

Cost, Returns and Profitability of Groundnut (*Arachishypogaeal.*) Cultivation in Raigad District of Konkan Region [M.S.]

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Abstract: The study was conducted by personal interview of sample cultivators with specially designed schedule. For this study 120 groundnut cultivators were selected randomly from two tahsils viz., Mahad and Poladpur of Raigad district. The farmers were grouped into small, medium, large group and at overall level. The per hectare cost of cultivation of groundnut at overall level worked out to be Rs. 85855.39 whereas it was Rs. 85549.93, Rs. 86013.96 and Rs. 88010.68 in small, medium and large group, respectively. At the overall level, out of the total cost of cultivation, cost 'A' and cost 'B' shared 44.37 per cent and 66.40 per cent respectively. The per hectare gross returns in small, medium and large group was Rs. 101858.30, Rs. 106925.10 and Rs. 100218.40 respectively while it was Rs. 102743.00 at overall level. . The cost per quintal worked out to be Rs. 4170.66, Rs. 3990.44 and Rs. 4375.50 in case of small, medium and large groups respectively, while it was Rs. 4152.76 at overall level. The benefit cost ratio was 1.19 for small group, 1.24 for medium group and 1.14 for large group, while it was 1.20 at overall level.

Keywords: Groundnut, Cost, Returns, Profitability.

INTRODUCTION

Groundnut (*Arachishypogaea* L.), is an important crop grown worldwide which is cultivated in more than 100 countries. Groundnut is considered as the world's fourth largest source of edible oil and third most important source of vegetable protein. It is also a major oilseed legume crop in India and meets about 30 per cent of the edible oil requirements in the country. Groundnut or peanut is one of the important oilseeds in the world today.

The major groundnut-producing countries of the world are India, China, Nigeria, Senegal, Sudan, Burma and the USA. Out of the total area of 18.9 million hectares and the total production of 17.8 million tons in the world, these countries account for 69 per cent of the area and 70 per cent of the production. Groundnut is a major oilseed crop in India accounting for 45 per cent of oilseed area and 55 per cent of oilseed production in the country. India has been producing groundnut since it was introduced in Asia in the 16th century.

The groundnut is generally distributed in the tropical, sub-tropical and warm temperate zones. The principal groundnut growing states in India are Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra, which accounts for more than 85 per cent of the Indian production as well as an area. The rest of the area and production is distributed mainly in the states of Rajasthan, Orissa, Uttar Pradesh and Madhya Pradesh. Since groundnut crop is taken in the study area, the knowledge of costs, returns and its profitability will be useful for the farmer. The findings of the study helps to increase the area under groundnut crop by knowing the profitability of crop.

MATERIAL AND METHODS

The maximum area under groundnut cultivation is concentrated in Raigad district of Konkan region therefore; Raigad district was selected purposively for the study, therefore Mahad and Poladpurtahsils

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from Raigad district were selected purposively on the basis of maximum area under groundnut cultivation as per secondary data obtained from office of the TAO (Taluka Agriculture Officer), Mahad and Poladpur. For the selection of villages, the list of villages, growing groundnut along with area is prepared by referring revenue records of both tahsils. Then five villages from each tahsils were selected randomly. From the selected villages, the lists of groundnut cultivators were obtained from the revenue records of the selected villages. From each selected villages, a sample of twelve (12) groundnut cultivators was selected randomly. Thus the final sample was consisted of 10 villages and 120 groundnut cultivators from both Mahad and Poladpurtahsils.

The data were collected by personal interview with using pre-tested schedules for groundnut cultivators. To study the effect of farm size on productivity and profitability of groundnut, the selected sample cultivators were classified according to their size of plot under groundnut crop. The grouping was done by calculating mean and standard deviation of the area under groundnut of the sample cultivators. Simple statistical tools such as arithmetic mean, average, percentage, ratios and frequency distribution were worked out. For working out cost of production, standard cost concepts *viz.*, cost-A, cost-B, cost-C were used.

Terms Used in the Study

1. Input cost

(i) Hired labour

The cost of hired labour was calculated by considering the actual wages paid by the selected farmers to the hired labour.

(ii). Family labour

It was calculated on the basis of wages paid for hired labour.

(iii) Other input

For purchased input like manures, fertilizers etc., actual purchase price was taken whereas, for home produced input the opportunity cost was considered.

(iv) Interest on working capital

It was worked out at the rate of 6 per cent annum on working capital for the crop period.

