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Economic analysis of Brinjal crop (Solanum melongena L.) in Narayanpur block, of Mirzapur district Uttar pradesh

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Introduction

India, which is endowed with agro climate condition, rich soil and plentiful water makes it suitable for growing of vegetables. More than 50 varieties of vegetables crops are grown in India. India is the world's largest producer of vegetables. The range of vegetable crops and their production system is quite large. In fact vegetable production could be increased more profitable by the farmers. Keeping in view the role of vegetables in health security to the people. The Union Government has fixed ambitious production targets. India is a fascinating country in its vegetables wealth where almost all vegetables that are consumable to human beings are grown. Quite a considerable number of vegetables crops have now been existent in this country as familiar of the man – made plantations but these apart a large number are still there which are not cropped in organized plantations. Out of the large number of vegetable crops only a few that are grown in agro climate conditions.

Indian agriculture has witnessed a remarkable progress during the past three decades. A - part from high yielding varieties and modern agriculture technologies, a number of agriculture inputs have played a key role in achieving the phenomenal increase in agriculture production. Vegetable production is mostly confined to the metropolitan cities and towns. So the production cost is higher due to the high cost of land, lobour and other inputs. Till now transportation was limiting factor for export of fresh vegetables but improved road links have partly solved the problem. However the cool chain from farm to delivery point through refrigerated transport (as for fish milk or grape) and cold storage has not been established fully for vegetables. Increased production and improved handling of vegetables have great potential to enhance the nutrition of the rural and urban poor as well as to increase their income and provide greater employment opportunities.

Methodology

In present study is related to the price spread of seasonal vegetables in Bharpur and Chera-ke- pura village in Narayanpur block of Mirzapur District Uttarpradesh. This study was undertaken with an objective of studying the cost of production of vegetable crops.

Sampling design and selection of samples :

The present study the stratified sampling procedure was adopted for selection of sample. In the first stage block was selected purposively. In the second stage selection of the village and in the third stage vegetable growers were selected randomly. The selection of market was done purposively :

1st stage :

Keeping in view the importance and operational convenience, Narayanpur block was purposively selected for the study it occupies a prestigious place in vegetables cultivation in the Mirzapur District. Narayanpur block is situated in the northeastern part of Mirzapur district and block office comes under Chunar tehsil. Narayanpur is one of the major vegetable growing block in Mirzapur district.

2nd Stage :

A complete list of all vegetables growing village was obtained from the Narayanpur block development office. There were 214 village containing in the block. Total numbers of villages were divided into two categories on the basis of vegetable growing village and non – vegetable growing villages, than vegetables growing village were arranged on the ascending order on the basis of area cultivated under different vegetable crops. Thus the total of two village were selected randomly for the present study i.e one near to pacca road another at least 3 km away form pucca

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road. The name of selected villages was Bharpur and Chera-ke-pura .

3rd Stage : - A complete list of vegetable growers in each selected village was preferred through personal interview and the vegetables growers in the selected village were categorized into three different size groups on the basis of cultivated area. First size group having area under cultivation is less than one hectare. Second size group having area under cultivation more than one hectare and less than two hectare and Third size group having area under cultivation more than two hectares under vegetable crops as mentioned in table no. 1

Table 1: Distributions of sample growers under different size of farms

S. No.	Name of village	1st size group (small)	2nd size group (Medium)	3rd size group (Large)
1.	Bharpur	09	06	05
2.	Chera-ke-pura	10	06	04
	Total cover field	19	12	09

Results and Discussion

The cost of cultivation per hectare was calculated for the three different size of farms the table 2 shows that the cost of cultivation of Brinjal was Rs. 19510.48. The cost of cultivation of Brinjal varied on different size of farm. In first size group found to be Rs. 19967.93, in second size group was Rs. 19241.75 and third size group was Rs.18903.04. The cost of cultivation was higher in first size group as compared to second and third size groups.

The contribution of family labour for the production of Brinjal per hectare is around 11.59% and it varied on different size of holdings. First size group used more number of family labours. It is 14.43% as compared to second (11.14%) and third (6.08%) size groups.

