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Cost return and profitability in brinjal in Ratnagiri district

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Abstract
The brinjal or eggplant (*solanum melongena*) is one of the most popular and principal vegetable crop grown in India and other part of world. In recent year in Konkan region area under brinjal cultivation is increasing. However, information regarding cost, returns and profitability of brinjal is scanty. So efforts are made in this paper to study cost, returns and profitability of brinjal. The total cost of cultivation (cost 'C') of brinjal was worked out to be ₹ 181039. Out of the total cost the share of human labour was maximum (40.68%) which was followed by rental value of land (39.19%). At the overall level out of total cost (cost C) the input cost comprises 31.80 per cent, cost 'A' was 35.26 per cent and cost 'B' was 77.29 per cent. It is found that brinjal cultivation is profitable at all levels cost in all the groups. The net return at Cost-C were ₹ 213467, ₹ 230746 and ₹ 290671 in case of small, medium and large group respectively, while it was ₹ 244961 at overall level. The benefit cost ratio on small, medium, large size farm and at overall level was estimated to 2.30, 2.32, 2.42 and 2.35 respectively.

Keywords: Cost, return, profitability etc.

Introduction

The brinjal or eggplant (*solanum melongena*) is one of the most popular and principal vegetable crop grown in India and other part of world. The cultivated brinjal is presumed to be of Indian origin with China as secondary centre of origin. It is a member of *solanaceae* family and is closely related to tomato and potato. The brinjal contain approximately 92 percent moisture, 6 percent carbohydrate, 1 percent protein, 0.3 percent fats and some minerals. They are fairly good source of calcium, phosphorous, iron and vitamin B. Brinjal has been reported to have ayurvedic medicinal properties. In recent year in Konkan region area under brinjal cultivation is increasing. However, information regarding cost, return and profitability from brinjal is scanty. In view of this the effort are made to assess "Economics of production of brinjal in Ratnagiri district".

Methodology

The present investigation was carried out in Ratnagiri district. From the Ratnagiri district. Dapoli and Khed tahsils were selected for study and clusters of villages growing brinjal were identified. From the available clusters three clusters from each tahsil were selected randomly. From each cluster 10 farmers growing brinjal in Rabi season were selected randomly. Thus, the final sample consists of two tehsils, six clusters of villages and 60 brinjal growers. The data were collected by survey method with the help of specially designed schedules separately for brinjal cultivators the data were analyzed by using simple statistical tools like arithmetic mean and percentage. For estimation of cost standard cost concept (Cost A, B and C) are used.

Result and Discussion

It is observed that, total cost of cultivation (cost 'C') of brinjal was worked out to ₹ 164533, ₹ 174254 and ₹ 204329 in small, medium and large group respectively, Whereas at the overall level, it was worked out to ₹181039. This indicated that, the cost of cultivation of brinjal showed an increasing trend with increase in size of farm.

At the overall level, the total cost of cultivation (cost 'C') of brinjal was worked out to be ₹ 181039. Out of the total cost the share of expenditure on human labour was maximum (40.68%) which was followed by rental value of land (39.19%), fertilizer (3.40%), manure (1.91%), bullock labour (1.79%), seed (1.24%), irrigation (0.69%) and plant protection

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(0.62%). At the overall level out of total cost (cost C) the input cost comprises 31.80 per cent, cost 'A' was 35.26 per cent and cost 'B' was 77.29 per cent.

It is observed that per hectare gross returns in small group, medium group and large group were ₹ 378000, ₹ 405000 and ₹ 495000 respectively while at overall level gross returns were ₹ 426000. The net return at Cost-C were ₹ 213467, ₹ 230746 and ₹ 290671 in case of small group, medium group and large group respectively, while it was ₹ 244961 at overall level. It is found that the brinjal was profitable at all levels cost in all the groups. The benefit –cost ratio on small, medium, large size farm and at overall level were estimated to 2.30, 2.32, 2.42 and 2.35 respectively.

Table 1: Per hectare physical input use in brinjal cultivation.