(v) Interest on fixed capital

It was worked out at the rate of 10 per cent per annum on fixed investment made on the farm for production of groundnut.

(vi) Rental value of land

Rental value of owned land was worked out as one sixth of the gross returns from groundnut crop whereas, for leased in land the actual rent was considered.

(vii) Depreciation on tools, implements and machinery

Generally, small hand tools implements, netting, and shading materials were used for groundnut cultivation. Therefore, considering the average life of these hand tools, implements, netting and shading material, the depreciation was worked out by using following formula.

$$\text{Annual depreciation} = \frac{\text{Original value} - \text{junk value}}{\text{Expected life (yrs.)}}$$

(viii) Irrigation charges

Actual irrigation charges paid by farmer were considered. Then proportionate charges for groundnut crop were considered.

(ix) Cost of cultivation per quintal

The per quintal cost of cultivation was computed by using following formula.

$$\text{Per quintal cost of cultivation} = \frac{\text{Total cost} - \text{Value of by product}}{\text{Total output (kg)}}$$

(x) Benefit-cost ratio (B:C ratio)

To judge the profitability of groundnut production B:C ratio was worked out with the help of following formula.

$$\text{Benefit-cost ratio} = \frac{\text{Total returns}}{\text{Total cost}}$$

(xi) Supervision charges

Supervision charges were worked out @ 10 per cent of input cost.

RESULTS AND DISCUSSION

Per Hectare Cost of Cultivation of Groundnut

The item-wise and group-wise per hectare cost of cultivation of groundnut was worked out and is presented in Table 1

It was observed from the Table 1 that, total cost of cultivation (cost 'C') of groundnut was worked out to be Rs. 85549.93, Rs. 86013.96 and Rs. 88010.68 in small, medium and large group respectively. At the overall level, it was worked out to Rs. 85855.39. This indicated that, the cost of cultivation of groundnut showed an increasing trend with respect to different size of farm.

In case of the small size group, out of the total cost of cultivation, share of cost-A was 42.81 per cent and that of cost-B, it was 64.13 per cent. The maximum cost was worked out to be for human labour (43.95%). The cost incurred on machine hrs. was 9.93 per cent (Rs. 8494.82) followed by seed 8.87 per cent (Rs. 7584.05) and fertilizers 4.16 per cent (Rs. 3554.91). The share of cost incurred on manures was about 1.74 per cent (Rs. 1487.71). The share of cost on bullock labour was 1.73 per cent (Rs. 1480.88). The irrigation charges accounted for 0.88 per cent (Rs. 752.94) to the total cost. The cost on depreciation of implements and machinery was 1.28 per cent (Rs. 1098.12). Interest on working capital accounted for 1.21 per cent (Rs. 1033.00). Interest on fixed capital was 1.47 per cent (Rs. 1256.07). Rental value of owned land was 19.84 per cent (Rs. 16976.38). Supervision charges were worked out to 4.02 per cent (Rs. 3443.35). The cost per quintal was worked out to be Rs. 4170.66.

On medium size group, out of the total cost of cultivation, share of cost-A was 44.45 per cent and that of cost-B, it was 67.04 per cent. The maximum cost was worked out to be for human labour (42.27%). The cost incurred on machine hrs. was 10.00 per cent (Rs. 8599.45) followed by seed 8.57 per cent (Rs. 7369.54) and fertilizers 4.46 per cent (Rs. 3839.74). The share of cost incurred on manures

was about 1.89 per cent (Rs. 1628.74) while share of cost on bullock labour was 1.79 per cent (Rs. 1537.84). The irrigation charges accounted for 0.89 per cent (Rs. 764.41) to the total cost. The cost on depreciation of implements and machinery was 1.63 per cent (Rs. 1405.62). Interest on working capital accounted for 1.24 per cent (Rs. 1070.87). Interest on fixed capital was 1.86 per cent (Rs. 1601.91). Rental value of owned land was 20.72 per cent (Rs. 17820.85). Supervision charges were worked out to 4.15 per cent (Rs. 3569.56). The cost per quintal was worked out to be Rs. 3990.44.

