



Economics of Kharif Groundnut in Nagpur district of Maharashtra

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ABSTRACT: Oilseeds are most important crop in Nagpur district. Economics of kharif groundnut in Nagpur district of Maharashtra was undertaken in two tahsils of Nagpur district viz., Saoner and Narkhed. From each tahsil two villages viz., Wakodi and Bhendala from Saoner, Khapa Gudhan and Jamgao from Narkhed were selected. From each village 10 farmers were selected. In total 40 farmers were selected for the study. The main aim of the study was to find out the cost required for cultivation of groundnut on per hectare basis. The standard cost concept i.e. cost A₁, cost A₂, cost B₁, cost B₂, cost C₁, cost C₂ and cost C₃ was used in present study. Per hectare cost of cultivation of groundnut at cost 'C₃' was found to ₹ 73698.70, ₹ 74480.89, ₹ 82957.27 and ₹ 83140.62 for small, medium, large and overall size group, respectively. Major components of cost at overall level were seed, machine charges and hired human labour.

Keywords: Standard Cost Concept, Cultivation, Cost of cultivation, Kharif groundnut, Components of cost.

INTRODUCTION

Oilseeds are one of the most important crops in the world. They occupy an important position in the agricultural economy. Their function in human diet and industrial application cannot be underestimated. The oil extracted from the oilseeds is an important part of human diet and is used as raw material for manufacturing of large number of items such as paints, varnishes, hydrogenated oil, soaps, perfumes and lubricants etc. Oilseed cake which is the residue after the oil is extracted from the oilseeds forms good quality concentrated feed for cattle. Many different types of oilseeds are grown over the world of these the major ones in terms of global production and consumption, are soybean, groundnut, rapeseed-mustard, sunflower, sesame, safflower and niger. These are mainly considered as edible oilseeds. Castor and linseeds are categorized as the non-edible oilseeds. The majority of oilseed meal consists of necessary amino acids which are beneficial to human health and wellbeing (Kurrey and Jain 2018).

Groundnut, (*Arachis hypogaea* L. family Fabaceae) or peanut, is commonly called the poor man's nut. Today it is an important oilseed and food crop. This plant is native to South America and has never been found uncultivated. The botanical name for groundnut, *Arachis hypogaea* is derived from two Greek words,

Arachis meaning a legume and *hypogaea* meaning below ground, referring to the formation of pods in the soil. Groundnut is an upright or prostrate annual plant. It is generally distributed in the tropical, sub-tropical and warm temperate zones. The plant grows up to the height of 30 cm to 50 cm (1.0 ft to 1.6 ft) (Kshama et al., 2021). It elongates rapidly and grows almost vertically. It may vary from few millimetres in diameter in annual species to 10 cm in perineal species. The leaves are opposite, pinnate with four leaflets (two opposite pairs; no terminal leaflet), each leaflet 1.0 cm to 7.0 cm long and 1.0 cm to 3.0 cm broad. The crop does best on well drained, light textured loose and friable soil with reasonably high calcium with a pH range of 5.5 to 7.0 and a moderate organic matter. The pods are grown under the soil and are also called as 'pegs' (Agrawal and Singh 2014).

Groundnut contains 567 kcal, 16 gm total carbohydrate, 9 gm dietary fiber, 4 gm sugar, 26 gm protein, 49 gm total fat, 7 gm saturated fat, 16 gm polyunsaturated fat, 24 gm mono saturated fat, sodium 18 mg, potassium 705 mg, vitamin B₁ 0.9 mg, vitamins B₂ 0.2 mg, niacin 17.60 mg, vitamin B₆ 0.5 mg, calcium 134 mg, iron 6.70 mg, magnesium 245 mg per 100 gm (www.ncbi.nlm.nih.gov, 2022). Groundnut has been described as nature's master piece of food values.