The contribution of hired labour for the production of Brinjal per hectare is around 10.20% and it varied o different size of farms. The percentage was high in third size group 14.17%, followed by second size group 11.71% and first size group 7.49%.

In the production of Brinjal, contribution of bullock labour was 3.68% and it varied on different size of holdings. First size group(4.63%), second size group (3.72%) and third size group (1.53%) of the total cost of cultivation.

In the production of Brinjal, contribution of tractor operation was 4.28% and it varied on different size of holdings. The percentage of tractor operation was high in third size group5.93%, followed by second size group 3.93% and first size group 3.76%.

In the production of growing Brinjal, the average quantity of seed cost required 3.77% and it varied on different size of holdings. The percentage of seed cost was high in second size group (4.25%) followed by third size group (4.16%) and then in first size group (3.30%).

The cost of manure and fertilizer was Rs.3552.16 and it varied on different size of holdings. They're by first size group (Rs.3511.61) second size group (Rs.3568.34) and third size group was (Rs.3616.25).

The average cost of plant protection was Rs.2100.35. But it varied on different size of holdings. The percentage of plant protection was approximately same. In first size group (Rs.2124.67) followed by second size group (Rs.2076.25) and third size group was (Rs.2043.13).

The cost of irrigation was Rs. 956.8. But it varied on different size of holdings. Thus first size group was Rs. 957.88 followed by second size group Rs.951.09 and third size group was found Rs.962.18.

Interest on working capital was Rs. 435.52. But it varied on different size of holdings. Thus third size group of Rs. 459.88 was followed by second size group Rs. 445.42 and then first size group Rs. 417.72 of the total cost of cultivation.

Depreciation of fixed capital for the production of Brinjal per hectare was 2.91%. But it varied on different size of holdings. Thus third size group was 4.31% followed by second size group 3.35% and then first size group of 2.01%.

Rental value of own land was 20.21%. The percentage of rental value of own land was approximately same as in third size group 20.41% and then followed by second size group 20.17% and first size group 20.15%.

Interest of fixed capital was 7.12% but it varied on different size of holdings. As in first size group 9.11%, second size group 4.84% and third size group was 5.68%.

Gross return was Rs.72550.03 but it varied on different size of farms. As in first size group it was Rs. 65738.42, in second size group Rs.73774.59 and for third size group it was Rs. 85297.38. The net return

Table 2: Cost of cultivation per hectare

(Value in Rs. Per hectare)

S.No. Particulars	Different size of farms			Sample average
	1st size group	2nd size group	3rd size group	
1. Human labour				
A. Family labour	2862.67(14.34)	2143.67(11.14)	1150.00(6.08)	2261.63(11.59)
B. Hired labour	1496.14(7.49)	2252.59(11.71)	2678.80(14.17)	1989.17(10.20)
2. Bullock labour	923.75(4.63)	714.84(3.72)	290.00(1.53)	718.48(3.68)
3. Tractor	751.28(3.76)	755.42(3.76)	1121.42(5.93)	835.74(4.28)
4. Seed	659.74(3.30)	817.00(4.25)	785.50(4.16)	735.21(3.77)
5. Manure & fertilizer	3511.61(17.59)	3568.34(18.54)	3616.25(19.13)	3552.16(18.21)
6. Plant protection	2142.67(10.73)	2076.25(10.79)	2043.13(10.81)	2100.35(10.77)
7. Irrigation	957.88(4.80)	951.09(4.94)	962.18(5.09)	956.81(4.90)
8. Interest on working capital	417.72(2.0)	445.42(2.31)	459.88(2.43)	435.52(2.23)
9. Land revenue paid to Govt.	48.42	(0.26)	50.31(0.27)	25.90(0.13)
10. Depreciation on fixed capital	401.37(2.01)	645.50(3.35)	814.48(4.31)	567.56(2.91)
11. Rental value of own land	4024.00(20.15)	3881.67(20.17)	3857.50(20.41)	3943.84(20.21)
12. Interest on fixed capital	1819.10(9.11)	941.37(4.84)	1073.88(5.68)	1388.11(7.12)
13. Total cost	19967.75(100.00)	19241.75(100.00)	18903.04(100.00)	19510.48(100.00)
14. Production (in quintal)				
A Main product	197.11	206.84	219.38	205.04
15. Gross Return	65738.42	73774.59	85297.38	72550.03
16. Net Return	45770.49	54532.84	66394.34	53039.56
17. Cost of production /Qtl.	101.30	93.03	86.17	95.42

