

Costs and Returns Analysis of Groundnut in Koppal and Ballari districts

Kshama, A.V.¹, Dr. Amrutha T. Joshi², Dr. B.S. Reddy³, Dr. G.M. Hiremath⁴, Dr. B.G. Koppalkar⁵ and Dr. Vijaya B. Wali⁶

¹ PhD Scholar, Department of Agricultural Economics, College of Agriculture, Raichur

² Professor and Head, Department of Agricultural Economics, College of Agriculture, Raichur

³ Associate Professor, Department of Agricultural Economics and Farm Superintendent, ZARS Kalaburagi

⁴ Assistant Professor, Department of Agricultural Economics, College of Agriculture, Raichur

⁵ Professor and Head, Department of Agronomy, College of Agriculture, Raichur

⁶ Assistant Professor, Department of Agricultural Statistics, College of Agriculture, Raichur

Orcid id: <https://orcid.org/0000-0001-5041-6731>

Abstract:- The North Eastern Karnataka (NEK) districts of Koppal and Ballari falling under the Northern Dry Zone is blessed with the red soil and red sandy soils which is most suitable for the cultivation of groundnut crop. Groundnut crop was found to be sown in larger area in these districts as it is drought tolerant and one of the major oilseed crop of the NEK region. The present study was conducted to analyse the costs and returns of groundnut in Koppal and Ballari districts. It was evident from the result that, the Cost C was found to be ₹34,101.80 acre⁻¹ in Koppal whereas it was found to be ₹33,843.76 acre⁻¹ in Ballari district. The gross returns in Koppal and Ballari district was ₹60,000 acre⁻¹ and ₹55,000 acre⁻¹ respectively. The returns per rupee spent over in both the districts at Cost A₁, Cost A₂, Cost B and Cost C were found to be greater than one indicating the profitability of the crop to the farmers.

Keywords:- Cost of Cultivation, Returns, B:C Ratio.

I. INTRODUCTION

Groundnut, also regarded as ‘poor man’s almond’ by the Father of our Nation – Mahatma Gandhiji, is one of the important oilseed crop in the world. At global level, India stands second (13 per cent) in production after China (36 per cent) (Anon., 2021). In India, groundnut accounts for 45 per cent of oilseed area and 55 per cent of oilseed production (Pawar *et al.*, 2016). State wise share in the production of groundnut was found to be topped by Gujarat (35 per cent) followed by Tamil Nadu (14 per cent), Andhra Pradesh (12 per cent), Karnataka (8 per cent) and Rajasthan (7 per cent) (Anon., 2021). In Karnataka it is majorly grown in 11 districts viz., Chitradurga, Ballari, Tumakuru, Gadag, Dharwad, Belgaum, Haveri, Davangere, Chikaballapura, Koppal and Vijayapura.

The Koppal and Ballari districts of North Eastern Karnataka (NEK) region were found to have highest area under the crop as compared to other NEK districts. It was cultivated during *rabi* season in these districts as it is drought tolerant. This makes the farmers of the region to take up the crop which is drought tolerant and requires only life saving irrigation. An investigation was conducted to

know the costs involved in the production of groundnut and the profitability of the enterprise in the districts.

II. LITERATURE REVIEW

A study conducted by Raut *et al.* (2015), on the costs and returns from groundnut cultivation in Sabarkantha district of North Gujarat region showed that, the small farmers obtained highest gross income (₹69,915 ha⁻¹) followed by large farmers and medium farmers (₹69,230 ha⁻¹ and ₹69,065 ha⁻¹ respectively). The net income over Cost C₂ was found to be highest among the large farmers (₹25,998 ha⁻¹) followed by medium farmers (₹25,952 ha⁻¹) and small farmers (₹25,699 ha⁻¹).

