



E-ISSN: 2278-4136  
P-ISSN: 2349-8234  
JPP 2018; 7(4): 1525-1527  
Received: 05-05-2018  
Accepted: 10-06-2018

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## Cost and returns of summer tomato production in Ahmednagar district of Maharashtra

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### Abstract

The present study was carried out in Rahuri, Newasa, Akole and Sangmner tehsils of Ahmednagar district to study cost of cultivation in production of summer tomato. The study was based on the primary data of 96 summer tomato cultivators for the year 2015-16.

The average per hectare cost of cultivation of summer tomato was estimated to ₹ 259279.62. Amongst the different items of cost, rental value of land was the major item of cost followed by hired human labour, staking charges, seedlings, family human labour, fertilizers, manures, machine power, plant protection charges etc., were the major items of cost in the total cost of cultivation of summer tomato. The average production of 980.08 quintal per hectare of main produce was obtained from summer tomato. The gross returns obtained were ₹ 470793.91 at the overall level with B: C ratio was 1.82.

**Keywords:** summer tomato, costs, returns and profitability

### Introduction

Tomato is one of the most important protective food crops in India and it is the world's largest vegetable crop and known as protective food both because of its special nutritive value and also because of its wide spread production. Tomato is also important commercial and dietary vegetable crop and is protective supplementary food. As it is short duration crop and gives high yield, it is important from economic point of view and hence area under its cultivation is increasing day by day.

The India's area and production of tomato in the year 2014-15 are about 882.032 thousand ha. and 18735.91 thousand tons, respectively. In Maharashtra, total area under tomato during year 1985-86 was 22,364 hectares, which increased to 50,000 hectares and production was 1200 thousand ton for the year 2013-14. The Ahmednagar, Pune, Satara and Nashik are the major tomato producing districts of Maharashtra. This clearly indicates that area has increased at faster rate. The present investigation was attempted to study cost of cultivation of production summer tomato. Ahmednagar district is important district producing tomato. Summer tomato is an important crop grown in Ahmednagar district. Therefore, Ahmednagar district were purposively selected for the study.

### Objective

To estimate cost and returns in summer tomato production

### Methodology

The multistage sampling design was used for selection of region, district, tehsil, villages and summer tomato producers. The study was conducted in Ahmednagar district as whole. From Ahmednagar district Akole, Sangmner, Rahuri and Newasa tahsils having maximum area under summer tomato cultivation were selected. The study was based on primary data for the year 2016-17. In total eight villages was selected for the study from each selected villages eight summer tomato producer were selected randomly. Thus from Eight villages 96 summer tomato producers were selected. Data collection was done by preparing special interview schedule (Appendix-I) by personal interview of the summer tomato producer. The farmers were also asked to prioritize the most important constraints they were facing in production of summer tomato.

### Results and Discussion

#### Cost of cultivation of summer tomato

The cost of cultivation is the basis on which marketing decisions are taken. Farmer may be large or small prefer to sale his produce in the market, only when the market price covers the cost of cultivation.

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The per hectare cost of cultivation of summer tomato on the sample farms during 2015-16 has been estimated and the same is represented in Table 1.

It is observed from table that, per hectare total cost of summer tomato production was ₹ 259279.62 in which share of cost A and cost B was 54.72 per cent and 82.19 per cent respectively. Among the all items of cost the share of rental value of land was maximum, i.e. ₹ 78,306.92 which is 30.20 per cent of total cost, but rental value of land is not an item of direct cost. Therefore, though it is major item of cost, it does not affect in total profit, because farmer always considers the profit at direct paid out cost (cost A). Among the different items of

direct costs. The cost of hired human labour was maximum which constitute 14.27 per cent share in total cost (cost C) followed by staking charges which was 8.57 per cent of the total cost. The other item of direct costs were seedling, fertilizers, manure, machine labour, irrigation and incidental charges, which constitute 7.90 per cent, 6.66 per cent, 5.82 per cent, 5.79 per cent, 1.34 per cent and 0.35 per cent share in total cost(cost C) respectively.

It is observed from table that per hectare cost (cost C) of summer tomato was ₹ 259279.62. In which share of cost 'A' was ₹ 156526.08 (60.49 %) and of cost 'B' was ₹ 240664.69 (92.82 %). Per quintal cost of tomato production is ₹ 980.08.

