

Economics of maize production in Aurangabad district of Maharashtra

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ABSTRACT

Investigation was carried out during the year 2010-2011. Multistage sampling design was adopted for selection of district, tehsil, villages and cultivators. In all 60 cultivators were selected for present study. The techniques like mean, percentage, ratio and cost concept of Cost-A, Cost-B and Cost-C were used to analyze the data. The results revealed that use of hired human labour was more than family human labour in maize production. Per hectare net profit was Rs.18741.55. The output-input ratio was 1.46. Per quintal cost of production of maize was Rs.530.88.

KEY WORDS : Maize, Net profit, Cost-C, Gross returns

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Maize (*Zea mays* L.) is considered as queen of the cereal. Maize belongs to the genus 'Zea' family Gramineae. In our country maize is mainly grown for grain purpose, which is consumed either as food or feed. Utilization of maize for specialized purpose such as 'pop corn' is also made which is best food for children. It is also a good feed for poultry, piggery and other animals. Maize grain contains about 10 per cent protein, 4 per cent oil, 70 per cent carbohydrates 2.3 per cent crude fibre, 10.4 per cent albuminodies and 1.4 per cent ash. About 55 per cent of the total maize produced in India is used as direct human food and less than 35 per cent is to animal feed industry. Maize grain has significant quantities of vitamin A, nicotinic acid, riboflavin and vitamin E. Maize among the cereals ranks third, both in terms of area and production in the world.

In India, the important maize growing states include Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Punjab along with Karnataka, Himachal Pradesh and Andhra Pradesh. The need was felt to answer some queries such as costs, returns and profitability. Keeping in view the above aspects, the present study has been undertaken.

METHODOLOGY

Multistage sampling design was adopted in selection of district, tehsils, villages and maize growers. In first stage, Aurangabad district was purposively selected because of availability of more area under maize production in the district. In second stage, Kannad and Sillod tehsils of Aurangabad district were selected on the basis of highest area under maize cultivation. In third stage, from each selected tehsil, five villages were selected on the basis of highest area under maize cultivation. The selected villages in Sillod tehsil were namely Andhari, Ghatnandra, Kerhala, Modha bk and Shivana, whereas in Kannad tehsil, Chincholi, Javkheda, Karanjkhed, Nachanvel and Pishor. In the fourth stage, stratified random sampling technique was used for each village. Thus, from 10 villages, 60 maize growers were selected for the present study. The cross sectional data were collected from sixty growers by

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personal interview method with the help of pre-tested schedule for the year 2010-2011. The cost concepts *viz.*, Cost-A, Cost-B and Cost-C were used to analyze the data in present investigation. Human labour was measured in man days. One man day consisted with 8 hours. Labour cost was evaluated at the rate of Rs.150 per day for male and Rs.100 per day for female. The female labour was converted into man days by multiplying to number of female with 0.66. Bullock labour was charged at the rate of Rs. 280 per day for one pair of bullocks. Machine labour in case of owned machine was evaluated as per the hired charge prevailed in the village and in case of hired machine as per the actual amount paid was Rs. 350 per hour. Rate prevailing in the market for nitrogen, phosphorus and potash was Rs.13.04, Rs.23.75 and Rs.9.33 per kg, respectively. One cartload of manure was considering as five quintals and its prevailing price was Rs.500 per tonne.

ANALYSIS AND DISCUSSION

The findings obtained from the present study are presented below:

Physical inputs and cost of cultivation of maize production:

Per hectare physical inputs and itemwise expenditure in maize production was estimated and presented in Table 1. The result revealed that, use of hired human labour, seed and family human labour was 67.45 man days, 18.26 kg and 21.52 man days, respectively. Among the various items of expenditure, the proportionate share of cost of hired human labour was 24.74 % being predominant followed by rental value of land (24.18%), irrigation (9.26%) and family human labour (7.89%). The results are in confirmity with the findings Chahal and Kataria (2005) in regards to quantity of seed and Kshirsagar (2010) in case of total cost of cultivation.

Sr. No.	Particulars	Unit	Quantity	Amount (Rs.)	Per cent
1.	Hired human labour	man day	67.45	10117.50	24.74
2.	Bullock labour	pair day	5.56	1556.80	3.81
3.	Machine labour	hour	8.42	2947.00	7.21
4.	Seed	kg	18.26	1406.80	3.44
5.	Manure	q	54.30	2715.00	6.64
6.	Fertilizer (N:P:K)	kg	93.22:52.42:33.60	2774.03	6.78
7.	Plant protection	lit	1.07	192.80	0.47
8.	Irrigation	m ³	1942.85	3788.56	9.26
9.	Land revenue	-	-	50.34	0.12
10.	Incidental charges	-	-	138.00	0.34
11.	Interest on working capital	-	-	1113.09	2.72
12.	Cost-A (Σ 1-11)	-	-	29799.92	65.53
13.	Rental value of land	-	-	9889.81	24.18
14.	Depreciation on capital assets	-	-	471.46	1.15
15.	Interest on fixed capital	-	-	510.16	1.25
16.	Cost-B (Σ 12-15)	-	-	37671.35	92.11
17.	Family human labour	man day	21.52	3228.00	7.89
18.	Cost-C (Σ 16-17)	-	-	40899.35	100.00

Figures in parenthesis are the percentage to the Cost-C

Sr. No.	Particular	Unit	Quantity	Amount
1.	Gross returns	q	77.04	59640.90
2.	Cost-A	-	-	29799.92
3.	Cost-B	-	-	37671.35
4.	Cost-C	-	-	40899.35
5.	Farm business income(Gross return minus Cost-A)	-	-	32840.98
6.	Family labour income (Gross return minus Cost-B)	-	-	21969.55
7.	Net profit (Gross return minus Cost-C)	-	-	18741.55
8.	Output-Input ratio (Gross return divided by Cost-C)	-	-	1.46
9.	Per quintal cost of production (Cost-C minus by produce value divided by main produce quantity)	-	-	530.88

Profitability of maize production:

Per hectare profitability in maize production was calculated and is presented in Table 2. The results revealed that, gross return and net return obtained from maize was found to be Rs.59640.90 and Rs.18741.55, respectively. Output-input ratio was 1.46. that means when 1 rupee spent on maize production, it would lead to give the returns of Rs 1.46. Per quintal cost of production of maize was Rs. 530.88. The results were conformity with results obtained by Dwivedi *et al.* (2011) with respect to output-input ratio.

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