MATERIAL AND METHODS

1. Selection of Area- The present study was undertaken in Nagpur district of Vidarbha region. The district was selected purposively, where the area under cultivation of groundnut was concentrated.
2. Selection of Tahsil- The multistage sampling design was used. Out of fourteen tahsils in Nagpur district two tahsils were selected on the basis of potential area under groundnut.
3. Selection of Groundnut growers- From each village 10 farmers were selected.
4. Collection of Data- data was collected by personal interview method by using pre tested schedule.
5. Analysis of Data- To work out cost and returns standard cost concept was used.

(I) Cost concept-The standard cost concept i.e. cost A₁, cost A₂, cost B₁, cost B₂, cost C₁, cost C₂ and cost C₃ was used in present analysis.

Cost 'A₁'-All actual expenses in cash and kind incur in the production by the producer. The items covered in cost A₁ are costs on:

1. Value of hired human labour (HL)
2. Value of hired bullock labour (BL)
3. Value of owned bullock labour
4. Value of owned machine labour (ML)
5. Hired machinery charges
6. Value of seed (purchased)
7. Value of manures
8. Value of fertilizers
9. Irrigation charges
10. Value of insecticides and pesticides
11. Depreciation on farm machinery, implements, equipment's, farm buildings, irrigation structure, etc.
12. Land revenue, ceases and other taxes
13. Interest on working capital and
14. Miscellaneous expenses

Measurement and evaluation of different cost 'A₁' components

Hired human labour. It includes hired human labour used on the farm. The value of hired human labour was evaluated at the hiring wage rates prevailing in the locality from time to time.

Bullock labour. Hired and owned bullock labour cost was estimated at actual rate paid for hiring of bullock labour in the local market from time to time.

Machine labour. Machine labour cost in case of owned machine was evaluated as per the hired charges prevailed in the village and in case of hired machine was accounted as per the price paid by cultivator.

Seed. The actual cost paid for purchasing of seed from the market was taken into account for evaluation. Seed produced at farm valued at the prevailing rates in the market.

Manures. The cost of farm yard manure produced on the own farm was estimated at the prevailing rates in the village. In case of purchased farm yard manure, the actual price paid was taken into account.

Fertilizers. Fertilizers in the form of Urea, DAP and MOP were used and the actual cost incurred on the purchase of fertilizers was taken into account. Quantity of nitrogen, phosphorus and potash was calculated in

order to determine the actual expenditure on nitrogen, phosphorus and potash fertilizers.

Plant protection. This included the actual cost incurred on the purchase of insecticides, fungicides, pesticide, etc. and their procurement.

Land revenue. It included the actual land revenue paid by farmers for area of the respective crop.

Incidental expenditure. It includes refreshing charges and other expenditure for cultivation of other crop.

Interest on fixed capital -It was calculated by charging interest at the rate of 10 per annum on investment on commonly used assets.

Depreciation and repairing charges. Depreciation means the decrease in the value of asset through wear and tear. Straight-line method was used to work out depreciation. The uniform rate of 10 per cent on the present value at the beginning of the year of farm implements and machinery was taken and only the proportionate charges were taken for the crop on hectare basis.

$$\text{Depreciation} = \frac{\text{Purchase price of the asset} - \text{Junk value (10\%)}}{\text{No. of useful years (expected life)}}$$

Interest on working capital- The interest on working capital was worked out at the rate of 6 per cent per annum on cost 'A' excluding land revenue and depreciation for the entire life period of crop as per prevailing rate of interest.

Cost 'A₂'-Cost A₁ + Rent paid for leased-in land.

Cost 'B₁' -Cost A₁ + Interest value of owned fixed capital assets (excluding land).

Components included in cost 'B₁'

Interest on fixed capital -It was calculated by charging interest at the rate of 10 per cent of investment on commonly used assets excluding land.

Cost 'B₂'-Cost B₁ + Rental value of owned land (net of land revenue) + Rent paid for leased-in land.