**Table 1 Item wise cost of cultivation of summer tomato in Ahmednagar district Maharashtra.**

Sr. No	Cost items	Qty	Value (₹/ha)	Per cent
1	Hired Human labour (Mandays)			
	a. Male	63.16	11572.31	4.46
	b. Female	222.14	25425.38	9.81
2	Bullock power (Pair days)	2.30	1180.72	0.46
3	Machine power	83.40	15011.71	5.79
4	Seedlings(No)	20476.79	20476.79	5.82
5	Manures (q)	43.64	15091.48	7.90
6	Fertilizers (kg)			
	N	268.84	5519.27	2.13
	P	346.09	8721.56	3.36
	K	173.60	3038.01	1.17
7	Irrigation Charges (₹)		3483.39	1.34
8	Plant protection charges (₹)		11691.74	4.51
9	Incidental charges (₹)		913.40	0.35
10	Staking charges		22216.45	8.57
11	Repairs (₹)		1082.15	0.42
	Working capital (₹)		145424.35	56.09
12	Int. on Working Capital		8639.11	3.33
13	Depre. on farm implements		2603.89	1.00
14	Land revenue and taxes		158.73	0.06
	Cost 'A'		156826.08	60.49
15	Rental value of land		78306.92	30.20
16	Int. on fixed capital		5531.69	2.13
	Cost 'B'		240664.69	92.82
17	Family labour			
	a. Male	77.88	14099.91	5.44
	b. Female	41.06	4515.02	1.74
	Cost 'C'		2592279.62	100.00
II	Output (q)			
	a. Main produce	262.68	470793.91	
	b. Bye-produce	0.00	0.00	
III	Cost 'C' net of bye produce		259279.62	
IV	Per quintal cost		980.08	

(Figure in parentheses are the percentage to the total cost c)

#### Cost, returns, gross income and B:C ratio of summer tomato

It is noted from above Table 2, at the overall level, it was ₹ 4,70,793.91 with per hectare production of 264.73 quintals of tomato. Among the size of holdings, per hectare yield of tomato increased with increase in the size of holdings. The per hectare profit at cost C was highest in case of medium size group (₹ 2,32,030.81) followed by large size group of farms (₹ 2,06,244.29) and small size group (₹ 1,96,358.86). The benefit cost ratio at Cost 'C' was highest in case of medium

size group (1.84), followed by large size group (1.82) and small size group (1.78). At the overall level, benefit cost ratio was 1.82. The benefit cost ratio at all the levels of cost and groups were observed more than unity, therefore the cultivation of summer tomato is viable economic proposition in the area under study. per hectare gross income received was ₹ 4,47,841.06, ₹ 5,08,565.79 and ₹ 4,58,516.87 for small, medium and large size of group of holdings, respectively.

**Table 2:** Costs and return structure of summer tomato

Sr. No.	Particulars	Overall (Per ha.)
1	Total cost	
	i) Cost 'A'	156826.08
	ii) Cost 'B'	240664.69
	iii) Cost 'C'	259279.62
2	Profit at	
	i) Cost 'A'	313967.83
	ii) Cost 'B'	230129.22
	iii) Cost 'C'	211514.29
3	Production(q)	264.73
4	Gross income	470793.91
5	B:C ratio	
	i) Cost 'A'	3.00
	ii) Cost 'B'	1.96
	iii) Cost 'C'	1.82

### Profitability of summer tomato production

There are three different measures of farm business income, which show profitability of an enterprise at three different types of costs. Profitability at cost A is the farm business income, profitability at cost B is the family labour income and profitability at cost C is the net income or net profit. These three different profitability levels were worked out on per hectare basis in summer tomato production and are presented in Table 2.

It is observed from Table 2 that, per hectare gross return obtained were ₹ 470793.91. With regards to various farm business measures, it is revealed that farm business income in summer tomato production was ₹ 313967.83 where as family labour income was ₹ 230129.22 and net income was ₹ 211514.29 with benefit cost ratio of 1.82, which interprets very high profit in summer tomato production activity.

Hence, hypothesis made i.e. summer tomato production is profitable enterprise is proved after profitability analysis.

### Conclusion

The present investigation was intended to depict the picture of summer tomato growing enterprise in Ahmednagar district. The enterprise assumed an important place in economy of the tract under study. The foregoing discussion on various aspects of study led to draw the following conclusions.

Per hectare cost of summer tomato production, and it is observed from table that per hectare cost (cost C) of summer tomato was ₹259279.62. In which share of cost 'A' was ₹ 156826.08 and of cost 'B' was ₹ 240664.69 and per hectare gross return obtained from summer tomato production were ₹ 470793.91.

Hence, hypothesis made i.e. summer tomato production is profitable enterprise is proved after profitability analysis.

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