

Original Research Article

ECONOMICS OF VALUE ADDED PRODUCTS OF GROUNDNUT IN YADGIR DISTRICT OF KARNATAKA

ABSTRACT

The present study was conducted to analyse the costs and returns of value added products of groundnut in Yadgir district of Karnataka. The source of data was based on primary data consists of 30 sample respondents; the information was collected using snowball sampling technique. The findings revealed that for groundnut holige, the total cost of production for 300 units was ₹ 2,616.16, with a net return of ₹ 2,783.84 and returns per rupee of investment (RRI) of 2.064. Groundnut chikki production incurred a cost of ₹ 3,595.84 for 500 units, yielding a net return of ₹ 1,404.16 and a RRI of 1.390. Groundnut chutney powder production of 10 kg had a total cost of ₹ 2,079.37, resulting in a net return of ₹ 950.37 and a RRI of 1.463. Boiled groundnut production of 10 kg involved a total cost of ₹ 1,503.71, yielding a net return of ₹ 1,496.29 and a RRI of 1.995. Spicy coated groundnut production (10 kg) had a total cost of ₹ 2,227.91, resulting in a net return of ₹ 772.08 and a RRI of 1.346. The profitability and income-enhancing potential of value added groundnut products, suggests that the farmers and entrepreneurs in Yadgir District can benefit from processing groundnuts into diverse, marketable products.

Keywords: Groundnut; Value added products; Costs; Returns.

1. INTRODUCTION

Groundnut (*Arachis hypogaea* L.), known as the “King of oilseed crops” and referred to as the “Wonder nut” and “poor man’s cashew nut,” derives its name from the Greek words “Arachis” and “hypogaea,” meaning “below the ground,” which refers to the development of pods in the soil. It belongs to the Fabaceae family and is a self-pollinated legume crop. Due to its high nutritional value, groundnut is also called a miracle nut, earthnut, peanut, monkey nut, goober, panda, and manila nut. The term groundnut is commonly used in Asia, Africa, Europe, and Australia, while in North and South America, it is referred to as peanut. China, India, Nigeria, United States, Senegal, Myanmar, Indonesia and Sudan are the major groundnut producing countries.

Globally, groundnut is cultivated on 32.7 million hectares, yielding 53.9 million tonnes with an average yield of 1,648 kg/ha (Annon., 2022). In India, during 2022-23, groundnut was grown on 4.96 million hectares, producing 10.29 million tonnes with a productivity of 2,009 kg/ha (Annon., 2023a). Groundnut is cultivated across almost all states in India, with Karnataka being one of the key states. It is a major cash crop in eight districts of Karnataka. In 2023, Karnataka contributed 9.37 per cent of India’s total area under oilseeds and 5.63 per cent of its production. Major groundnut growing districts in Karnataka include Chitradurga, Tumakuru, Ballari, Gadag, Koppal, Dharwad, Haveri and Yadgir (Annon., 2023b).

Comment [KMA1]: It may be appropriate to use present tense in abstract. Please confirm from literature.

Comment [KMA2]: Sentence needs improvement.

Comment [KMA3]: Units ? which units? Kg or Tonnes?

Comment [KMA4]: Net return per 500 units or per one unit?

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Commodity with no value addition fetches low price when it is sold in market. Little product differentiation will be occurring and also would be additional costs without any additional value at each stage of supply chain. In value chain of groundnut, additional value to the product (groundnut) would be added at each stage. In the stages of packaging, processing, quality branding, grading, and so on, there will be an involvement of stakeholders. Farmers will be better able to identify market opportunities and capitalize on available potential as a result of increased awareness and skill development. Value addition enhances profit margins. It plays a more positive role in supporting rural welfare and reducing poverty by providing farm level jobs (Niketha *et al.*, 2018).

Comment [KMA5]: Please make the sentence understandable.

This study aims to explore the economic aspects of value added groundnut products in Yadgir district by analyzing production costs, market demand, and profitability. By understanding these factors, the study ~~will provide~~ provides insights into how farmers and entrepreneurs can optimize returns and contribute to the sustainable development of the groundnut sector in the region.

Comment [KMA6]: In this paragraph, what the author wants to share is not clear. Please improve the introduction by incorporating some literature citations from quality research publications. It seems that author have reviewed very limited literature. Increase the introduction by at least two paragraphs with 6-8 lines each, bearing material well-linked to the subject issue of ground market, value chain etc.

