

RESEARCH ARTICLE :

Costs, returns and profitability of pomegranate production in Ahmednagar district

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SUMMARY : Present study was designed to measure input use cost, return and profitability in pomegranate production in Ahmednagar district of Maharashtra State. In present investigation the sample of 32 pomegranate growers were selected from study area which input-output data collected based in the year 2015-16. The results of study revealed that per hectare total cost with regards to pomegranate was Rs. 178936.92 while the contribution of cost-A was 31.38 per cent (Rs.56140) and cost-B was extending of 96.68 per cent (Rs. 172997.86). The different majors of farm income were also estimated at their respective costs, output-input ratio and per quintal cost of production. Gross return was Rs. 425010.94. Per hectare Farm business income, family labour income and net profit were Rs.368870.95, Rs.252013.08 and Rs.246074.02, respectively in pomegranate production. It was inferred that the pomegranate production was more profitable and input-output ratio was 2.37. Per quintal cost of production was Rs. 2459.61 of pomegranate production.

KEY WORDS :

Cost, Returns,
Output-input ratio,
Profitability

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BACKGROUND AND OBJECTIVES

Pomegranate (*Punicagranatum*) is one of the important fruit crop of tropical and sub-tropical regions of the country, which belongs to family *Punicaceae*, originated from Iran. It is commercially grown apart from India. It also cultivated in semi-arid and arid region of the country. India is second largest producer of fruits in world after China it shares in world output of fruits is 12.6 per cent. In global market, India plays a significant role in export of pomegranate fruits. Recently, exports of pomegranate from India have increased and extended to several countries. For export

purpose Ganesh, Phule Arakta, G-137, Bhagava and Mridula are most suitable varieties.

India is one of the largest producers of pomegranate. During 2013-2014 pomegranate was cultivated over 1.31 lakh ha with an annual production of 13.46 lakh tonnes and productivity of 10.27 tonnes/ha in India. At present Maharashtra is the leading state in acreage covering about 68.7% of the area under pomegranate. Production wise Maharashtra ranks first (9, 45,000 tonnes) accounting 70.2%, followed by Karnataka (1, 34,180 tonnes), Gujarat (99,330 tonnes),

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Andhra Pradesh (90,010 tonnes), Telangana (25,970 tonnes), Madhya Pradesh (25,290 tonnes), Tamilnadu (13,090 tonnes) and other states contributing for the rent of the production. The total area under Pomegranate in Ahmednagar district during the year 2013-14 was 4388.0 hectare with the production of 30644 MT and productivity of 6.98 MT/ha. (SAO office Ahmednagar).

Pomegranate is considered as very nutritive fruit and rich in vitamin B, vitamin A and potassium. In India it is largely used as “desert fruit” and for fresh juice. Pomegranate fruit is also used for making delicious juice and health drinks. The edible portion of Pomegranate fruit is aril which is nearly 68% of the total fruit containing 78% moisture, 0.7% mineral matter, 1.6% protein, 0.1% fat, 14.5% carbohydrate and 5.1% fibre. The fruits are rich in vitamins such as 0.06mg thiamine, 0.1mg riboflavin, 0.3mg niacin and 16mg vitamin C per 100gm pulp and minerals 10mg, calcium 12mg, phosphorus 70mg and 0.3 mg iron per 100gm pulp.

RESOURCES AND METHODS

Multistage sampling design was adopted in selection of district, tehsils, villages and pomegranate growers. In the first stage, Ahmednagar district was purposively selected for the present study because there was highest area under pomegranate fruit crop in this district. In second stage, Shrigonda and Karjat tehsils were selected because of more number of pomegranate growers. In third stage, from each selected tehsil, four villages were selected on the basis of maximum area under pomegranate cultivation. The analytical techniques standard cost concepts *i.e.* cost-A, cost-B, cost-C used

to study the cost of cultivation. To analyze the data in the present study tabular analysis, time series analysis, Frequency and percentage method were used.

OBSERVATIONS AND ANALYSIS

Present investigation is intended to study the cost of production of Pomegranate in Ahmednagar district. Data regarding cost of production of pomegranate have been collected by special interview method. The data collected have processed, tabulated, analysed and discussed them with view to draw valid conclusion.

Costs, returns and profitability of pomegranate production :

Total establishment cost of pomegranate orchard of three years was calculated and from it the value of amortized establishment cost was taken from annual cost of cultivation. The physical input and output were converted into monetary terms to calculate cost of cultivation and gross returns. With the help of costs, returns and profitability of pomegranate production was determined in both the cases as follows.

Physical inputs and outputs of pomegranate cultivation :

Per hectare physical inputs and output of Pomegranate cultivation were estimated and are presented in Table 1.