Pawar *et al.* (2016) conducted a study in Raigad district of Konkan region, to assess the costs, returns and profitability of groundnut cultivation. From the results it was evident that, large farmers incurred a higher input cost (₹36,182.42 ha⁻¹) followed by medium farmers (₹35,695.62 ha⁻¹) and small farmers (₹34,433.49 ha⁻¹). A similar pattern was followed for Cost C, where the large farmers incurred a cost of ₹88,010.68 ha⁻¹, medium farmers incurred ₹86,013.96 ha⁻¹ and small farmers incurred ₹85,549.93 ha⁻¹. The total returns was found to be higher among the medium farmers (₹1,06,925 ha⁻¹) followed by small farmers (₹1,01,858.3 ha⁻¹) and large farmers (₹1,00,218.4 ha⁻¹).

A study conducted in Indi and Sindagi taluks of Vijayapura district analysed the cost of cultivation of the groundnut crop. The results of the analysis showed that, large farmers incurred a higher cost of cultivation (₹28,804.78 ha⁻¹) as compared to small (₹26,616.99 ha⁻¹) and medium (₹26,076.92 ha⁻¹) farmers and the average cost was found to be ₹27,162.09 ha⁻¹. The benefit cost ratio for small, medium and large farmers was worked out to be 1.77, 1.86 and 1.73 respectively (Rathod and Murthy, 2017).

A study by Naidu *et al.* (2019), in Anantapur district of Andhra Pradesh, analysed the economics of groundnut cultivation. The results of the study indicated that, the average cost of cultivation was found to be ₹61,369 ha⁻¹, whereas, the average gross returns and net returns were found to be ₹86,064 ha⁻¹ and ₹27,395 ha⁻¹ respectively. The

average cost of production per quintal was found to be ₹3,338.8 while, the price per quintal was found to be ₹3,250 with the input –output ratio of 1:1.46.

Sawant *et al.* (2020) conducted a study on cost, returns and profitability of *kharif* groundnut in Solapur district of Maharashtra. The results highlighted the fact that, the gross returns per hectare was found to be ₹2,02,606.74 of which the major share was obtained from the main produce (pods). The farm business income was found to be ₹1,07,653.42 ha⁻¹ while, the family labour income was found to be ₹63,797.79 ha⁻¹. The net profit from the crop was found to be ₹59,406.98 ha⁻¹ with the output input ratio of 1.41. The cost of production per quintal was found to be ₹2,637.15.

III. METHODOLOGY

From Koppal and Ballari the districts one taluk was selected based on the highest triennium average area under the groundnut crop. The selected taluks included, Yelburga taluk from Koppal district and Kudligi taluk from Ballari district. From each of the selected taluk a random sample of 30 respondents were selected and interviewed.

Cost of cultivation

In the case of agricultural crops, the annual cost of maintenance could be accounted as cost of cultivation of the crop as the life cycle of the crop is less. In this study the total cost of cultivation was accounted as the sum total of all the costs incurred by the farmer in the production of the crop. In order to account the various kinds of cost incurred in the production process the ABC cost concept was made use in this study.

Farm business cost concept

Cost A₁ also regarded as paid out cost includes:

1. Cost hired human labour
2. Cost of hired bullock labour
3. Cost of hired machine labour
4. Imputed value of owned bullock labour
5. Imputed value of owned machine labour
6. Cost of seeds
7. Cost of manures and fertilizers
8. Cost of plant protection chemicals
9. Land revenue
10. Depreciation
11. Interest on working capital

Cost A₂ : This involves the Cost A₁ and the rental value of the leased-in land.

Cost B : Includes Cost A₂ and rental value of owned land and the interest on owned fixed capital excluding land.

Cost C : Regarded as the total cost of cultivation or gross cost. It includes Cost B and the rental value of family labour. (CSO, 2008)

IV. RESULTS

Cost of cultivation of Groundnut in Koppal district

The cost of cultivation of groundnut crop in Koppal district is presented in Table 1. From the table it is evident that, the material costs (₹13,308.33 acre⁻¹) involved in the cultivation was higher than the labour costs (₹7,726.33 acre⁻¹). The leased-in land was not owned by the respondents for cultivation purpose, hence, Cost A₁ and Cost A₂ remained the same (₹22,751.55 acre⁻¹). Out of the total paid out costs, 22.30 per cent was accounted by seeds followed by hired labour (20.15 per cent), plant protection chemicals (15.40 per cent) and fertilizers (11.72 per cent). The Cost B and Cost C were found to be ₹30,861.80 acre⁻¹ and ₹34,101.80 acre⁻¹ respectively.

