

Economic Analysis of Greengram Production in Marathwada Region of Maharashtra

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ABSTRACT

The present was undertaken to study the input use, cost structure and profitability of greengram production in Marathwada region of Maharashtra. For these purpose two districts namely Parbhani and Nanded was purposively selected. Two tehsils was selected from each district on the basis of highest area under greengram and three villages from each selected tehsil were purposively selected. From each selected village ten greengram growers were randomly selected. Thus from two districts 120 greengram growers were selected for present study. The primary data was collected with the help of pretested schedule. The data pertains for the year of 2015-16. The data then tabulated and analyzed by using standard cost concept i.e Cost-A, Cost-B and Cost-C. The study revealed that by using the mentioned physical inputs the main produce (grain) was occurred about 7.15 quintals and by-Produce (straw) was 1.83 quintals. It is observed from the table that Cost-C was Rs. 38025.55 which the share of Cost-B was 93.08 per cent followed by Cost-A was 69.64 per cent. Among the all items of expenditure, proportionate of hired human labour was 23.24 per cent followed by rental value of land (21.78 per cent), machinery charges (12.20 per cent) and bullock labour (11.92 per cent). Gross returns were Rs. 50537.87 in which main produce was Rs. 50266.72 and by-Produce Rs. 271.15. It is clear from the table that Net profit from greengram crop was found to be Rs. 12511.32. The Output-Input ratio was 1.33.

Key words Cost, input, economic, analysis, greengram, production, returns

Pulses are the most important protein in the diet of the majority of the peoples in India. It contains about twice as much protein as cereals. It contains amino acid lysine, which is generally deficit in food grains. Pulses bran is also used as quality feed for animals. Apart from these, the ability to fix Nitrogen and addition of organic matter to the soil are important factors in maintaining soil fertility. Pulses fit well in the existing cropping systems, due to its short duration, low input, minimum care required and drought tolerant nature.

Greengram or Mung having botanical name *Vigna radiata* which belongs to family Fabaceae or leguminosae, native to the Indian subcontinent is one of the most wholesome and important among pulses in India. It is widely cultivated throughout the Asia, including India, Pakistan, Bangladesh, Sri Lanka and Thailand. In India, Rajasthan (30.81 %), Maharashtra (19.51 %), Karnataka

(15.35 %), Andhra Pradesh (12.79 %), Orissa (7.41 %), Tamil Nadu (4.97 %) and Uttar Pradesh (2.09 %) are the major states in greengram production. (Source: www.agropedia.com). Its popularity stems not just from its medicinal and nutritional properties, but also from its adaptability to drought conditions. The nitrogen fixing bacteria in the plant's root help to replenish the nitrogen content of the soil, which makes it a valuable inter-crop in rice and sugar cane cultivation. The seeds are rich in calcium, phosphorous, magnesium, potassium, folate and other B Vitamins. They also contain appreciable amount of Vitamin C. Chinese medicine uses greengram as a remedy for Oedema, fever, headache and generalized anxiety, and as a diuretic. It is also a folk remedy for arsenic poisoning and other mineral toxins.

In India during 2014-15 area under greengram was 23.38 lakh hectares, production was 9.58 lakh tonnes and productivity was 410 kg/ha (Source: www.agricoop.com). In Maharashtra agriculture sector contributes major share in their income and have great impact on the increase or decrease of per capital income. In Maharashtra during 2014-15 area under greengram was 3.152 lakh hectares with annual production of 0.843 lakh tonnes with an average productivity of 268 kg/ha. In Marathwada region during 2014-15 area under greengram was 1.576 lakh hectares with an annual production of 0.298 lakh tonnes with an average productivity of 185 kg/ ha. (Source: www.mahaagri.gov.in)

To bridge the gap between demand and supply of pulses, there is an urgent need to raise the production and productivity of pulses in Maharashtra. The production can be increased either by bringing more area under cultivation or by increasing yield through adaption of improved pulse production technology or by combining both. It has often been argued that market prices of pulses are very high and these should provide enough incentives to the farmers for increasing the production of these crops. For this reason, the present study was undertaken to study the input use and cost structure in greengram production and to estimate the profitability in greengram production.

MATERIALS AND METHOD

For the present study two districts namely Parbhani and Nanded were purposively selected from Marathwada region. From each district two tehsils were selected on the basis of highest area under greengram cultivation. From each of the tehsil, three villages were selected purposely. Ten greengram growers were randomly selected from each village. In this way from two districts, one hundred twenty greengram growers were selected for the present study. The data was collected from cultivars with the help of pretested schedule through personal interview method. The

Table 1. Per hectare physical inputs and output of greengram growers

Sr.No.	Particulars	Unit	Quantity
Input			
1	Hired Human Labour	manday	38.21
2	Bullock Labour	pairday	9.45
3	Machine	hour	7.91
4	Seed	kg	18.58
5	Manure	q	13.92
6	Fertilizer		
i.	N	kg	21.81
ii.	P	kg	41.31
iii.	K	kg	10.05
7	Plant Protection	L	1.04
8	Family Human Labour	manday	11.38
Output			
9	Main produce (Grain)	q	7.15
10	By produce (Straw)	q	1.83

data pertained for the year 2015-16.