Component included in cost 'B₂'

Rental value of land-Rental value of land was calculated at the rate of 1/6th of gross value of produce by deducting the land revenue. It is calculated by following formula,

Rental value of land = (1/6th of gross value of produce - land revenue)

Cost 'C₁'-Cost B₁ + Imputed value of family labour.

Cost 'C₂'.Cost B₂ + Imputed value of family labour.

Component included in cost 'C₁' and 'C₂'

Family human labour-The general wage rate prevailing in the village (while performing various operations) was considered for assessing the wages of male and female family labour.

Cost 'C₃'-Cost C₂ + 10 per cent of cost C₂ on account of managerial functions performed by farmers.

Cost of production per quintal -Cost of production per quintal of groundnut, soybean and sesame has been worked out by total cost minus value of by produce divided by quantity of main produce in quintal.

Gross and net returns

1. Gross returns-Gross returns of the farmers under the present study was estimated from returns obtained from main and by produce.

2. Net returns -Net returns was computed at different costs i.e. cost A₁, cost A₂, cost B₁, cost B₂, cost C₁, cost C₂ and cost C₃ by deducting respective costs from the gross returns.

Net income at A₁ = Gross returns - Cost 'A₁'

Net income at A₂ = Gross returns - Cost 'A₂'

Net income at B₁ = Gross returns - Cost 'B₁'

Net income at B₂ = Gross returns - Cost 'B₂'

Net income at C₁ = Gross returns - Cost 'C₁'

Net income at C₂ = Gross returns - Cost 'C₂'

Net income at C₃ = Gross returns - Cost 'C₃'

3.Input Output ratio -It is a ratio between the value of gross output and the cost of cultivation at different cost levels. The probability of crop production cannot be justified completely unless input output ratio were worked out. This is the ratio which represents returns obtained per rupee of investment. It was worked out by dividing gross returns by the total cost. It was calculated at cost A₁, cost A₂, cost B₁, cost B₂, cost C₁, cost C₂ and cost C₃ as-

$$\text{Input - Output ratio at cost 'A}_1\text{' = } \frac{\text{Gross Income}}{\text{Cost 'A}_1\text{'}}$$

$$\text{Input - Output ratio at cost 'A}_2\text{' = } \frac{\text{Gross Income}}{\text{Cost 'A}_2\text{'}}$$

$$\text{Input - Output ratio at cost 'B}_1\text{' = } \frac{\text{Gross Income}}{\text{Cost 'B}_1\text{'}}$$

$$\text{Input - Output ratio at cost 'B}_2\text{' = } \frac{\text{Gross Income}}{\text{Cost 'B}_2\text{'}}$$

$$\text{Input - Output ratio at cost 'C}_1\text{' = } \frac{\text{Gross Income}}{\text{Cost 'C}_1\text{'}}$$

$$\text{Input - Output ratio at cost 'C}_2\text{' = } \frac{\text{Gross Income}}{\text{Cost 'C}_2\text{'}}$$

$$\text{Input - Output ratio at cost 'C}_3\text{' = } \frac{\text{Gross Income}}{\text{Cost 'C}_3\text{'}}$$

RESULTS AND DISCUSSION

The study revealed that total 40 groundnut growing farmers were selected from four villages viz., Wakodi, Bhendala, Khapa (Gudhan) and Jamgao. Among these 40 farmers selected 23 were small size farmers (upto 2 hectares), 10 were medium size farmers (2.01 hectares to 4 hectares) and 7 were large size farmers (4.01 hectares and above).

Table 1 indicates per hectare input utilization of groundnut at the overall level i.e., seed 123.37 kg per hectare, manures 21.01 tons per hectare, fertilizers i.e., N 32.76 kg per hectare, P 34.97 kg per hectare and K 23.85 kg per hectare, respectively. The utilization of hired human labour was 44.73 days, family human labour 23.23 days, bullock labour 11.75 days, machinery hours 18.39 hrs. and plant protections ₹ 2697.68.