In case of large size group, out of the total cost of cultivation, share of cost-A was 44.91 per cent and that of cost-B, it was 66.71 per cent. The maximum cost was worked out to be for human labour (41.54%). The cost incurred on machine hrs. was 10.38 per cent (Rs. 9132.56) followed by seed 8.16 per cent (Rs. 7179.84) and fertilizers 4.35 per cent (Rs. 3824.42). The share of cost incurred on manures was about 2.00 per cent (Rs. 1760.45). while the share of cost on bullock labour was 1.89 per cent (Rs. 1660.51). The irrigation charges accounted for 0.85 per cent (Rs. 744.44) to the total cost. The cost on depreciation of implements and machinery was 2.49 per cent (Rs. 2191.03). Interest on working capital accounted for 1.23 per cent (Rs. 1085.47). Interest on fixed capital was 2.82 per cent (Rs. 2481.29). Rental value of owned land was 18.98 per cent (Rs. 16703.07). Supervision charges were worked out to 4.11 per cent (Rs. 3618.24). The cost per quintal was worked out to be Rs. 4375.50.

At the overall level, out of the total cost of cultivation, share of cost-A was 44.37 per cent and that of cost-B, it was 66.40 per cent. The maximum cost was worked out to be for total human labour (42.16%). The cost incurred on machine hrs. was 10.18 per cent (Rs. 8738.95) followed by seed 8.46 per cent (Rs. 7259.83) and fertilizers 4.37 per cent (Rs. 3754.39). The share of cost incurred on manures was about 1.92 per cent (Rs. 1650.20). while the cost on bullock labour was 1.83 per cent (Rs. 1568.51). The irrigation charges accounted for 0.88 per cent (Rs. 756.67) to the total cost. The cost on depreciation of implements and machinery was 1.83 per cent (Rs. 1572.93). Interest on working capital accounted for 1.24 per cent (Rs. 1061.88). Interest on fixed

Table 1
Per hectare cost of cultivation of groundnut (Figures in Rs.)

Sr. No.	Particulars	Small	Medium	Large	Overall
1.	Hired labour				
	(a) Male	87.78(0.10)	647.40(0.75)	683.06(0.78)	578.82(0.67)
	(b) Female	10264.95(12.00)	10607.59(12.33)	10198.32(11.59)	10314.12(12.01)
	Total	10352.73(12.10)	11254.98(13.09)	10881.38(12.36)	10892.94(12.69)
	(c) Bullock labour	1480.88(1.73)	1537.84(1.79)	1660.51(1.89)	1568.51(1.83)
	(d) Machine hrs.	8494.82(9.93)	8599.45(10.00)	9132.56(10.38)	8738.95(10.18)
2.	Seed	7584.05(8.87)	7369.54(8.57)	7179.84(8.16)	7259.83(8.46)
3.	Manures	1487.71(1.74)	1628.74(1.89)	1760.45(2.00)	1650.20(1.92)
4.	Fertilizers				
	(a) N	977.21(1.14)	992.62(1.15)	1113.25(1.26)	1014.74(1.18)
	(b) P ₂ O ₅	2145.03(2.51)	2393.92(2.78)	2196.22(2.50)	2279.04(2.65)
	(c) K ₂ O	432.67(0.51)	453.20(0.53)	514.95(0.59)	460.61(0.54)
5.	Plant protection chemicals	725.45(0.85)	700.92(0.81)	998.81(1.13)	774.52(0.90)
6.	Irrigation charges	752.94(0.88)	764.41(0.89)	744.44(0.85)	756.67(0.88)
	<i>Input cost</i>	34433.49(40.25)	35695.62(41.50)	36182.42(41.11)	35396.00(41.23)
7.	Land revenue and other cesses	62.74(0.07)	64.90(0.08)	67.02(0.08)	64.77(0.08)
8.	Depreciation on machinery and implements	1098.12(1.28)	1405.62(1.63)	2191.03(2.49)	1572.93(1.83)
9.	Interest on working capital @ 6 per cent of input cost for 6 months	1033.00(1.21)	1070.87(1.24)	1085.47(1.23)	1061.88(1.24)
	<i>Cost 'A'</i>	36627.35(42.81)	38237.01(44.45)	39525.94(44.91)	38095.58(44.37)
10.	Interest on fixed capital @ 10 per cent	1256.07(1.47)	1601.91(1.86)	2481.29(2.82)	1791.63(2.09)
11.	Rental value of owned land (1/6 th of the gross returns)	16976.38(19.84)	17820.85(20.72)	16703.07(18.98)	17123.83(19.94)
	<i>Cost 'B'</i>	54859.81(64.13)	57659.77(67.04)	58710.29(66.71)	57011.04(66.40)
12.	Family labour				
	(a) Male	21369.53(24.98)	17641.52(20.51)	16012.06(18.19)	17358.97(20.22)
	(b) Female	5877.24(6.87)	7143.11(8.30)	9670.08(10.99)	7945.78(9.25)
	<i>Total</i>	27246.77(31.85)	24784.63(28.81)	25682.14(29.18)	25304.75(29.47)
13.	Supervision charges	3443.35(4.02)	3569.56(4.15)	3618.24(4.11)	3539.60(4.12)
	<i>Cost 'C'</i>	85549.93(100.00)	86013.96(100.00)	88010.68(100.00)	85855.39(100.00)
14.	Per quintal cost (Rs.)	4170.66	3990.44	4375.50	4152.76
15.	Yield				
	(a) Main produce	97344.30	102755.10	96392.40	98697.00
	(b) By-produce	4514.00	4170.00	3826.00	4046.00
	<i>Total returns</i>	101858.30	106925.10	100218.40	102743.00

