



Research Paper

Economics of production and marketing of tomato in Amravati district

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ABSTRACT : In this study an attempt has been made to study the “Economics of tomato production in Amravati district” with view to work out the economics tomato production. The economic analysis of data indicating that cost ‘C’ was found to Rs. 136110.00, Rs. 142778.00 and Rs. 148614.00 per hectare for small, medium and large growers, respectively. Net returns over cost ‘C’ was Rs. 6300.52, Rs. 14110.80 and Rs. 24202.70 per hectare and input-Output ratio at cost ‘C’ was 1.05, 1.10 and 1.16 for small, medium and large growers, respectively.

KEY WORDS : Tomato, Cost of cultivation, Cost of production

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INTRODUCTION :

Vegetables are one of the important aspects of the horticulture sector of India in particular and of the agricultural sector of India in general. Various factors have led to the rise in the area under production of vegetables in India. The productivity of vegetables in India has been rising from last many years. India continues to the second largest producer of vegetables in the world next to china. During 2013-14, the production of horticultural crops was about 283.5 million tonnes from an area of 24.2 million hectares (ha). Out of the six categories, that is, fruits, vegetables, flowers, aromatic, spices and plantation crops, the highest annual growth of 9.5 per cent is seen in fruit production during 2013-14. During 2013-14, the area under vegetables is estimated at 9.4 million ha with a production of 162.9 million tonnes in India. For this period the total vegetable production was highest in case of West Bengal (23,045 thousand

tonnes) followed by Uttar Pradesh (18,545 thousand tonnes). While in Maharashtra the area under vegetable was (726.00 thousand ha) in 2013-2014 with the production of (10161.83 thousand tonnes). Per capita availability of vegetables in the country is 376.8 (in g/ person/day).

The tomato is the edible, often red berry-type fruit of the nightshade *Solanum lycopersicum*, commonly known as a tomato plant. The tomato is consumed in diverse ways, including raw, as an ingredient in many dishes, sauces, salads, and drinks. The tomato belongs to the nightshade family, *Solanaceae*. The species originated in Central and South America. The plants typically grow to 1–3 meters (3–10 ft) in height and have a weak stem that often sprawls over the ground and vines over other plants. It is a perennial in its native habitat, although often grown outdoors in temperate climates as an annual. An average common tomato weighs approximately 100 g. Tomato ranks third in priority after

Potato and Onion in India, but ranks second after potato in the world. India ranks second in the area as well as in production of Tomato. There is an increase in area from 865.0 thousand ha in 2010-11 to 882.03 thousand ha in 2013-14, while in terms of production it has increased from 16826.0 to 18735.91 thousand tons. The area under tomato in Maharashtra was about 50.00 thousand ha. during 2013-2014 and production was 1200 thousand tons. In Maharashtra leading vegetable growing districts are Pune, Nashik, Ahmednagar, Kolhapur etc., respectively. In 2013-14, Area, Production and Productivity of tomato in Amravati district was 90(00' ha), 799(00'tons) and 12.65 (kg/ha), respectively.

The main objective of the study was to work out economics of tomato.

MATERIALS AND METHODS :

For the present study, Amravati district was selected purposively. From Amravati district three tahsil namely viz., Amravati, Achalpur and Anjangaon surji were selected purposively by considering the maximum area under tomato cultivation. List of vegetable growing

villages were obtained from taluka agriculture office of the selected tahsil and 5 villages from each tahsil were selected randomly. Two farmers from each village were selected for study. The list of vegetable growers so obtained has been further regrouped under the category small, medium and large group on the basis of size of land holding. Simple tabular analysis was used for data analysis.

RESULTS AND DATA ANALYSIS :

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Per hectare cost of cultivation of tomato :

The accepted standard cost concept *i.e.* cost A, cost B, and cost C, was used in present analysis.

Per hectare input utilization of tomato :

The per hectare input utilization of tomato by selected growers is presented in Table 1.