It is also revealed from the Table that seed utilization was highest in large group (125.10 kg/ha), followed by medium group (123.92 kg/ha) and small group (123.25 kg/ha). The recommended seed rate for groundnut is 100 kg to 125 kg per hectare. The Table shows that farmers use the seed rate according to the recommendations. The highest hired human labour was utilized in large group (48.06 days) followed by medium group (42.72 days) and small group (39.25 days). The highest family human labour was utilized in small group (41.63 days) followed by medium group (21.43 days) and large group (15.36 days). The highest manures, fertilizers N, P and K, bullock labour, machine hours and plant protections were utilized by large group of farmers. The results obtained are in close agreement with the results of Raut *et al.* (2015).

Table 1: Per hectare input utilization of selected groundnut cultivators.

Sr. No.	Particulars	Unit	Size Group				
			Small	Medium	Large	Overall	
1.	Hired human labour	Days	a) Male	12.11	13.85	14.52	13.78
			b) Female	27.14	28.87	33.54	30.95
			Sub-total		39.25	42.72	48.06
2.	Family human Labour	Days	a) Male	14.21	10.25	9.85	10.36
			b) Female	27.42	11.18	5.51	12.87
			Sub-total		41.63	21.43	15.36
3.	Bullock labour	Pair Days	a) Hired	4.21	5.42	6.21	4.81
			b) Owned	6.21	7.85	8.91	6.94
			Sub-total		10.42	13.27	15.12
4.	Machine Charges	Hours	a) Hired	6.12	7.24	10.25	7.54
			b) Owned	8.12	9.26	12.54	10.85
			Sub-total		14.24	16.50	22.79
5.	Seed	Kg		123.25	123.92	125.10	123.37
6.	Manures	Tonnes		20.40	20.80	21.31	21.01
7.	Fertilizers	Kg	N	31.24	32.12	34.22	32.76
		Kg	P	33.21	34.51	35.52	34.97
		Kg	K	22.54	23.21	25.12	23.85
8.	Plant protections	₹		2600.54	2708.12	2789.55	2697.68

It is revealed from Table 2 that per hectare cost of cultivation for groundnut crop for small farmers at cost 'A₁' and cost 'A₂' was ₹ 38471.62, cost 'B₁' ₹

39672.49 and cost 'B₂' ₹ 57603.28 and the percentage share at cost 'C₃' was 52.20 per cent, 53.83 per cent and 78.16 per cent respectively. The cost 'C₁' was ₹

49068.03, cost 'C₂' was ₹ 66998.82 and cost 'C₃' was ₹ 73698.70. The major share in groundnut cultivation was towards cost 'A₁' and cost 'A₂' (52.20 per cent). In groundnut cultivation of small farmers among the various components of expenditure in cost 'A₁' and cost 'A₂', the share of cost of seed has occupied first position with 17.32 per cent followed by hired human labour (11.88 per cent), machine charges (5.78 per cent), bullock labour (4.24 per cent), fertilizers (4.21 per cent), plant protections (3.53 per cent) and manures (2.78 per cent). Thus, it could be inferred that seed, hired human labour, machine charges, bullock labour, fertilizers, plant protections and manures were the major cost components. The share of imputed value of family labour was 12.75 per cent. Per hectare yield of groundnut crop obtained was 16.54 quintals with gross returns of ₹ 108738.61. The per quintal cost of production was ₹ 4395.72 in groundnut cultivation in small size group of farmers.

