

Research Paper



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COST OF CULTIVATION OF POTATO



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A B S T R A C T

A research study was conducted on 90 farmers of Deesa taluka in Banaskantha District of Gujarat state with the objective of calculating the cost of cultivation of potato. Purposive sampling technique was used to select the farmers. The requisite data was collected from them with the help of well-structured and pre-tested interview schedules by personally contacting the individual farmers. On an average, the total cost of cultivation per hectare on the basis of Cost-C₂ was Rs.59900. It was lowest (Rs.58526) for small farmers and highest (Rs.61209) for large farmers.

Introduction:

Potato is one of the most popular vegetables grown all over the world. Potato is a winter crop with very high yield potentiality as compared to other food crops. It is an efficient food producer and has the potential to become a supplementary staple food besides cereals in the country. It has been recognized as a wholesome food and the richest source of energy in most of the countries where it forms an important part of the human diet. Potatoes are grown in about 150 countries throughout the world and more than a billion people worldwide eat potato. Potato has contributed largely to national economy. Potato cultivation in the state of Gujarat is largely concentrated in North and middle Gujarat comprising of Banaskantha, Mehsana, Kheda, Sabarkantha, Anand and Gandhinagar districts. Among these six districts, Banaskantha is having the first rank in terms of area and production. In Banaskantha district, potato was grown in 154000 hectares with production of 4606000 tonnes during 2005-2006. Thus, the present study was conducted with the objective of calculating the cost

of cultivation in Banaskantha district of Gujarat state.

Methodology:

In order to achieve the objectives of the present study, the purposive sampling technique was adopted for this purpose. Potato cultivation in the state of Gujarat is largely concentrated in Banaskantha, Mehsana, Kheda, Sabarkantha and other districts among which Banaskantha is having the first rank in terms of area and production. Hence, Banaskantha district was selected purposively for the study. From Banaskantha district, Deesa taluka was purposively selected for study due to more area under potato cultivation than any other taluka of the district. From the selected Deesa taluka, five villages, having larger area under potato cultivation, were purposively selected. From these selected five villages, 18 farmers were purposively selected from each village. For that, a list of farmers from the selected villages was prepared and six farmers were selected purposively category wise into small (up to 2.0 ha), medium (2.01 to 4.0 ha) and large (above 4.0 ha) farmers. The final sample that emerged thus comprised of 90 farmers spread equally

over the selected area. Personal interview technique was used for collection of data.

Results and Discussion:

The data regarding cost of cultivation for different categories of potato growers was collected and analyzed for the agricultural year 2006-07. The cost of cultivation studies in an area not only furnishes information on the relative profitability of the enterprises but also serves as a guide for better choice and combinations of farm input for maximizing returns. The cost of cultivation of potato mainly depends on

the major inputs used, techniques of cultivation, yield and prices for major inputs. Profit would depend on sale price and yield obtained. Generally farmers do not take into account their fixed capital, depreciation cost of own fixed implements and machinery etc. used on the farms. They generally count Cost-A only which includes operational cost only. But in the scientific study like this, the Cost-A, Cost-B, Cost-C₁ and Cost-C₂ were estimated. Average size of farms and family size of selected farmers in Banaskantha district is presented in Table 1.

Table 1 : Average size of farms and family size of selected farmers in Banaskantha district

Category	Average number of family members	Operational size of farms(ha.)	Average area under potato crop(ha.)	Per head area under potato crop(ha.)	Percent area to total area under potato crop
Small	5.37	1.62	0.68	0.13	41.98
Medium	4.42	2.39	1.41	0.32	58.99
Large	5.95	4.72	2.11	0.35	44.70
Average	5.25	2.91	1.44	0.27	49.48

The table indicates that the small, medium and large farmers have an average of 5.37, 4.42 and 5.95 family members, respectively. The average size of land holding of potato growers was estimated about 2.91 hectares. The small, medium and large farmers were having 1.62, 2.39 and 4.72 hectares of operational size of farms, respectively. On an average 49.48 per cent of the cultivated land with a farmer was under potato crop. The average area under potato cultivation increased with the increase in the size of farm. The average area under potato cultivation per farmer was estimated to be about 1.44 hectares. Per head area under potato cultivation ranged from 0.13 to 0.35 hectare with an average of 0.27 hectare.

It is well known that potato being labour intensive crop requires relatively higher investment than other field crops. Factor-wise distribution of total cost per hectare is exhibited in the table 2. The table reveals that on an average, total cost per hectare for potato crop was Rs.59900. On reviewing the size-wise total cost per hectare, it can be seen that it was highest (Rs.61209) for large farmers followed by medium farmers (Rs.59964) and small farmers (Rs.58526). On an average, among the total cost per hectare, it was observed that seeds covered the lion's share of 38.17 per cent

(Rs.22863) of the total cost. The share of seed cost in all the farm categories was higher due to higher price of potato seed, but in the studied area during the year the price of seed was high ranging from Rs.900 to Rs.1200 per quintal. Whereas, fertilizer accounted for 13.86 per cent (Rs.8303) of the total cost, followed by cost of irrigation (7.69 %) and rental value of own land (6.92 %). Among the different categories of farmers, it was observed that seeds ranked the prime place in the range of Rs.22325 for small farmers to Rs.23370 for medium farmers. Fertilizer cost was the highest (Rs.8900) for large farmers and the lowest (Rs.7910) for medium farmers while the irrigation cost was high (8.33 %) for medium farmers and low (6.63 %) for small farmers. The rental value of owned land varied in the range of Rs.4250 for medium farmers to Rs.4027 for small farmers.