It is seen from the Table 1 that per hectare hired

Table 1 : Per hectare input utilization of tomato

Sr. No	Particulars	Unit	Size of land holding			Overall
			Small	Medium	Large	
1.	Hired human labour					
	Male	Days	26.42	27.40	28.03	27.08
	Female	Days	98.45	110.74	145.77	113.17
	Total		124.87	138.14	173.80	140.26
2.	Bullock pair	Pair	9.31	8.88	7.44	8.74
3.	Machine charges	Hrs.	4.89	5.27	5.41	5.12
4.	Manures	Carts	8.50	18.51	21.30	14.48
5.	Irrigation	No.	39.28	37.68	32.73	37.27
6.	Fertilizers					
	N	Kg	110.11	98.79	89.22	101.83
	P	Kg	76.25	65.55	62.26	69.77
	K	Kg	42.44	42.22	41.72	42.20
	Total		228.80	206.56	193.20	213.82
7.	Seed	Kg	0.64	0.59	0.57	0.60
8.	Plant supporting charges	Kg	124.76	119.07	115.17	120.81
9.	Plant protection chemicals	Litre	3.91	3.25	2.80	3.45
10.	Family human labour					
	Male	Days	21.60	20.55	17.73	20.38
	Female	Days	59.60	56.85	50.47	56.64
	Total		81.20	77.40	68.20	77.02

Figures in parenthesis indicate the percentages to cost 'C'

human labour utilization was observed highest in large group *i.e.* 173.80 days, and at overall level it is 140.26 labour days. At overall bullock labour utilization was 8.74 pair days. At overall level utilization of seed was 0.60 kg per hectare. At overall level utilization of plant supporting charges was 120.81 kg.

Per hectare cost of cultivation of tomato :

The per hectare cost of cultivation of tomato by selected growers is presented in Table 2.

It could be seen from the Table 2 that the per hectare total cost of cultivation of tomato growers at overall level for the sample as a whole was Rs.141028.00 amongst the different items of expenditure, overall human labour accounted 24.36 per cent share in the total cost cultivation and it is highest in all items which included in the cost of cultivation. The total cost of cultivation (cost 'C') of tomato was highest in the large size group *i.e.* 148614.00

per hectare followed by medium size group 142778.00 and small size group 136110.00 per hectare, respectively. At overall level per hector cost 'A' and Cost 'B' was Rs. 97994.90 and Rs. 128463.00, respectively which was 69.48 per cent and 91.21 per cent of total Cost 'C'.

Economics of tomato production :

Table 3 showed that the gross returns from tomato production at overall level were Rs. 153849.00 per hectare. The gross returns ranged between Rs. 142411.00 in small size group to Rs. 172816.47 in large size group. Cost of cultivation at overall level cost 'A', cost 'B' and cost 'C' were Rs. 97995.00, Rs. 128463.00 and Rs. 141028.00, respectively. Net returns per hectare of Cost 'A' is highest *i.e.* Rs 69647.12 in large size group followed by Rs. 57011.00 in medium size of group. The net return at Cost 'C' in small, medium and large size group were Rs. 6300.52, Rs. 14110.80, and Rs. 24202.70, respectively.

