



A STUDY ON PULSES CULTIVATION IN PRAKASAM DISTRICT WITH REFERENCE TO BLACK GRAM CULTIVATION

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ABSTRACT

The present study focus on labour utilization, cost and returns structure for black gram cultivation in the study area. This study further analyzes the utilization of labour and input-output structure in terms of gross returns, total operating costs and total production costs and analyzes the cost and returns structure of both large and small farmers cultivating black gram. It was inferred from this study that there exists a significant difference between the input-output structure of farmers cultivating Black gram pulses.

KEY WORDS: *Black Gram cultivation, Large and small farmers, Prakasam district.*

INTRODUCTION

In financial year 2020, pulses production across the southern Indian state of Andhra Pradesh amounted to over 1.2 million metric tons. This was a decrease from the previous financial year's value of over 739 thousand metric tons. Paddy which is grown in abundance in the district is exported to other district / states. Other crops grown are Maize, Jowar, Cotton, Sugarcane, Groundnut, Pulses, Chillies and to some extent Tobacco. The major horticulture crops grown are Mango, Guava, Oil Palm, Coconut, Cashew, Lemon etc.

Andhra Pradesh data was reported at 1,166,700 Ton th in 2020. This records an increase from the previous number of 739.600 Ton th for 2019. Agricultural Production: Pulses: Andhra Pradesh data is updated yearly, averaging 1,132.550 Ton th from Mar 1981 to 2020,

Pulses are one of the important food crops globally due to their higher protein content. Pulses are an important group of crops in India, which is also responsible for yielding large financial gains by amounting to a large part of the exports.

Pulses are the major sources of protein in the diet. Of all categories of people, pulses form an integral part of the Indian diet, providing much-needed protein to the carbohydrate-rich diet. India is the largest producer of pulses in the world. Pulses are 20 to 25 percent protein by weight which is double the protein content of wheat and three times that of rice.

PULSES CULTIVATION IN PRAKASAM DISTRICT

Pulses cultivation in Prakasam district has witnessed a boom this fiscal, as the productivity and cultivation area exceeded the target multi-fold. While the productivity increased from 550 kg per hectare last fiscal to 800 kg per hectare this financial year, the cultivation area of pulses was 1.12 lakh hectares.

Accelerated pulses production programme (A3P) has been launched in the district under the aegis of National Food Security Mission (NFSM Pulses 2020–21), a Centrally-sponsored scheme. To increase the yield of pulses, the Department of Agriculture has worked out strategies to implement the programme at pamidipadu village which is located at Korisapadu Mandal in Prakasam District.

Pulses, which normally grow in Rabi season, is a major crop in Prakasam district and 1.12 lakh hectares including all blocks were covered during 2020–21. In the current fiscal, a target of 1.85 lakh hectares was fixed under pulse production programme.



NEED FOR THE STUDY

Pulses are usually cultivated as mixed crops such as cotton, mustard, or cash crops between two cereal crops. Long duration of crops, susceptibility to pest and diseases, low yield as compared to other grains etc. are some of the reason that the pulses have not been preferred crop for farmers. This has resulted in India's dependency on imports of pulses there by leading to increase in price of pulses.

For boost up the pulses production, the government of India has taken several steps to increase pulses production and to incentivize pulses growing farmers including announcement of minimum support price (MSP) for pulses for the first time. Further to boost up the pulses production, all 638 districts of 30 states have been included in the National Food Security Mission. Under NFSM, financial assistance is given for various interventions like demonstration of improved technology, distribution of quality seeds of new varieties, integrated pest management, water saving devices and capacity building of farmers.

For expansion of cultivation of new kinds of seeds across the nation, free 8.20 lakh hybrid seed mini-kits were distributed to farmers in 343 districts of 15 states. Even then the government of Andhra Pradesh could not reach a significant growth in pulses production. In this context, it is necessary to know the true picture of pulses production in Andhra Pradesh

STUDIES RELATING TO PULSES

Mr.K.Seerangan Addl.Director (inputs) in pulses seminar organised at National pulses research centre discusses the various issues related to growth and adoption of technologies to assess the growth rate and to improve.

Prof. Dr.S.Kanniayan vice Chancellor, Tamilnadu Agricultural University pointed out that the growth rate is affected by various factors such as moisture conditions, lack of proper seed storage facilities and growing lands such as marginal lands, Irrigation prone areas, fertile lands occupied for other purpose etc.

He says that growth rate of 20% is only possible under irrigation prone and free from pests and diseases.