In case of medium farmers it is revealed that per hectare cost of cultivation for groundnut crop for medium farmers at cost 'A₁' and cost 'A₂' was ₹ 41795.36, cost 'B₁' ₹ 43145.61 and cost 'B₂' ₹ 62550.27 and the percentage share at cost 'C₃' was 56.12 per cent, 57.93 per cent and 83.98 per cent, respectively. The cost 'C₁' was ₹ 48305.24, cost 'C₂' was ₹ 67709.90 and cost 'C₃' was ₹ 74480.89. The major share in groundnut cultivation was towards cost 'A₁' and cost 'A₂' (56.12 per cent). In groundnut cultivation of medium farmers among the various components of expenditure in cost 'A₁' and cost 'A₂', the share of cost of seed has occupied first position with 17.54 per cent followed by hired human labour (13.13 per cent), machine charges (6.67 per cent), bullock labour (5.42 per cent), fertilizers (4.44 per cent), plant protections (3.64 per cent) and manures (2.89 per cent). Thus, it could be inferred that seed, human labour, machine charges, bullock labour, fertilizers, plant protections and manures were the major cost components. The share of imputed value of family labour was 6.93 per cent. Per hectare yield of groundnut obtained was 17.52 quintals with gross returns of ₹ 117587.84. The per quintal cost of production was ₹ 4191.88 in groundnut cultivation in medium size group of farmers.

In case of large farmers it revealed that per hectare cost of cultivation for groundnut crop for large farmers at cost 'A₁' and cost 'A₂' was ₹ 47394.43, cost 'B₁' ₹ 48772.66 and cost 'B₂' ₹ 71218.05 and the percentage share at cost 'C₃' was 57.13 per cent, 58.79 per cent and 85.85 per cent, respectively. The cost 'C₁' was ₹ 52970.31, cost 'C₂' was ₹ 75415.70 and cost 'C₃' was ₹

82957.27. The major share in groundnut cultivation was towards cost 'A₁' and cost 'A₂' (57.13 per cent). In groundnut cultivation of large farmers among the various components of expenditure in cost 'A₁' and cost 'A₂', the share of cost of seed has occupied first position with 15.91 per cent followed by hired human labour (14.21 per cent), machine charges (8.43 per cent), bullock labour (5.64 per cent), fertilizers (4.35 per cent), plant protections (3.36 per cent) and manures (2.80 per cent). Thus, it could be inferred that seed, hired human labour, machine charges, bullock labour, fertilizers, plant protection and manures were the major cost components. The share of imputed value of family labour was 5.06 per cent. Per hectare yield of groundnut crop was obtained 17.61 quintals with gross returns of ₹ 135933.9. The per quintal cost of production was ₹ 4649.88 in groundnut cultivation in large size group of farmers.

For overall level it is revealed that per hectare cost of cultivation for groundnut crop at overall level at cost 'A₁' and cost 'A₂' was ₹ 48101.48, cost 'B₁' ₹ 49398.80 and cost 'B₂' ₹ 69898.33 and the percentage share at cost 'C₃' was 57.86 per cent, 59.42 per cent and 84.07 per cent, respectively. The cost 'C₁' was ₹ 55082.85, cost 'C₂' was ₹ 75582.38 and cost 'C₃' was ₹ 83140.62. The major share in groundnut cultivation was found towards cost 'A₁' and cost 'A₂' (57.86 per cent). In groundnut cultivation at overall level among the various components of expenditure in cost 'A₁' and cost 'A₂', the share of cost of seed has occupied first position with 15.34 per cent followed by machine charges (13.29 per cent), hired human labour (12.60 per cent), bullock labour (4.32 per cent), fertilizers (4.06 per cent), plant protections (3.24 per cent) and manures (2.72 per cent). Thus, it could be inferred that seed, machine charges, hired human labour, bullock labour, fertilizers, plant protections and manures were the major cost components. The share of imputed value of family labour was 6.84 per cent. Per hectare yield of groundnut crop obtained was 17.60 quintals with gross returns of ₹ 124192.67. The per quintal cost of production was ₹ 4665.03 in groundnut cultivation at overall level.

The results so obtained are in close agreement with the findings of Kshama *et al.* (2021) they observed that the cost of cultivation of groundnut at cost C₃ was ₹ 33843.76/acre in Koppal district and ₹ 33843.79/ acre in Ballari district. This indicates that groundnut is a profitable crop.