(Figures in the parentheses indicate percentage to cost 'C')

capital was 2.09 per cent (Rs. 1791.63). Rental value of owned land was 19.94 per cent (Rs. 17123.83). Supervision charges were worked out to 4.12 per cent (Rs. 3539.60). The cost per quintal was worked out to be Rs. 4152.76.

The analysis of per hectare cost in groundnut cultivation in all groups indicated that, there were no much difference in all the groups. The per cent share on each item of cost was more or less same in all groups. This was because there were no much differences in inputs utilization as well as productivity in all groups.

Per Hectare Profitability of Groundnut Production

The per hectare profitability of groundnut is worked out at different cost level i.e. at Cost-A, Cost-B and Cost-C. Per hectare profitability of groundnut cultivation is given in Table 2.

It was seen from the Table 2 that, the groundnut is profitable at all costs in all the groups. Per hectare gross returns in small, medium and large group was Rs. 101858.30, Rs. 106925.10 and Rs. 100218.40 respectively while it was Rs. 102743.00 at overall level.

It is observed from Table 2, the net returns at Cost-A were Rs. 65230.49, Rs. 68688.09 and Rs. 60692.46 in case of small, medium and large groups respectively, while it was Rs. 64647.42 at overall level. The net returns at Cost-B were Rs. 46998.49,

Rs. 49265.33 and Rs. 41508.11 in case of small, medium and large groups respectively, while it was Rs. 45731.96 at overall level. The net returns at Cost-C were Rs. 16308.37, Rs. 20911.14 and Rs. 12207.72 in case of small, medium and large groups respectively, while it was Rs. 16887.61 at overall level. The cost per quintal worked out to be Rs. 4170.66, Rs. 3990.44 and Rs. 4375.50 in case of small, medium and large groups respectively, while it was Rs. 4152.76 at overall level. The benefit cost ratio was 1.19 for small group, 1.24 for medium group and 1.14 for large group. While it was 1.20 at overall level. The analysis of profitability indicated that, groundnut cultivation of sample farms at all groups was profitable.

CONCLUSION

1. The per hectare labour utilized for groundnut cultivation was 180.49 labour days, out of which the proportion of family labour days was more (62.81%) than hired labour days (37.39%). Hence groundnut was found to be labour intensive crop in konkan region, providing proportionately high employment to family labour especially to female labour
2. Cost, returns and profitability at overall level was found Rs. 85855.39, Rs. 102743.00 and Rs. 16887.61 respectively so that groundnut cultivation in study area was profitable.

Table 2
Per hectare profitability of groundnut cultivation
(Figures in Rs.)

Sr. No.	Particulars	Small	Medium	Large	Overall
1.	Gross returns	101858.30	106925.10	100218.40	102743.00
2.	Costs				
	(a) Cost 'A'	36627.35	38237.01	39525.94	38095.58
	(b) Cost 'B'	54859.81	57659.77	58710.29	57011.04
	(c) Cost 'C'	85549.93	86013.96	88010.68	85855.39
3.	Net returns at				
	(a) Cost 'A' (farm business income)	65230.95	68688.09	60692.46	64647.42
	(b) Cost 'B' (family labour income)	46998.49	49265.33	41508.11	45731.96
	(c) Cost 'C' (net farm income)	16308.37	20911.14	12207.72	16887.61
4.	Per quintal cost (Rs.)	4170.66	3990.44	4375.50	4152.76
5.	Benefit-cost ratio	1.19	1.24	1.14	1.20

3. The productivity of groundnut was found more in medium size group (20.51q) was more as compared to small (19.43q) and large (19.24q) size group

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