Economic growth depends upon its natural resources, human resources capital, enterprise, technology etc.

Gourou explains about the tropical soils and weeds Mechanization to the increase of Growth rate and helping the increase of yield by the effective use of fertilizers .

Dr.Subramanian K.V reveals that the growth rate is usually estimated on the basis of different functional forms. Equating method has been used even if the growth rate is accelerating or decelerating, they used semi log functions to find the compound growth rates of Area, production and productivity for six crops, namely paddy, seeds, pulses, vegetables, wheat, maize. They used time series data from 1961 to 1978 and also divided this into two sub-periods, i.e. 1961-1969 and 1970-1978.

They concluded that growth rates in period II (1970-78) were generally higher than those of period I (1961-1969) which indicated the impact of green revolution on all the crops.

Dr.G.Subramanian computed simple annual growth rates of area, production and products of various pulses. He also describes the state-wise production and Growth rate of black gram and other pulses. The growth rate of black gram in Tamilnadu is 1.43 percent after green revolution.

Dr.Masood Ali, Director and Dr.Shivkumar, principal scientist of head of improvement division Indian Institute of Pulses Research Kanpur, in a survey of Indian agriculture 2007 says that Domestic production of pulses is 14.94 million tonnes in 2003-04 had declined to 13.38 million tonnes in 2004-05 and to 13.11 million tonnes in 2005-06. The growth rate is decreased 0.56 percent from 2003-04 to 2005-06; whereas in 2005-06 it is declined as 1.83 percent. They concluded that compound growth rate of area under pulses cultivation. Production and productivity has been increases due to increase in the yield per unit area.

OBJECTIVES OF THE STUDY

1. To study the labour utilization and input – output structure of black gram production in the study area.
2. To analyze the cost and return structure of farmers in the black gram cultivation in the study area.

RESEARCH METHODOLOGY

The present study applies Descriptive Research Design. The present research study utilizes both primary and secondary data sources. Primary data was collected through interview schedule method with the aid of a structured questionnaire. The Secondary data was collected by referring to Magazines, Journals, Reports from



Directorate of Economics and Statistics, Government of Andhra Pradesh, Reports from Directorate of Agriculture, Government of Andhra Pradesh.

For conducting this research study and in order to draw the required data from the identified sample respondents, Prakasam district of Andhra Pradesh was selected as the sampling area. Prakasam district ranks the first place in the state with regard to the production of pulses and certain commercial crops. This district is the top producer of pulses across the state and hence it was selected as the sampling area. The sampling technique applied for the present study was Proportionate Random sampling technique. The present research study proposes to restrict the pulses cultivating farmers into two categories namely small farmers and large farmers. The farmers cultivating less than five acres of land were grouped as small farmers and farmers cultivating more than five acres were grouped as large farmers. As the Prakasam district produces various types of pulses, only one Black gram is benchmarked as the sampling category for the present study. The total sample size for the present research work is 100. The sample respondent comprises two categories 50 small farmers and 50 large farmers.

Dimensions / Variables for the Study

The following dimensions were considered by the researcher for conducting the present research study:

- i. Labour utilization and Input-Output structure
- ii. Cost and Returns structure

Statistical Tools

In order to draw meaningful inferences from the collected data the following statistical tools were applied. The collected data was reduced to the form of tables on which statistical tools like Mean scores, Standard Deviation and Cost Component Analysis were applied.

DATA ANALYSIS

Cost and Returns Structure

TABLE 1
The per acre average cost and returns structure of large and small farmers cultivating black gram

SI. No.	Cost Component	Large Farmers	Small Farmers	Overall Farmers
1	Operating Cost (Cost A) (Human labour, Bullock labour, Fertilizer and Pesticides cost, seed cost, manure cost, mechanical power and interest on working capital)	11690.68	11656.82	1167.75
2	Rent	1260.14	1268.29	1264.24
3	Interest as fixed capital (excluding land cost) land revenue, less and taxes, depreciation of implements and machinery	652.26	656.18	654.22
	Total – Cost C (total)	13603.08	13581.29	13592.185
	Yield per acre in kg	726.19	738.24	732.22
	Gross Returns (Rs.)	46309.52	46594.16	46501.84
	Net Returns (Rs.) (Gross returns – total cost C)	32706.44	32993.13	32909.66

Source : Computed

The **table no. 1** shows the per acre average cost and returns structure of large and small farmers cultivating black gram pulses. The table shows that with regard to the black gram cultivation the operational cost of cultivation for the large farmers was found to be Rs.11690.68 and it was found to be Rs. 11656.82 in the case of small farmers category. The yield per acre was found to be 726.19 Kgs for large farmers and it was found to be 738.24 kgs in the case of small farmers.