Table 1 Details of the costs involved in the cultivation of groundnut in Koppal district (n=30) (₹/acre)

Sl. No.	Particulars	Cost	Percent to cost A ₁
Labour cost			
1	Hired human labour	4569.667	20.150
2	Imputed value of own bullock labour	2050.000	9.039
3	Hired machine labour	1106.667	4.880
4	Imputed value of own machine labour	0.000	0.000
	Sub total	7726.334	
Material cost			
5	Seed	5058.000	22.303
6	Fertilizer	2660.000	11.729
7	Manures	2096.670	9.245
8	Plant protection chemicals	3493.667	15.405
	Sub total	13308.337	
9	Land revenue	82.867	0.364
10	Depreciation	161.586	0.710
11	Interest on working capital	1472.427	6.472
	Cost A₁	22751.550	100
12	Rental value of leased in land	0	
	Cost A₂	22751.550	
13	Rental value of owned land	8000.00	
14	Interest on owned fixed capital excluding land	110.25	

	Cost B	30861.800	
15	Family labour	3240.000	
	Cost C	34101.800	

Returns from groundnut cultivation and B:C ratio in Koppal district

From the Table 2, it could be viewed that, the gross returns was found to be ₹60,000 acre⁻¹. The net returns was found to be ₹37,248.45 acre⁻¹, ₹37,248.45 acre⁻¹, ₹29,138.20

acre⁻¹ and ₹25,898.20 acre⁻¹ at Cost A₁, Cost A₂, Cost B and Cost C respectively. The B:C ratio was found to be 2.63, 2.63, 1.94 and 1.75 at Cost A₁, Cost A₂, Cost B and Cost C respectively indicating the profitability of the enterprise.

Table 2 Yield and returns of groundnut cultivation in Koppal district (n=30)

Sl. No.	Particulars	Koppal district
1	Yield (quintal/acre)	12
2	Price (₹/quintal)	5000
3	Gross income (₹/acre)	60,000
4	Net returns at Cost A ₁ (₹/acre)	37248.45
5	Net returns at Cost A ₂ (₹/acre)	37248.45
6	Net returns at Cost B (₹/acre)	29138.20
7	Net returns at Cost C (₹/acre)	25898.20
Returns per rupee spent over		
8	Cost A ₁	2.637
9	Cost A ₂	2.637
10	Cost B	1.944
11	Cost C	1.759

Cost of cultivation of Groundnut in Ballari district

In Ballari district the major share of Cost A₁ was accounted by seeds (22.84 per cent), hired labour (20.62 per cent), fertilizers (13.42 per cent) and plant protection chemicals (12.48 per cent) (Table 3). The Cost A₁, Cost A₂, Cost B and Cost C were found to be ₹21,867.63 acre⁻¹, ₹22,200.96 acre⁻¹, ₹30,313.76 acre⁻¹ and ₹33,843.76 acre⁻¹ respectively. The Cost A₁, Cost A₂ and Cost C was found to be higher in Koppal district as compared to Ballari district.

Returns from groundnut cultivation and B:C ratio Ballari district

The net returns at Cost A₁, Cost A₂, Cost B and Cost C was found to be ₹33,132.36 acre⁻¹, ₹32,799.03 acre⁻¹, ₹24,686.23 acre⁻¹ and ₹21,156.23 acre⁻¹ respectively (Table 4). The B:C ratio at Cost A₁, Cost A₂, Cost B and Cost C were 2.51, 2.47, 1.81, and 1.62 respectively. The gross income was found to be ₹55,000 acre⁻¹. As the returns per rupee spent over was greater than one, it indicated the enterprise profitability.