Conclusion:

The average area under potato crop for small, medium, large farmers was 1.44 hectare and it was increased with increase in size of farms. The per head area under potato crop was highest for large farmers (0.35 ha.) followed by medium farmers (0.32 ha.) and small farmers (0.13 ha.). Per hectare average total cost (Cost-C₂) of potato was Rs.59900. It was highest

(Rs.61209) for large farmers followed by medium farmers (Rs.59964) and small farmers (Rs.58526). Further, the break up of total cost for selected farmers indicated that seeds accounted for the lion's share of 38.17 per cent, followed by fertilizer (13.86 %), irrigation charges (7.69 %) and rental value of owned land (6.92 %). Cost-A shared about 80.19 per cent of total cost for selected

potato growers. It varied from 79.40 per cent for small farmers to about 80.00 per cent for medium and large farmers. On an average, the total cost of cultivation per hectare on the basis of Cost-C₂ was Rs.59900. It ranged from Rs.58526 for small farmers to Rs.61209 for large farmers.

Table 2 : Factor wise distribution of total cost of potato crop per hectare in Banaskantha district of Gujarat state for the year 2006-2007

Particulars	Small farmers			Medium farmers			Large farmers			Average farmers		
	Physical Unit	Value (Rs.)	Per cent to total cost	Physical Unit	Value (Rs.)	Per cent to total cost	Physical Unit	Value (Rs.)	Per cent to total cost	Physical Unit	Value (Rs.)	Per cent to total cost
Hired labour	40.25	2214	3.78	51.20	2816	4.69	58.55	3220	5.26	50.00	2750	4.59
Bullock labour	7.50	1200	2.05	7.20	1152	1.02	6.75	1080	1.76	7.15	1144	1.91
Seed (kg)	2350	22325	38.15	2460	23370	38.98	2410	22895	37.40	2407	22863	38.17
Manure	8.92	3123	5.34	7.01	2454	4.09	8.15	2854	4.66	8.03	2810	4.69
Fertilizer (kg)	N	275	8100	265	7910	13.19	260	8900	14.54	267	8303	13.86
	P	150		143			163			152		
	K	237		231			281			250		
Irrigation		3881	6.63		4995	8.33		4946	8.09		4608	7.69
Insecticides		500	0.85		415	0.69		405	0.67		441	0.74
Miscellaneous cost		2830	4.84		2690	4.48		2535	4.14		2685	4.48
Depreciation		515	0.88		480	0.80		494	0.80		496	0.83
Interest on working capital		1786	3.05		2017	3.36		1990	3.25		1931	3.22
Cost : A		46474			48299			49319			48031	
Rental value of own land		4027	6.88		4250	7.08		4160	6.80		4146	6.92
Interest on fixed capital (Excluding land revenue)		415	0.70		380	0.64		456	0.75		417	0.70
Cost : B		50916			52929			53935			52594	
Family labour	41.09	2290	3.92	28.8	1584	2.65	31.1	1710	2.79	33.66	1861	3.11
Cost : C ₁		53206			54513			55645			54455	
10 % of cost C ₁		5320	9.09		5451	9.10		5564	9.09		5445	9.09
Cost : C ₂		58526	100		59964	100		61209	100		59900	

REFERENCE

▪ Singh and Gupta (1983) studied the cultivation of potato in Farrukhabad in Uttar Pradesh. They found that the total cost of cultivation per quintal was worked out to be Rs.44.76 during 1980-81 as against Rs.26.71 during 1970-71. ▪ Gupta et al. (1984) studied the cost of cultivation of potato in Farrukhabad in Uttar Pradesh. They found that the cost of cultivation of potato varied between Rs.10542 to Rs.11683 per hectare for various sizes of farms. They found cost of production for different farm categories (small, marginal, medium and large) of farmers varied between Rs.45.65 to Rs.54.95 per quintal. The average cost production was Rs.50.24 per quintal. ▪ Verma (1996) indicated that the overall total cost for the cultivation of potato was Rs.18625.10 per hectare. Among the inputs, cost of seed contributed the highest percentage of 35.58 followed by hired human labour (23.09 %), manure and fertilizers (17.13 %), bullock labour and tractors power (6.76 %). ▪ Sinha (1998) indicated that average cost of cultivation of potato was about Rs.22877 per ha. Among the inputs, cost of seed (35.42 %) followed by manures (18.42 %), fertilizers (7.50 %) and human labour (6.42 %) accounted higher in the total cost. Average gross return per ha was Rs.54600 while the net return per ha was Rs.31723/-. The return was about 239 per cent of the total cost of cultivation. Potato cultivation was acknowledged to be the most remunerative crop enterprise in the Bihar district.