The collected data were edited, summarized, tabulated and analyzed to fulfill the objectives of the study. Tabular method of analysis using different statistical tools was used in presenting the results of the study by using standard cost concept i.e. Cost-A, Cost-B and Cost-C. Profitability of greengram production was examined on the basis of gross returns, net profit and Cost-benefit ratio analysis.

RESULTS AND DISCUSSIONS

Per hectare physical inputs and output of greengram

Per hectare physical inputs and output of greengram were calculated and are presented in Table-1. Results revealed that use of hired human labour and the family human labour was 38.21 man days and 11.38 man days respectively. Use of bullock labour was 9.45 pair days while the use of machine labour was 7.91 hours. In case of fertilizers, use of Phosphorus was 41.31 kg followed by 21.81 kg of Nitrogen then 10.05 kg of Potassium. 13.92 quintals of manure was used while 1.04 litres of plant protection was used to control pest and diseases on greengram. By using the mentioned physical inputs the main produce (grain) was occurred about 7.15 quintals and by-Produce (straw) was 1.83 quintals.

Per hectare costs and returns of greengram

Per hectare costs and returns of greengram were calculated and are presented in Table-2. It is observed from the table that Cost-C was Rs. 38025.55 which the share of Cost-B was 93.08 per cent followed by Cost-A was 69.64 per cent. Among the all items of expenditure, proportionate of hired human labour was 23.24 per cent followed by rental value of land (21.78 per cent), machinery charges (12.20 per cent), bullock labour (11.92 per cent), family human labour

Table 2. Per hectare cost and returns of greengram growers

Sr. No.	Particulars	Amount	Per cent
Input			
1	Hired human labour	8836.06	23.24
2	Bullock labour	4532.03	11.92
3	Machine	4637.24	12.20
4	Seed	2314.51	6.09
5	Manure	1510.32	3.97
6	Fertilizer		
i.	N	284.40	0.75
ii.	P	1613.57	4.24
iii.	K	278.08	0.73
7	Plant protection	331.97	0.87
8	Land Revenue	141.50	0.37
9	Incidental charges	304.01	0.80
10	Interest on Working Capital @13 per cent	1073.96	2.82
11	Depreciation on Capital Asset @ per cent	622.04	1.64
12	Cost A	26479.69	69.64
13	Rental Value of Land	8281.48	21.78
14	Interest on Fixed Capital @11 per cent	632.75	1.66
15	Cost B	35393.92	93.08
16	Family Human Labour	2631.63	6.92
17	Cost C	38025.55	100.00

(Figures in per cent indicates percentage to the Cost-C)

(6.92 per cent), seed (6.09 per cent) and fertilizers (N+P+K = 5.72 per cent). Expenditure on Manure (3.97 per cent) plant protection (0.87 per cent), land revenue (0.37 per cent), incidental charges (0.80 per cent), interest on working capital (2.82 per cent), depreciation on capital assets (1.64 per cent) and interest on fixed capital (1.66 per cent) have less than 5 per cent proportionate expenditure hence these considered minor items of expenditure.

Per hectare profitability in greengram

Per hectare profitability in greengram production was calculated and is presented in Table-3. It was cleared from the table the main produce was 7.15 quintals while the by-Produce was 1.83 quintals. Gross returns were Rs. 50537.87 in which main produce was main produce was Rs. 50266.72 and by-Produce Rs. 271.15. It is clear from the table that Net profit from greengram crop was found to be Rs. 12511.32. The farm business income was calculated by subtracting Cost-A from Gross returns and which was found to be Rs. 24058.18 likewise family labour income was Rs. 15143.95. The Output-Input ratio was 1.33. Per quintal cost of production of greengram was Rs. 5280.34.

CONCLUSION

Thus, it is evident from the forgoing discussion that

Table 3. Per hectare profitability in greengram production

Sr. No.	Particulars	Unit	Quantity	Amount (Rs)
1	Return from main produce	q	7.15	50266.72
2	Return from byProduce	q	1.83	271.15
3	Gross return			50537.87
4	Cost-A			26479.69
5	Cost-B			35393.92
6	Cost-C			38025.55
7	Farm Business Income (Gross returns minus Cost-A)			24058.18
8	Family Labour Income (Gross returns minus Cost-B)			15143.95
9	Net profit (Gross returns minus Cost-C)			12512.32
10	Output-Input ratio (Gross returns divided by Cost-C)			1.33
11	Per quintal cost of production (Cost-C minus value of byProduce and dividing through by quantity of main produce)			5280.34

Per hectare total cost of greengram i.e. cost-C was Rs 38025.55 in which contribution of cost-A was Rs 26479.69 and cost-B was Rs 35393.92 respectively. The profit in cultivation of greengram at farm business income, family labour income and net profit was Rs 24058.18, Rs 15143.95

and Rs 12512.32 respectively. The output-input ratio of greengram was 1.33 which indicates that greengram is a profitable crop.

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