Table 2 : Per hectare cost of cultivation of tomato

Sr. No.	Particulars	Size of land holding			Overall
		Small	Medium	Large	
1.	Hired human labour				
	Male	5285.71 (3.88)	5481.48 (3.84)	5607.14 (3.77)	5419.44 (3.84)
	Female	14767.85 (10.85)	16611.11 (11.63)	21866.07 (14.71)	16977.10 (11.98)
2.	Bullock labour	4657.74 (3.42)	4444.44 (3.11)	3720.23 (2.50)	4375 (3.11)
3.	Machine charges	1467.86 (1.08)	1583.03 (1.11)	1625 (1.09)	1539.08 (1.09)
4.	Manures	5952.38 (4.37)	12962.96 (9.08)	14916.67 (10.04)	10147.20 (7.10)
5.	Irrigation	11785.70 (8.66)	11305.56 (7.92)	9821.42 (6.61)	11183.30 (7.95)
6.	Fertilizers				
	N	660.71 (0.49)	592.77 (0.42)	535.35 (0.36)	611.07 (0.43)
	P	1830 (1.34)	1573.33 (1.10)	1494.28 (1.01)	1674.66 (1.19)
	K	763.92 (0.56)	760 (0.53)	751.07 (0.51)	759.74 (0.53)
7.	Seed	13500 (9.92)	12502.78 (8.76)	11987.5 (8.07)	12847.90 (9.14)
8.	Plant protection	7833.33 (5.76)	6518.51 (4.57)	5619.04 (3.78)	6922.22 (4.94)
9.	Plant supporting	18714.28 (13.75)	17861.11 (12.51)	17276.78 (11.63)	18122.90 (12.88)
10.	Incidental charges	192.85 (0.14)	288.88 (0.20)	348.21 (0.23)	257.91 (0.17)
11.	Repairing charges	166.07 (0.12)	219.44 (0.15)	259.52 (0.17)	203.88 (0.14)
12.	Miscellaneous charges	148.21 (0.11)	327.77 (0.23)	265.47 (0.18)	229.43 (0.16)
13.	Land revenue	168.09 (0.12)	179.81 (0.13)	177.97 (0.12)	173.91 (0.12)
14.	Depreciation of assets	970.83 (0.71)	1011.11 (0.71)	1067.85 (0.72)	1005.55 (0.71)
15.	Working capital	87726.62 (64.45)	93033.17 (65.16)	96093.75 (64.66)	91270.9 (64.71)
16.	Interest on working capital @ 6 per cent	5331.94 (3.92)	5653.47 (3.96)	5829.70 (3.92)	5544.54 (3.93)
17.	Cost-A	94197.47 (69.21)	99877.56 (69.95)	103169.27 (69.42)	97994.90 (69.48)
18.	Rental value of land	23529.92 (17.29)	25959.38 (18.18)	28606.94 (19.25)	25443.40 (18.01)
19.	Interest on fixed capital	5141.66 (3.81)	4301.85 (3.47)	5718.47 (3.85)	5024.31 (3.71)
20.	Cost-B	122869.06 (90.31)	130138.79 (91.60)	137494.69 (92.52)	128463.00 (91.21)
21.	Family human labour				
	Male	4321.43 (3.79)	4111.11 (3.34)	3547.61 (2.98)	4077.78 (3.46)
	Female	8919.64 (5.53)	8527.77 (4.75)	7571.42 (4.63)	8487.49 (5.08)
22.	Cost-C	136110.00 (100.00)	142778.00 (100.00)	148614.00 (100.00)	141028.00 (100.00)

Figures in parentheses indicate the percentage to cost 'C'

Table 3 : Per hectare economics of tomato production

Sr. No.	Particulars	Size of land holding			Overall
		Small	Medium	Large	
1.	Average yield (qtl/ha)	163.69	178.51	183.57	172.77
2.	Average price received per quintal	870.00	878.88	941.42	889.32
3.	Gross returns (Rs.)	142411.00	156889	172816	153849.00
4.	Cost of production (Rs.)	831.51	799.83	809.57	816.88
5.	Cost of cultivation (Rs.)				
	At cost 'A'	94197.50	99877.90	103169.00	97995.00
	At cost 'B'	122869.00	130139.00	137495.00	128463.00
	At cost 'C'	136110.00	142778.00	148614.00	141028.00
6.	Net return over cost (Rs.)				
	At cost 'A'	48213.20	57011.00	69647.10	55853.80
	At cost 'B'	19541.60	26749.70	35321.80	25386.10
	At cost 'C'	6300.52	14110.80	24202.70	12820.80
7.	Input-output ratio				
	At cost 'A'	1.51	1.57	1.68	1.56
	At cost 'B'	1.16	1.21	1.26	1.19
	At cost 'C'	1.05	1.10	1.16	1.09

It was revealed from Table 2 that the input-output ratio for overall size group at Cost 'A', Cost 'B' and Cost 'C' were 1.56, 1.19 and 1.09, respectively. The input-output ratio calculated at cost 'A' and Cost 'C' were greater than unity in all the size groups indicating there by the production of tomato was profitable. Input-output ratio at Cost 'A' was highest *i.e.* (1.68) in large size group followed by medium (1.57) and small (1.51) size group.

Conclusion :

The study revealed that the Per hectare cost of cultivation of tomato at cost 'C' was highest in the large group *i.e.* Rs. 148613.72 followed by medium group Rs. 142777.67 and small group Rs. 136110.13. The average yield and gross returns per hectare increased with the increase in size of farms. Cost of cultivation at overall level cost 'A', cost 'B' and cost 'C' were Rs. 97994.98, Rs. 128462.70 and Rs. 141028.00, respectively. The net return at Cost 'C' in small, medium and large size group were Rs. 6300.52, Rs. 14110.80, and Rs. 24202.74, respectively. An input-output ratio for overall size groups at Cost 'A', Cost 'B' and Cost 'C' were 1.56, 1.19 and 1.09, respectively.

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