Fig. In parenthesis indicate percentage

was Rs. 53039.56 but it varied on different size of holdings. As on first size group Rs.45770.49, second size group Rs.54532.84 and third size group it was Rs.66394.34.

Cost of production per quintal was Rs. 95.42. but it was lower in third size group Rs.86.17 followed by second size group Rs. 93.03 and first size group Rs. it was 101.30.

Per quintal cost of production

The cost of production in brinjal for different size of farms was worked out and was presented in Table 3.

Table 3 Shows that in production of brinjal yield per hectare was 205.04 quintals. It varied on different size of farms viz. First size group 197.11 qtls, second size group 206.84 qtls and third size group was 219.38 qtls. The yield per hectare was highest in third size group because of reason that farmers of this category adopted more intensive cultivation, more used of intensive farm production.

Table 3: Cost of production of brinjal per quintal on different size of farms

S.No. No.	Different size of farms	Cost of cultivation	Yield (q/ha)	Cost of production/q
1.	Ist size group	19967.93	197.11	101.30
2.	IInd size group	19241.75	206.84	93.03
3.	IIIrd size group	18903.04	219.38	86.17
	Sample average	19510.48	205.04	95.42

In the production of brinjal the cost of production per quintals overall came to Rs. 95.42. It varies in different size of farms as in first size group Rs. 101.30, second size group it was Rs.93.03 and in third size group it came to Rs. 86.17. The cost of production per quintals was found to be lower in third size group because farmers of this category adopted more intensive cultivation to get more productin.

Table 4: Measures of farm profit in Brinjal per hectare on different size of farms.

(Value in Rs.)

S.No.	Particulars(Cost Items)	Different size of farms			Sample Avg.
		1st size group	2nd size group	3rd size group	(Overall)
1.	Gross Income	65738.42	73774.59	85297.38	72550.03
2.	Net Income	45770.49	54532.84	66394.34	53039.56
3.	Farm Business Incoem	54476.26	61499.55	72475.72	60633.12
4.	Farm investment income	51613.59	59355.88	71325.72	58371.50
5.	Family labour income	48633.16	56676.51	67544.34	55301.18
6.	Input-Output Ration	1:3.29	1:3.83	1:4.51	1:3.73

Measures of farm profit

Distinct measures of farm profit in Brinjal per hectare for different size of farms were worked out as presented by table no. 4

Table 4 show that in production of Brinjal, gross income was Rs.72550.03 in the first size group Rs.65738.42, in second size group and Rs.73774.59 in third size group it was Rs.85297.38. The gross income was more in third size group as compared to first and second size groups.

In the production of Brinjal the net income overall was Rs.53039.56. It varies in different size of farms. Thus in first size group it came to Rs. 45770.49, second size group it came to Rs.54532.84 and in third size it came to was Rs. 66394.34. Thus the income was highest in third size group as compare first and second size groups.

Farm business income overall was Rs.60633.12, it varies in different size of farms as in First size group it came to Rs.54476.26, second size group it came to Rs.61499.55 and in third size group it came to Rs.72475.72.

Farm investment income overall was Rs. 58371.50, it varies in different of farms. Like in first size group it came to Rs. 51613.59, second size group it came to Rs.59355.88 and third size group it came to Rs71325.72.

Family labour income overall was Rs.5530.18, it varies in different size of farms. Like in first size group it was Rs. 48633.16, second size group it was Rs.56676.51 and third size group it was Rs.67544.34. The return per rupee of investment was in all farm size groups. Thus general production was small profitable in the area.

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