2. METHODOLOGY

2.1 Sampling ~~design~~ Design and Analytical Tools

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The study was carried out in Yadgir district of Kalyana Karnataka region. To analyse the economics of value added products of groundnut, 30 value creators were selected to identify value added products of groundnut using snow ball sampling technique.

Comment [KMA8]: The study area, sampling method and data collection procedure is not well explained. Please provide the details in 10-15 lines.

~~2.2 Analytical tools used~~

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2.2.1 Cost and returns of groundnut value added products

Various value added products from groundnut were being produced by the processors in the study area. Cost and returns for each of the value-added product was worked out. Computation includes following aspects:

2.2.1.1 Cost of production

The expenses incurred on inputs and input services in producing a unit quantity of output. In the study the amount spent on various inputs including labour were calculated.

Comment [KMA9]: You may remove the numbering lists from these sub-headings having definitions.

Comment [KMA10]: Sentences need improvement

2.2.1.2 Gross returns

~~It is~~ Gross returns are the total returns on expenditure incurred before deducting the expenses or the total costs.

$$\text{Gross returns} = \text{Price} \times \text{total output sold}$$

Comment [KMA11]: Make all the equations in equational form like below:

$$\text{Gross Returns} = \text{Price} \times \text{Quantity of Output}$$

2.2.1.3 Net returns

Net returns are the total returns on expenditure incurred after deducting the expenses or the total costs.

$$\text{Net returns} = \text{Gross returns} - \text{Total cost}$$

2.2.1.4 Returns per rupee of expenditure (RRI)

$$\text{Returns per rupee of expenditure} = \frac{\text{Gross returns}}{\text{Total cost of production}}$$

3. RESULT AND DISCUSSION

3.1 Cost and returns in production of groundnut holige

The cost and returns from the production of groundnut holige are presented in Table 1. Average quantity of holiges produced by value creators in the study area was 300 with the total cost of production of ₹ 2,616.16. Gross returns realised by processing was ₹ 5,400 and net return was ₹ 2,783.84.

Among the material cost, cost of groundnut was highest with ₹ 900 (34.40%) followed by jaggery ₹ 300 (11.47%), maida ₹ 300 (11.47%), cost of transportation ₹ 150 (5.73%), miscellaneous ₹ 120 (4.59%), packing material ₹ 90 (3.44%), oil ₹ 81 (3.10%), labelling material ₹ 60 (2.29%) and interest on working capital accounted for ₹ 15.16 (0.58%). On the other hand, labour cost accounted for ₹ 600 i.e. 22.93 per cent of the total cost of production of holiges. By processing 2.5 kg of the groundnut 100 holiges were produced. The total cost for production of 100 holiges was worked out to be ₹ 872.05. The gross returns came to ₹ 1800 at a price of ₹ 18 per holige. The net return was ₹ 927.95 and yielding ₹ 2.064 per rupees of investment on groundnut holige production. Similar results were reported by Kusuma *et al.* (2013).

Table 1: Cost and returns in production of groundnut holige

Sl. No.	Particulars	300 holiges		100 holiges		%
		Quantity of inputs/output	Total cost/returns (₹)	Quantity of inputs/output/quantity	Total cost/returns (₹)/Total cost (₹)	
a)	Costs					
1	Groundnut (kg)	7.50	900	2.50	300	34.40
2	Jaggery (kg)	6	300	2	100	11.47
3	Maida (kg)	6	300	2	100	11.47
4	Oil (ml)	750	81	250	27	03.10
5	Packing material (No.)	300	90	100	30	03.44
6	Labelling material (No.)	30	60	10	20	02.29
7	Cost of transportation		150		50	05.73
8	Family labour (No.)	3	600	1	200	22.93

Comment [KMA12]: RESULTS (in plural form)

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Comment [KMA13]: Discuss your results in few more lines. For example, how the farmers shall be benefited from holige production etc. It will definitely improve their living standards in terms of income, health, etc...

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Comment [KMA15]: Please modify in all tables.

Comment [KMA16]: Please modify in all tables.

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9	Miscellaneous		120		40	04.59
10	Interest on the working capital @ 7 per cent		15.16		5.05	00.58
	Total cost of production (₹)		2616.16		872.05	100.00
b) Returns						
1	Gross returns (₹) @ ₹18/holige	300	5400	100	1800	
2	Net returns (₹)		2783.84		927.95	
3	Returns per rupee of expenditure (₹)		2.064		2.064	

Note: Miscellaneous includes cost of fuel, electricity etc.

