agricultural economy as they contribute one tenth total output of crop sector in the country. India is fortunate in having a wide range of oilseed crops grown in its different agro climatic zones. India is third largest producer of oilseeds in the world. The oilseed crops grown by adopting new technology in India are Groundnut, safflower, sunflower, mustered, linseed, castor etc.

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Materials and Methods

Multistage sampling design will be adopted in selection of district, tehsil, villages and safflower growers. At first stage, two districts namely Osmanabad and Hingoli were purposely selected from Marathwada region. In second stage, from each district two tehsils was selected on the basis of highest area under safflower cultivation. In third stage, list of predominant villages with respect to area under safflower were obtained from selected tehsils. From each of the tehsil, three villages were selected purposely. In Osmanabad district the selected villages from Umaraga tehsil were namely Murum, Kothali and Tugaon from Lohara tehsil were Makhani, Chincholi and Ashata .In Hingoli district the selected villages from Hingoli tehsil were namely Devulgaon rama Atharwadi and Lohgaon From Aundha Nagnath tehsil the selected villages were Borja, Pimpala and Dughala.

In the fourth stage, from the list of safflower growers, ten Safflower growers were randomly selected from each village. In this way, from two districts, one hundred twenty safflower growers were selected for the present study. The data was collected from cultivars with the help of

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Periodic Research

pretested schedule through personal interview method. The data pertains for the year 2015-16. In analytical techniques, that is to study the input use, cost structure and profitability of safflower was achieved by tabular analysis, cost concept viz., of cost-A, cost-B, cost-C.

Review of Literature

Tawale and Pawar (2011) studied cost, returns and profitability of soybean production in Maharashtra. Soybean [Glycine max (L.) Merill.] is known as golden bean in India. Soybean is grown successfully in various agro-climatic conditions. Soybean is one of the important oilseed crops of the Latur district in Maharashtra. For present study multistage sampling design was used in selection of district, tehsils, villages and soybean growers. On the basis of high area under soybean crop Latur and Renapur tehsils were selected. From selected two tehsils 12 villages were selected purposely on the basis of highest area under soybean crop. In this way, 180 soybean growers were selected for the present study. The information collected with respect to expenditures and returns were analysed in tabular form by using cost concepts like cost - A, cost - B and cost - C. Data pertained to the year 2007-08. The result revealed that, cost-C was Rs.25883.57 in which share of cost-B was 86.64 per cent while that of cost-A was 66.40 per cent. Gross return was found to be Rs.29748.52 and net profit was Rs.3864. The output input ratio was 1.15.

Mane *et al.* (2014) studied Costs, returns and profitability of summer groundnut in Hingoli district of Maharashtra. The return from main produce of TAG-24 was Rs. 130174.33 followed by Rs. 89384.46 from SB-11 groundnut. The return from by produce was highest as Rs. 9928.29 from SB-11 followed by Rs. 7237.50 from TAG-24.Cost- C was highest as Rs 84818.47 for TAG-24 followed that of Rs. 83123.46 for SB-11. The share of rental value of land was 26.95 per cent for TAG-24 and that of 19.86 per cent for SB-11 groundnut. Among the various items of expenditure, share of expenditure for TAG-24 groundnut on irrigation was 22.10 per cent followed by hired human labour (20.22 %), seed (13.01 %) and family human labour (4.50 %). In case of SB-11 groundnut, the share of hired human labour was (17.99 %) followed by seed (12.74 %) and family human labour (8.21 %)

Holmgren *et al.* (2015) studied cost and returns for non-irrigated safflower, North Utah. A percentage total sale that is not consumed by variable costs. For example, a contribution margin ratio of 22 per cent means that for each dollar increase in sales, total contribution margin will increase by22.2 cents. A ratio of profitability calculated as net income per acre divided by total sales per acre. The net income or profit ratio is very useful in determining profitability and is displayed as a percentage. For example, a profit margin of 11 per cent means the farm has a net income of 11 cents for every dollar of sales.

Bikkad *et.al.*(2016) made an attempt to study economics of production of black gram in Nagpur district. The study revealed that per hectare yield obtained by all farmers was 11.42 quintals from main produce. The per hectare cost of cultivation of black gram for small farmers highest at cost A, cost B and cost C were Rs.15937.28,Rs.23502.97 and Rs.28454.74 respectively. The per hectare cost of cultivation of black gram of medium farmer at cost A, cost B and cost C were Rs.18526.41,Rs.26547.19 and Rs.29398.12 respectively. The per hectare cost of cultivation of black gram of large farmer at cost A, cost B and cost C were Rs.20752.71,Rs.30306.63 and Rs.31935.05 respectively. In production process cost C was found to be Rs.30149.84 per hectare. The major share of cost of cultivation goes towards cost A (61.08 per cent), while cost B contributes to 89.38 per cent. The net profit was Rs.15503.95/ha. Cost of production of black gram was Rs.2566.39/qtl. B:C ratio at cost C in case of large farmer was 1.63 .B:C ratio at overall for cost C was 1.51.

Analysis and Interpretation

Per Hectare Physical Inputs and Output of Safflower

Per hectare physical inputs and output of safflower were calculated and are presented in Table 1. Results revealed that use of hired human labour and the family human labour was 25.17 man days and 21.40 man days respectively. Use of bullock labour was 7.11 pair days while the use of machine labour was 5.67 hours. Use of Seed was 13.41 kg. In case of fertilizers, use of Phosphorus was 15.32 kg followed by 18.59 kg of Nitrogen then 4.13 kg of Potassium 7.91 quintals of manure was used while 1.19 litres of plant protection was used to control pest and diseases on safflower. By using the mentioned physical inputs the main produce (grain) was occurred about 12.37 quintals and by produce (straw) was 1.08 quintals.