Table 2: Per hectare cost of cultivation of groundnut (₹/ha).

Sr. No.	Particulars	Unit	Size Group			
			Small	Medium	Large	Overall
1.	Hired Human Labour	Days	8755.22 (11.88)	9782.41 (13.13)	11788.84 (14.21)	10478.46 (12.60)
2.	Bullock Labour	Days	3588.57 (4.32)	4036.73 (5.42)	4678.73 (5.64)	3588.57 (4.32)
3.	Machine Charges	Hours	4262.17 (5.78)	4966.34 (6.67)	6991.74 (8.43)	11049.08 (13.29)
4.	Manures	Tons.	2050.20	2128.26	2321.94	2266.55

			(2.78)	(2.89)	(2.80)	(2.77)
5.	Fertilizers	Kg.	3104.32 (4.21)	3306.45 (4.44)	3607.97 (4.35)	3374.09 (4.06)
6.	Seed	Kg.	3104.32 (4.21)	12995.50 (17.54)	13199.3 (15.91)	12750.29 (15.34)
7.	Plant Protections	₹	2600.54 (3.53)	2708.12 (3.64)	2789.55 (3.36)	2697.68 (3.24)
8.	Incidental Charges	₹	150.43 (0.20)	152.25 (0.20)	154.92 (0.19)	152.32 (0.18)
9.	Repairing Charges	₹	138.21 (0.19)	141.21 (0.19)	145.61 (0.18)	141.87 (0.17)
10.	Working Capital	₹	36949.86 (50.14)	40217.30 (54.00)	45678.6 (55.06)	46498.91 (55.92)
11.	Int. on working capital @ 6 per cent/annum	₹	554.24 (0.75)	605.34 (0.81)	688.36 (0.83)	697.48 (0.83)
12.	Depreciations Charges	₹	705.84 (0.85)	779.45 (1.05)	817.21 (0.99)	705.84 (0.85)
13.	Land Revenue	₹	192.31 (0.26)	193.32 (0.26)	210.26 (0.25)	199.25 (0.24)
14.	Cost "A₁" (10 to 13)	₹	38471.62 (52.20)	41795.36 (56.12)	47394.4 (57.13)	48101.48 (57.86)
15.	Rent value of leased in land	₹	-	-	-	-
16.	Cost "A₂" (14+15)	₹	38471.62 (52.20)	41795.36 (56.12)	47394.4 (57.13)	48101.48 (57.86)
17.	Int. on Fix. cap. @ 10 per cent/annum	₹	1200.87 (1.63)	1350.25 (1.81)	1378.23 (1.66)	1297.32 (1.56)
18.	Cost "B₁" (16+17)	₹	39672.49 (53.83)	43145.61 (57.93)	48772.6 (58.79)	49398.80 (59.42)
19.	Rental value of land	₹	17930.79 (24.33)	19404.66 (26.05)	22445.3 (27.06)	20499.53 (24.66)
20.	Cost "B₂" (18+19)	₹	57603.28 (78.16)	62550.27 (83.98)	71218.0 (85.85)	69898.33 (84.07)
21.	Imputed value of family human labour	Days	9395.54 (12.75)	5159.62 (6.93)	4197.65 (5.06)	5684.05 (6.84)
22.	Cost "C₁" (18+21)	₹	49068.03 (66.58)	48305.24 (64.86)	52970.3 (63.85)	55082.85 (66.25)
23.	Cost "C₂" (20 + 21)	₹	66998.82 (90.90)	67709.90 (90.90)	75415.7 (90.90)	75582.38 (90.90)
24.	Supervision charges @ 10 per cent of Cost C ₂	₹	6699.88 (9.09)	6770.99 (9.09)	7541.57 (9.09)	7558.24 (9.09)
25.	Cost "C₃" (22 + 23)	₹	73698.70 (100.00)	74480.89 (100.00)	82957.2 (100.00)	83140.62 (100.00)
26.	Yield Per hectare	Main produce (₹)	107745.03	116548.65	134861.08	123156.70
		By-Product (₹)	993.57	1039.23	1072.85	1035.96
27.	Gross value of produce	₹	108738.61	117587.87	135933.92	124192.67
28.	Per qtl. cost of production	₹	4395.72	4191.88	4649.88	4665.03