3.2 Cost and returns in production of groundnut chikki

The cost and returns from production of groundnut chikki are presented in table 2. Average quantity of chikkis produced in the study area was 500 with the total cost of production of ₹ 3,595.84. Gross returns realised by processing was ₹ 5,000 and net return was ₹ 1,404.16.

Among the material cost, cost of groundnut was highest ₹ 1,785 (49.64%) followed by jaggery ₹ 540 (15.02%), ghee ₹ 150 (4.17%), packing material ₹ 150 (4.17%), labelling material ₹ 150 (4.17%), cost of transportation ₹ 100 (2.78%), miscellaneous cost ₹ 100 (2.78%) and interest on working capital accounted for ₹ 20.84 (0.58%). On the other hand, labour cost accounted for ₹ 600 i.e. 16.69 per cent of the total cost of production of chikkis. By processing 3.4 kg of the groundnut, hundred chikkis were produced. The total cost per 100 chikkis worked out to be ₹ 719.16. The gross returns realised was ₹ 1000 at a price of ₹ 10 per chikki and net return was ₹ 280.84 and yielding ₹ 1.390 per rupee of investment on groundnut chikki production.

Comment [KMA18]: Please mention the units in kg or gram, i.e., 500 units of chikkis with 50 grams each. Make this improvement in overall manuscript.

Comment [KMA19]: Since, all these figures have been mentioned in table, so it is not appropriate to repeat them in text. Please try to explain in general: for an insistence you can say, after 50% share of groundnut in production cost of chikki, major cost components are jaggery and family labour which collectively account for about 32% share.

Comment [KMA20]: Discuss the results as I told above.

Table 2: Cost and returns in production of groundnut chikki

Sl. No.	Particulars	500 chikkis		100 chikkis		%
		Quantity	Total cost (₹)	Quantity	Total cost (₹)	
a) Costs						
1	Groundnut (kg)	17	1785	3.4	357	49.64
2	Jaggery (kg)	12	540	2.4	108	15.02
3	Ghee (g)	200	150	40	30	04.17
4	Packing material (No.)	500	150	100	30	04.17
5	Labelling material (No.)	500	150	100	30	04.17
6	Cost of transportation		100		20	02.78
7	Family labour (No.)	2	600	0.4	120	16.69
8	Miscellaneous		100		20	02.78
9	Interest on the working capital @ 7 per cent		20.84		4.16	00.58
	Total cost of production (₹)		3595.84		719.16	100.00
b) Returns						
1	Gross returns (₹) @ ₹ 10/chikki	500	5000	100	1000	

2	Net returns (₹)	1404.16	280.84
3	Returns per rupee of expenditure (₹)	1.390	1.390

Note: Each chikki weighs about 50 grams

3.3 Cost and returns in production of groundnut chutney powder

The cost and returns from the production of groundnut chutney powder are presented in Table 3. Average quantity of chutney powder produced in the study area was 10 kg per unit, with the total cost of production of ₹ 2079.37. Gross returns realised by processing was ₹ 3000 and net returns was ₹ 950.37.

Among the material cost, cost of groundnut was highest ₹ 840 (40.99%) followed by cost of red chilli powder ₹ 490 (23.91%), cumin ₹ 175 (8.54%), packing material ₹ 80 (3.90%), labelling material ₹ 60 (2.93%), cost of transportation ₹ 60 (2.93%), garlic ₹ 52.50 (2.56%), miscellaneous ₹ 50 (2.44%), curry leaf ₹ 20 (0.98%), salt cost ₹ 10 (0.50%) and interest on working capital accounted for ₹ 11.87 (0.58%) of the total cost of production of chutney powder. On the other hand, labour cost accounted for ₹ 200 i.e. 9.76 per cent of the total cost of production of groundnut chutney powder. By processing 0.7 kg of the groundnut one kg of the groundnut chutney powder were produced. The total cost per kg of chutney powder worked out to be ₹ 204.93. The gross returns realised was ₹ 300 at a price of ₹ 300 per kg. The net return was ₹ 95.06 and yielding ₹ 1.463 per rupee of investment on groundnut chutney powder production. Similar results were reported by Nayana *et al.* (2022).