Table 3 Details of the costs involved in the cultivation of groundnut in Ballari district (n=30) (₹/acre)

Sl. No.	Particulars	Cost	Percent to cost A ₁
Labour cost			
1	Hired human labour	4414.167	20.262
2	Imputed value of own bullock labour	1087.500	4.992
3	Hired machine labour	1753.704	8.050
4	Imputed value of own machine labour	750.000	3.443
	Sub total	8005.371	
Material cost			
5	Seed	4985.360	22.884
6	Fertilizer	2924.367	13.424
7	Manures	1590.000	7.299
8	Plant protection chemicals	2720.000	12.486
	Sub total	12219.727	
9	Land revenue	87.300	0.399
10	Depreciation	124.645	0.570
11	Interest on working capital	1430.593	6.542
	Cost A₁	21867.635	100
12	Rental value of leased in land	333.333	
	Cost A₂	22200.969	
13	Rental value of owned land	8000	

14	Interest on owned fixed capital excluding land	112.8	
	Cost B	30313.769	
15	Family labour	3530	
	Cost C	33843.769	

Table 4 Yield and returns of groundnut cultivation in Ballari district (n=30)

Sl. No.	Particulars	Ballari district
1	Yield (quintal/acre)	11
2	Price (₹/quintal)	5000
3	Gross income (₹/acre)	55,000
4	Net returns at Cost A ₁ (₹/acre)	33132.365
5	Net returns at Cost A ₂ (₹/acre)	32799.031
6	Net returns at Cost B (₹/acre)	24686.231
7	Net returns at Cost C (₹/acre)	21156.231
	Returns per rupee spent over	
8	Cost A ₁	2.515
9	Cost A ₂	2.477
10	Cost B	1.814
11	Cost C	1.625

V. CONCLUSION

From the study it is evident that, Koppal and Ballari districts noticed a profit in the cultivation of groundnut by the farmers, but, among the districts the net returns at Cost C and the returns per rupee spent over was found to be higher in Koppal district, indicating a better profitability to the farmers growing groundnut in the district.

- [6]. Raut, V., Thakar, K. P., Chaudhari, D. D. and Workneh, S. Y., 2015, Cost of cultivation of *kharif* groundnut in Sabarkanth district of Gujarat state. *Int. Res. J. Agric. Econ. Statist.* 6 (1): 186-188.
- [7]. Sawant, S. L., Shelke, R. D. and Jadhav, S. L., 2020, Cost, returns and profitability of *kharif* groundnut in Solapur district of Maharashtra, India. *Int. J. Curr. Microbiol. App. Sci.* 9 (11): 2481-2486.

REFERENCES

- [1]. [Anonymous]. 2021. Peanut Explorer [on line]. International Production Assessment Division, Foreign Agricultural Service, U.S. Department of Agriculture. Available: <https://ipad.fas.usda.gov/cropexplorer/cropview/commodityView.aspx?cropid=2221000> [05 Sep 2021].
- [2]. CSO (Central Statistical Organisation), 2008, *Manual on cost of cultivation surveys*. Central Statistical Organisation, New Delhi, 25p.
- [3]. Naidu, B. C., Kumar, S. and Rai, A. K., 2019, An economic analysis of production of groundnut (*Arachis Hypogea*) in Anantapur district of Andhra Pradesh. *Int. J. Innovative Sci. Res. Technol.* 4 (5): 482-487.
- [4]. Pawar, R. M., Adhale, P. M., Phuge, S. C. and Deorukhakar, A. C., 2016, Resource use efficiency of groundnut (*Arachishypogea* L.) cultivation in Raigad district of Konkan region [M. S.]. *Int. J. Trop. Agric.* 34 (6): 1843-1847.
- [5]. Rathod, S. and Murthy, C., 2017, Production and marketing management of groundnut in Vijayapura district. *Int. J. Commerce Business Manag.*, 10 (2): 179-185.