(Figures in parenthesis are percentages to cost 'C₃')

From Table 3 it is revealed that in groundnut cultivation the per hectare gross returns obtained at overall level was ₹ 124192.67. The net returns obtained at overall level at cost 'A₁' and cost 'A₂' was ₹ 76091.19, at cost 'B₁' was ₹ 74793.87, at cost 'B₂' ₹ 54294.34, at cost 'C₁' ₹ 69109.82, at cost 'C₂' ₹ 48610.29 and at cost 'C₃'. ₹ 41052.05 This means groundnut crop appeared to be good for monetary benefits. The highest benefit-cost ratio at cost 'C₃' was recorded in large size group *i.e.* 1:1.64 followed by medium group *i.e.* 1:1.58 and small size group *i.e.* 1:1.48. At overall level the benefit-cost ratio at cost 'C₃' was 1:1.49. This indicates that on

one rupee invested in the cultivation of groundnut earned ₹ 1.48, ₹ 1.58, ₹ 1.64 and ₹ 1.49 for small, medium, large size groups and at overall level, respectively.

The results obtained are in close agreement with the findings of Patel and Chandrakar (2022). They observed that input-output ratio for groundnut to be 1.50, 1.51, 1.51 and 1.50 for small, medium, large and overall size of group, respectively. This indicates that groundnut is a profitable crop.

Table 3: Per hectare cost and returns from groundnut (₹/ha).

Sr. No.	Particulars		Size group			
			Small	Medium	Large	Overall
1.	Yield (qtl)	Main produce	16.54	17.52	17.61	17.60
		By-produce	7.51	7.69	7.71	7.65
2.	Price/ (qtl)	Main produce	6514.21	6652.32	7658.21	6997.54
		By-produce	132.30	135.14	139.15	135.42
3.	Value of main produce		107745.03	116548.65	134861.08	123156.70
4.	Value of by-produce		993.57	1039.22	1072.85	1035.96
5.	Gross value of produce		108738.60	117587.87	135933.92	124192.67
6.	Cost of Cultivation at					
a)	Cost 'A ₁ '		38471.62	41795.36	47394.43	48101.48
b)	Cost 'A ₂ '		38471.62	41795.36	47394.43	48101.48
c)	Cost 'B ₁ '		39672.49	43145.61	48772.66	49398.80
d)	Cost 'B ₂ '		57603.28	62550.27	71218.05	69898.33
e)	Cost 'C ₁ '		49068.03	48305.24	52970.31	55082.85
f)	Cost 'C ₂ '		66998.82	67709.90	75415.70	75582.38
g)	Cost 'C ₃ '		73698.70	74480.89	82957.27	83140.62
7.	Net returns at					
a)	Cost 'A ₁ '		70266.99	75792.51	88539.49	76091.19
b)	Cost 'A ₂ '		70266.99	75792.51	88539.49	76091.19
c)	Cost 'B ₁ '		69066.12	74442.26	87161.26	74793.87
d)	Cost 'B ₂ '		51135.33	55037.60	64715.87	54294.34
e)	Cost 'C ₁ '		59670.58	69282.63	82963.61	69109.82
f)	Cost 'C ₂ '		41739.79	49877.97	60518.22	48610.29
g)	Cost 'C ₃ '		35039.91	43106.98	52976.65	41052.05
8.	Benefit-cost ratio at					
a)	Cost 'A ₁ '		2.83	2.81	2.87	2.85
b)	Cost 'A ₂ '		2.90	2.81	2.87	2.85
c)	Cost 'B ₁ '		2.74	2.75	2.79	2.76
d)	Cost 'B ₂ '		1.89	1.89	1.91	1.90
e)	Cost 'C ₁ '		2.22	2.43	2.57	2.42
f)	Cost 'C ₂ '		1.62	1.74	1.80	1.64
g)	Cost 'C ₃ '		1.48	1.58	1.64	1.49