Table-1 Physical Inputs and Output of Safflower Growers (Per Hectare)

S. No.	Particulars	Unit	Quantity
	Input		
1	Hired Human Labour	Manday	25.17
2	Bullock Labour	Pairday	7.11
3	Machine	Hour	5.67
4	Seed	Kg	13.41
5	Manure	Qtl	7.91
6	Fertilizer		
i.	N	Kg	18.59
ii.	P	Kg	15.32
iii.	K	Kg	4.13
7	Plant Protection	Lit	1.19
8	Family Human Labour	Manday	21.40
	Output		
9	Main Produce (Grain)	Qtl	12.37
10	By Produce (Straw)	Qtl	1.08

Per Hectare Costs and Returns of Safflower

Per hectare costs and returns of safflower were calculated and are presented in Table 2. It is observed from the table that Cost-C was Rs. 28541.51 and Cost-B was Rs. 24773.51 followed by Cost-A was Rs. 17887.48. Among the all items of expenditure, proportionate of rental value of land was

Periodic Research

21.81 per cent followed by hired human labour (17.88 per cent), machinery charges (9.93 per cent), seed (1.95 per cent), bullock labour (21.17 per cent), family human labour (13.20 per cent) and fertilizers (N+P+K = 0.92 per cent). Expenditure on Manure (3.54 per cent) plant protection (0.80 per cent), land revenue (0.71 per cent), incidental charges 3.70 per cent), interest on working capital (0.45 per cent), depreciation on capital assets (1.61 per cent) and interest on fixed capital (2.31 per cent) have less than 5 per cent proportionate expenditure hence these considered minor items of expenditure.

Table: 2 Per Hecatre of Cost and Return of Safflower Growers (Rs./ha)

S. No.	Particulars	Unit	Quatnity	Rate/ units	Value	Percent
1	**Hired human labour**	man days				
	Male		13.29	250	3322.50	11.64
	Female		11.88	150	1782.00	6.24
	Sub Total		**25.17**		**5104.50**	**17.88**
2	Bullock labour	pair days	7.11	850	6043.50	21.17
3	Machine labour	Hours	5.67	500	2835.00	9.93
4	Seed	Kgs	13.41	41.54	557.05	1.95
5	Manures	Qtls	7.91	127.81	1010.98	3.54
6	**Fertilizers**	Kgs				
	N		18.59	7.27	135.15	0.47
	P		15.32	5.84	89.47	0.31
	K		4.13	9.33	38.53	0.14
	Sub Total		**38.04**		**263.15**	0.92
7	Plant protection charges	Liters	1.19	192.77	229.40	0.80
8	Incidental Charges				201.91	0.71
9	Interest on working Capital @13%	-			1055.96	3.70
10	Land revenue				127.66	0.45
11	Depreciation on capital assets	-			458.38	1.61
12	**Cost- A**				**17887.48**	**62.67**
13	Rental value of land	-			6226.03	21.81
14	Interest on fixed capital @11%	-			660.00	2.31
15	**Cost-B**				**24773.51**	**86.80**
16	**Family human labour**	man days				
	Male		5.58	250	1395.00	4.89
	Female		15.82	150	2373.00	8.31
	Sub Total		**21.40**		3768.00	13.20
17	**Cost- C**				**28541.51**	**100.00**

(Figures in per cent indicates percentage to the Cost-C)

Per hectare profitability in safflower

Per hectare profitability in safflower production was calculated and is presented in Table 3. It was cleared from the table the main produce was 12.37 quintals while the by produce was 1.08 quintals. Gross returns were Rs. 38122.15 in which main produce was main produce was Rs.37964.64 and by produce Rs. 157.51. It is clear from the table that Net profit from safflower crop was found to be Rs. 9580.64. The farm business income was calculated by subtracting Cost-A from Gross returns and which was found to be Rs. 2023.67 likewise family labour income was Rs. 13348.64. The Output-Input ratio was 1.34. Per quintal cost of production of safflower was Rs. 2307.32.

Table-3 Profitability in Safflower Production (Per Hectare)

S. No.	Particulars	Unit	Amount (Rs)
1	Return from main produce	Qtls	37964.64
2	Return from by produce	Qtls	157.51
3	Gross return		**38122.15**
4	Cost-A	-	17887.48
5	Cost-B	-	24773.51
6	Cost-C	-	28541.51
7	Farm Business Income	-	20234.67
8	Family Labour Income	-	13348.64
9	Net profit	-	9580.64
10	Output-Input ratio	-	1.34
11	Per quintal cost of production		2307.32

Periodic Research

Conclusion

Thus, it is evident from the forgoing discussion that per hectare total cost of safflower i.e. cost-C was Rs 28541.51 in which contribution of cost-A was Rs 17887.48 and cost-B was Rs 24773.51 respectively. The profit in cultivation of safflower at farm business income, family labour income and net profit was Rs 20234.67, Rs 13348.64 and Rs 9580.64 respectively. The output-input ratio of safflower was 1.34 which indicates that safflower crop is a highly profitable crop.

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