Use of hired human labour was high as 30.61 man days while family human labour was 16.97 man days per hectare. Use of bullock labour was 6 pair days. The use of machine labour was 2.02 hours. The use of

Table 1 : Per hectare physical inputs and outputs of pomegranate cultivation

Input	Unit	Quantity
1.Hired human labour	man /days	30.61
2.Bullock labour	pair /days	6
3.Machine labour	Hours	2.02
4.Manure	qtls.	150.31
5.Nitrogen	Kg	290.08
6.Phosphorus	Kg	205.19
7.Potash	Kg	506.08
8.Plant protection	Lit	13.03
9.Irrigation	m ³	1137.5
10.Family human labour	man/days	16.97
Output		
1.Yield	qtls.	74.79

manures and plant protection chemical was 150.31 quintals per hectare and 13.03 liter per hectare, respectively. Use of nitrogen, phosphorus and potash was 290.08, 205.19 and 506.36 kg per hectare, respectively in pomegranate orchard. In case of irrigation requirement per hectare number of irrigation different with the source of irrigation, on an average level it was 1137.5m³/4” per hectare. It was also observed that yield of pomegranate was 74.79 quintals per hectares.

Per hectare Cost of cultivation of pomegranate production :

Per hectare item wise expenditure in relation to pomegranate and proportionate share of each item in cost-C were calculated and presented in Table 2.

Per hectare total cost (Cost-C) was ₹. 178936.92 while the contribution of cost-A was 31.38 per cent (Rs.56140) and the contribution of cost-B was extending of 96.68 per cent (Rs. 172997.86). Among the various items of expenditure, the per cent share of rental value of land was Rs. 70816.96 predominant as 39.58 per cent followed by amortized establishment cost Rs. 37620.21 as 21.02 per cent in pomegranate orchard. In pomegranate cultivation 5.99 per cent cost was on hired human labour and 3.76 per cent cost on plant protection *i.e.* Rs 10713.28 and Rs. 6728.75, respectively. The per cent share of Fertilizers was Rs. 10355.83 as 5.79 percent. Expenditure on manures was Rs. 9825 as per cent 5.5 and interest on fixed capital was Rs. 8420.7 as 4.7 per cent.

Sr. No.	Particular	Amount (Rs.)	Percentage
1.	Hired human labour	10713.28	5.99
2.	Bullock pair/ labour	3000	1.68
3.	Machine labour	806.25	0.45
4.	Manures	9825	5.5
5.	Fertilizers	10355.83	5.79
6.	Plant protection	6728.75	3.76
7.	Irrigation	4173.5	2.33
8.	Land revenue	109.19	0.06
9.	Incidental expenditure	546	0.3
10.	Interest on working capital	6013.51	3.36
11.	Depreciation on assets	3868.68	2.16
12.	Cost A (sum of 1 to 11)	56140	31.38
13.	Interest on fixed capital	8420.7	4.7
14.	Rental value of land	70816.96	39.58
15.	Amortized establishment cost	37620.21	21.02
16.	cost B (sum 12 to 15)	172997.86	96.68
17.	Family labour	5939.06	3.32
18.	Cost C	178936.92	100

Figures in parenthesis are indicated in percentage.

Sr. No.	Particular	Amount (Rs.)
1.	Gross return	425010.94
2.	Cost A	56139.99
3.	Cost B	172997.86
4.	Cost C	178936.92
5.	Farm business income (Gross return-Cost A)	368870.95
6.	Family labour income (Gross return- Cost B)	252013.08
7.	Net profit (Gross return-Cost C)	246074.02
8.	Output-input ratio Gross return/Cost C	2.37
9.	Per qtl cost of production (Cost C/ total quantity of produced)	2459.61

Profitability of pomegranate production :

Per hectare profitability of pomegranate production was estimated and presented in Table 3.

It was observed that gross return was Rs. 425010.94. Per hectare Farm business income, family labour income and net profit were Rs.368870.95, Rs.252013.08 and Rs.246074.02, respectively in pomegranate production. It was inferred that the pomegranate production was more profitable and input-output ratio was 2.37. Per quintal cost of production was Rs. 2459.61 of pomegranate production.

Conclusion :

- Per hectare total cost (Cost-C) was ₹. 178936.92 while the contribution of cost-A was 31.38 per cent (Rs.56140) and the contribution of cost-B was extending of 96.68 per cent (Rs. 172997.86).
- Profit on farm business income, family business income and net profit was Rs. 368870.95, Rs.252013.08 and Rs.246074.02, respectively.
- The output-input ratio was 2.37 which indicate that pomegranate crop is highly profitable enterprise.

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