Comment [KMA21]: Same suggestions as above.

Table 3: Cost and returns in production of groundnut chutney powder

Sl. No.	Particulars	10 kg chutney powder		1 kg chutney powder		%
		Quantity	Total cost (₹)	Quantity	Total cost (₹)	
a)	Costs					
1	Groundnut (kg)	7	840	0.7	84	40.99
2	Red chilli powder (kg)	1.75	490	0.175	49	23.91
3	Garlic (g)	350	52.50	35	5.25	02.56
4	Cumin (g)	350	175	35	17.5	08.54
5	Salt (g)	700	10	70	1	00.49
6	Curry leaf (g)	100	20	10	2	00.98
7	Packing material (No.)	40	80	4	8	03.90
8	Labelling material (No.)	40	60	4	6	02.93
9	Cost of transportation		60		6	02.93
10	Family labour (No.)	2	200	0.2	20	09.76
11	Miscellaneous		50		5	02.44
12	Interest on the working capital @ 7 per cent		11.87		01.18	00.58
	Total cost of production (₹)		2049.37		204.93	100.00
b)	Returns					
1	Gross returns (₹)	10	3000	1	300	
2	Net returns (₹)		950.62		95.06	
3	Returns per rupee of expenditure (₹)		1.463		1.463	

3.4 Cost and returns in production of boiled groundnut

The cost and returns from production of boiled groundnut are presented in Table 4. Average quantity of boiled groundnut produced in the study area was 10 kg. Total cost of production of boiled groundnut was ₹ 1503.71. Gross returns realised by processing was ₹ 3000 and net returns was ₹ 1496.29.

Among the material cost, cost of groundnut which amounted to ₹ 1,200 (79.80%) was highest followed by cost of transportation ₹ 100 (6.66%), miscellaneous cost ₹ 50 (3.33%), salt ₹ 25 (1.66%), packing material ₹ 20 (1.33%) and interest on working capital accounted for ₹ 8.71 (0.58%) of the total cost of production of boiled groundnut. On the other hand, labour cost accounted for ₹ 100 i.e. 6.65 per cent of the total cost of production of boiled groundnut. By processing 1 kg of the groundnut one kg of boiled groundnut were produced. The total cost per kg of boiled groundnut worked out to be ₹ 150.37. The gross returns came to ₹ 300 at a price of ₹ 300 per kg. The net return was ₹ 149.66 and yielding ₹ 1.995 per rupee of investment on boiled groundnut production.

Comment [KMA22]: Same suggestions as above.

Table 4: Cost and returns in production of boiled groundnut

Sl. No.	Particulars	10 kg boiled groundnut		1 kg boiled groundnut		%
		Quantity	Total cost (₹)	Quantity	Total cost (₹)	
a)	Costs					
1	Groundnut (kg)	10	1200	1	120	79.80
2	Salt (kg)	1.50	25	0.15	2.5	01.66
3	Packing material (No.)		20		2	01.33
4	Labelling material (No.)		-		-	-
5	Cost of transportation		100		10	06.65
6	Family labour (No.)		100		10	06.65
7	Miscellaneous		50		5	03.33
8	Interest on the working capital @ 7 per cent		8.71		0.87	00.58
	Total cost of production (₹)		1503.71		150.37	100.00
b)	Returns					
1	Gross returns (₹)	10	3000	1	300	
2	Net returns (₹)		1496.29		149.66	
3	Returns per rupee of expenditure (₹)		1.995		1.995	

3.5 Cost and returns in production of spicy coated groundnut

The cost and returns from production of spicy coated groundnut are presented in Table 5. Average quantity of spicy coated peanuts produced in the study area was 10 kg per unit with the total cost of production of ₹ 2227.91. Gross returns realised by processing was ₹ 3000 and net returns was ₹ 772.08.

Among the material cost, cost of groundnut was ₹ 660 (29.80%) which was highest followed by cost of oil ₹ 450 (20.20%), masala ₹ 170 (7.63%), corn flour ₹ 150 (6.73%), bengal gram flour ₹ 130 (5.84%), cost of transportation ₹ 120 (5.39%), packing material ₹ 100 (4.49%), miscellaneous ₹ 100 (4.48%), red chilli powder ₹ 90 (4.04%), turmeric powder ₹ 40 (1.80%), interest on working capital accounted for ₹ 12.91 (0.58%) and salt cost accounted for ₹ 5 (0.22%) of the total cost of production of spicy coated groundnut. On the other hand, labour cost accounted for ₹ 200 i.e. 8.98 per cent of the total cost of production of spicy coated groundnut. By processing 0.6 kg of the groundnut one kg of the spicy coated peanuts was obtained. The total cost per kg of spicy coated peanuts production was worked out to be ₹ 222.79. The gross returns realised was ₹ 300 at a price of ₹ 300 per kg. The net return was ₹ 77.21 and yielding ₹ 1.346 per rupee of investment on spicy coated groundnut production.