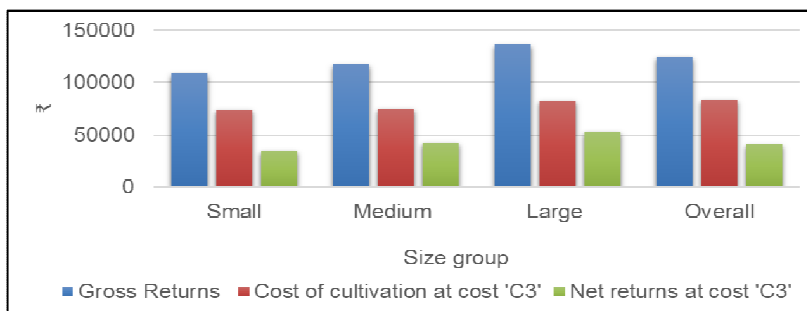


Fig. 1. Per hectare cost and returns of groundnut cultivation at overall level.

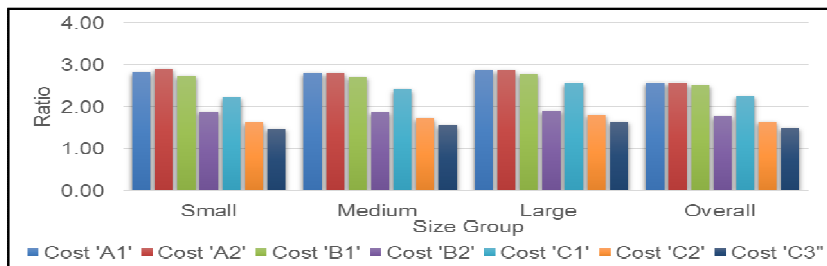


Fig. 2. Benefit-Cost ratio at various cost for groundnut.

CONCLUSIONS

In groundnut crop the per hectare cost of cultivation for overall farmers at cost 'A₁' and cost 'A₂' was ₹ 48101.48, cost 'B₁' ₹ 49398.80, cost 'B₂' ₹ 69898.33, cost 'C₁' ₹ 55082.85, cost 'C₂' ₹ 75582.38 and cost 'C₃'

₹ 83140.62. The gross value of produce was ₹ 124192.67 and the per quintal cost of cultivation was ₹ 4665.03. In groundnut crop production the net returns for overall farmers at cost 'A₁' and cost 'A₂', cost 'B₁', cost 'B₂', cost 'C₁', cost 'C₂' and cost 'C₃' was ₹

76091.19, ₹ 74793.87, ₹ 54294.34, ₹ 69109.82, ₹ 48610.29 and ₹ 41052.05, respectively. The benefit cost ratio at overall level at cost 'C₃' was found to be 1.49 this indicates that groundnut crop is profitable. All the results obtained above are in close agreement with Sunandini and Irgu (2020).

FUTURE SCOPE

The area under the oilseed cultivation is increasing in the recent years. The production of oilseeds in India has been growing for the last five years. The area under the oilseeds crops shows a positive increase which in turns increases the overall production of the oilseeds crops. Due to this increase in area farmers face a lot of problems in taking production of oilseeds. They need a proper guidance which can lead to the profitable production of these crops. These all reason make it necessary to undertake the analysis of selected oilseed crop in Nagpur district. This will help the farmers for increasing their production and get profits form the oilseed crops they grow.

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