Sr. No	Particulars	Group			
		Small (N=24)	Medium (N=17)	Large (N=19)	Overall (N=60)
1	**Hired labour (days)**				
	Male	49	62	80	64
	Female	82	96	110	96
	Total	135	158	190	161
2	**Family labour (days)**				
	Male	70	59	49	59
	Female	96	87	82	88
	Total	161	146	131	146
3	**Total labour (days)**				
	Male	119	121	129	123
	Female	178	183	192	184
	Total	296	304	321	307
4	**Machinery and bullock labour**				
	power tiller	0	0	2	1
	Bullock labour	2	3	2	2
5	Seed (kg.)	0.70	0.75	0.80	0.75
6	Manures (tonnes)	3.50	4.50	5.00	4.33
7	**Fertilizer (kg.)**				
	N	124	136	155	138
	P_2O_5	60	68	72	67
	K_2O	60	68	72	67
8	Insecticide (lit)	1.3	1.95	2.15	1.8
9	fungicide (Kg)	1.12	1.5	1.9	1.51

Table 2: Per hectare cost of cultivation for brinjal (Figures in ₹)

Sr. No.	Particulars		Amount			
			Small	Medium	Large	Overall
1	Hired human labour	a. Male days	14700	18600	24000	19100
			(8.93)	(10.67)	(11.75)	(10.55)
		b. Female days	16400	19160	22000	19187
			(9.97)	(11.00)	(10.77)	(10.60)
	Total		31100	37760	46000	38287
			(18.90)	(21.67)	(22.51)	(21.15)
2	power tiller		0	0	5400	1800
			(0)	(0)	(2.64)	(0.99)
3	bullock labour		4500	3000	2200	3233
			(2.74)	(1.72)	(1.08)	(1.79)
4	Seeds		2100	2250	2400	2250
			(1.28)	(1.29)	(1.17)	(1.24)
5	Manures		2800	3600	4000	3467
			(1.70)	(2.07)	(1.96)	(1.91)
6	Fertilizers(kg)		5545	6252	6686	6161
			(3.37)	(3.59)	(3.27)	(3.40)
7	Irrigation charges		1060	1280	1400	1247
			(0.64)	(0.73)	(0.69)	(0.69)
8	Plant protection		824	1170	1380	1124
			(0.50)	(0.67)	(0.68)	(0.62)
	Input cost		47928	55312	69466	57569
			(29.13)	(31.74)	(34.00)	(31.80)
9	Int. on working capital @ 6 per cent for 6 month		1438	1659	2084	1727
			(0.87)	(0.95)	(1.02)	(0.95)
10	Depreciation on farm implements		3208	4340	5865	4471
			(1.95)	(2.49)	(2.87)	(2.47)
11	Land revenue and taxes		41	61	80	60
			(0.02)	(0.03)	(0.04)	(0.03)
	Cost "A"		52615	61371	77495	63827
			(31.98)	(35.22)	(37.93)	(35.26)

			62960	67440	82420	70940
12	Rental value of land(1/6 th of gross value-land revenue)		(38.27)	(38.70)	(40.34)	(39.18)
13	Int. on fixed capital		4126	4822	6517	5155
			(2.51)	(2.77)	(3.19)	(2.85)
	Cost "B"		119700	133633	166432	139922
			(72.75)	(76.69)	(81.45)	(77.29)
14	Family labour	a. Male	20940	17610	14550	17700
			(12.73)	(10.11)	(7.12)	(9.78)
		b. Female	19100	17480	16400	17660
			(11.61)	(10.03)	(8.03)	(9.75)
	Total		40040	35090	30950	35360
			(24.34)	(20.14)	(15.15)	(19.53)
15	supervision charges (10% of input cost)		4793	5531	6947	5757
			(2.91)	(3.17)	(3.40)	(3.18)
	Cost- "C"		164533	174254	204329	181039
			(100)	(100)	(100)	(100)

(Figures in the parentheses indicate percentages to the total cost)

Table 3: Per hectare profitability of brinjal cultivation (Figure in ₹)

Sr. No	Particulars	Small(N=24)	Medium(N=17)	Large(N=19)	Overall(N=60)
1	Yield (tonnes)	12.6	13.5	16.5	14.2
2	Gross returns (Rs)	378000	405000	495000	426000
3	Cost of cultivation (Rs)				
	Cost-A	52615	61371	77495	63827
	Cost-B	119700	133633	166432	139922
	Cost-C	164533	174254	204329	181039
4	Net returns at				
	Cost –A	325385	343629	417505	362173
	Cost-B	258300	271367	328568	286078
	Cost-C	213467	230746	290671	244961
5	Per quintal cost (Rs)	1694	1709	1762	1725
6	Benefit -cost ratio	2.30	2.32	2.42	2.35

Conclusion

The per hectare cost of brinjal cultivation indicate that, the maximum cost was incurred on human labour (40.68%) out of which cost incurred on hired labour was more than than family labour. The analysis of per hectare profitability of brinjal indicated that the brinjal cultivation was profitable enterprise at all the levels of cost, resulting benefit-cost ratio of 2.35.

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