The result denotes that the small farmers cultivating black gram were getting higher yield and there by higher net income than the large farmers category . The result further shows that the small farmers category in the black gram pulses cultivation were getting higher yield and their by higher net income than large farmers .

TABLE 2
Per acre percentage cost of various cost components to total cost of black gram

Sl. No.	Cost Component	Large Farmers	Small Farmers	Overall Farmers
1	Cost A (Human labour, Bullock labour , Fertilizer and Pesticides cost, seed cost, manure cost, mechanical power and interest on working capital)	85.93	85.84	85.89
2.	Rent	9.26	9.33	9.29
3	Interest as fixed capital (excluding land cost) land revenue, less and taxes, depreciation of implements and machinery	4.81	4.83	4.82
	Cost C (Total)	100.00	100.00	100.00

Source : Computed

The **table no. 2** shows the pre acre percentage cost of various cost components to total cost of back gram. It shows that with regard to the large farmers category, the total production cost (Cost A) was found to be 85.93 percent of the total cost (cost C) and the rent cost component was found to be 9.26 and the aspects of interest as fixed capital component were found to be 4.81 percent of the total production cost.

The table further shows that with regard to the small farmers category, the total production cost (Cost A) was found to be 85.84 percent of the total cost (cost C) and the rent cost component was found to be 9.33 and the aspects of interest as fixed capital component were found to be 4.83 percent of the total production cost.

The result shows that with regard to the percentage cost of variable inputs to total cost, it was found that the rent for land was high for small farmers than in the case of large farmers category.

TABLE 3
Economics of cultivating pulses for large and small farmers cultivating black gram

Sl. No.	Particulars	Large Farmers	Small Farmers
1.	Gross return (Rs.)	46309.52	46594.16
2.	Total operating cost (Cost A) (Rs.)	11690.68	11656.82
3.	Net return over Cost A (Rs.)	34618.84	34937.18
4.	Total production cost (Cost C) (Rs.)	13603.08	13581.29
5.	Net return over cost (Cost C) (Rs.)	32706.44	32913.13
6.	Cost of production per kg. (Cost A) (Rs.)	16.09	15.79
7.	Cost of production per kg. (Cost C) (Rs.)	18.73	18.39
8.	Input-Output Ratio (Gross return/Cost A)	6.96	3.99
9.	Input-Output Ratio (Gross return/Cost C)	3.41	3.44
10.	Cost-Benefit Ratio (Net return over Cost C / Total Production Cost C)	2.41	2.43

Source : Computed

The **table no. 3** shows the economics of cultivating pulses for large and small farmers cultivating black gram. It shows that with regard to the large farmers cultivating black gram, the input-output ratios in terms of operational



cost and total cost were found to be 3.96 and 3.41 respectively. The cost benefit ratio was found to be 2.41 in the case of large farmers cultivating black gram.

The table further shows that with regard to the small farmers cultivating black gram, the input-output ratios in terms of operational cost and total cost were found to be 3.99 and 3.44 respectively. The cost benefit ratio was found to be 2.43 in the case of small farmers cultivating black gram.

The result depicts that the small farmers cultivating black gram was more beneficial in terms of both yield and profit per acre. The result further denotes that the total cost for large farmers category was higher and it indicates that there is a serious requirement for a more intensive care in case of inputs in the cultivation of black gram pulses.

FINDINGS OF THE STUDY

- The result denotes that the costs of all the inputs were found to be higher for small farmers category when compared to large farmers category. The result further shows that the small farmers category in the black gram pulses cultivation were getting higher yield and their by higher net income than large farmers.
- The result shows that with regard to the percentage cost of variable inputs to total cost, it was found that the rent for land was high for small farmers than in the case of large farmers category.
- The result depicts that the cultivation by small farmers cultivating black gram was more beneficial in terms of both yield and profit per acre. The result further denotes that the total cost for large farmers category was higher and it indicates that there is a serious requirement for a more intensive care in case of inputs in the cultivation of black gram pulses.

CONCLUSION

After analyzing the whole data, it can be stated that there exists a significant difference between the input-output structure of farmers cultivating Black gram pulses and also there exists a significant yield gap difference between large scale and small scale farmers producing Black gram pulses. The study further concludes that the pulses cultivation in the study area is promoting agricultural employment for the local people and more farmers are tending towards the cultivation of black gram in the study area.

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