Comment [KMA23]: Same suggestions as above.

Table 5: Cost and returns in production of spicy coated groundnut

Sl. No.	Particulars	10 kg spicy coated groundnut		1 kg spicy coated groundnut		%
		Quantity	Total cost (₹)	Quantity	Total cost (₹)	
a)	Costs					
1	Groundnut (kg)	6	660	0.6	66	29.62
2	Bengal gram flour (kg)	1.5	130	0.15	13	05.84
3	Corn flour (kg)	1.5	150	0.15	15	06.73
4	Red chilli powder (g)	300	90	30	9	04.04
5	Turmeric powder (g)	100	40	10	4	01.80
6	Masala (g)	250	170	25	17	07.63
7	Salt (g)	200	5	20	0.5	00.22
8	Oil (lit.)	5	450	0.5	45	20.20
9	Packing material (No.)		100		10	04.49
10	Labelling material (No.)		-		-	-
11	Cost of transportation		120		12	05.39
12	Family labour (No.)	1	200	0.1	20	08.98
13	Miscellaneous		100		10	04.48
14	Interest on the working capital @ 7 per cent		12.91		1.29	00.58
	Total cost of production (₹)		2227.91		222.79	100.00
b)	Returns					
1	Gross returns (₹)	10	3000	1	300	
2	Net returns (₹)		772.08		77.21	
3	Returns per rupee of expenditure (₹)		1.346		1.346	

Returns per rupee of expenditure for each value added groundnut product is given in Table 6. Cost of production of groundnut holige was highest (₹ 872.05) followed by groundnut chikki (₹ 719.16), spicy coated peanuts (₹ 222.79), groundnut chutney powder (₹ 202.92) and boiled groundnut (₹ 150.37). Profit was highest in groundnut holige to the extent of ₹ 927.95, followed by groundnut chikki to the extent of ₹ 280.84, boiled groundnut to the extent of ₹ 149.63, groundnut chutney powder to the extent of ₹ 97.08 and spicy coated peanuts ₹ 77.20. Returns per rupee of expenditure was highest in groundnut holige that is ₹ 2.06, which means that every one rupee invested has generated

Comment [KMA24]: Same suggestions as above.

an income of ₹ 2.06. It was ₹ 1.99 in boiled groundnut, ₹ 1.47 in groundnut chutney powder, ₹ 1.39 in groundnut chikki and ₹ 1.34 in spicy coated peanuts. Similar results were reported by Deepa (2017).

Comment [KMA25]: Please discuss the results. Only one sentence is not sufficient.

Table 6: Estimation of product wise value addition to groundnut

Sl. No.	Products	Quantity of value added products	Cost of production (₹)	Returns (₹)	Profit (₹)	Returns per rupee of expenditure (₹)
1	Groundnut holige (No.)	100	872.05	1800	927.95	2.06
2	Groundnut chikki (No.)	100	719.16	1000	280.84	1.39
3	Groundnut chutney powder (kg)	1	204.93	300	95.06	1.46
4	Boiled groundnut (kg)	1	150.37	300	149.63	1.99
5	Spicy coated groundnut (kg)	1	222.79	300	77.20	1.34

4. CONCLUSION

Economics of value added groundnut products in Yadgir district of Karnataka reveals that processing groundnuts into various products such as groundnut holige, chikki, chutney powder, boiled groundnut and spicy coated groundnut is financially viable and profitable. Overall, the processing of groundnuts into value added products offers significant potential for income generation and rural development in Yadgir district with the profitability of different products varying based on their material requirements, processing complexity and market demand. The study suggests that promoting value addition in the groundnut sector could contribute positively to the economic well-being of farmers and entrepreneurs in the region.

Comment [KMA26]: Please improve the conclusion with some practicable recommendations in the light of your study findings. Also, increase the conclusion by 4-6 more lines.

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