

RESEARCH PAPER

# Management of Bengal gram seed production by Karnataka state seeds corporation (KSSC) Ltd., Gadag

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## ABSTRACT

The present study was conducted in Gadag district for the study, 50 bengalgram seed production farmers were selected randomly in the study area. All five taluks of Gadag district were considered for study and the results obtained through simple averages and percentages. The results revealed that, estimated per hectare cost of production of bengalgram seed was Rs 34,940.97. The per hectare average yield of bengalgram seed was 14.37 quintal. The per quintal procurement price was Rs. 6,066.00. The gross returns of bengalgram seeds were Rs. 87,168.42 per hectare. The net returns of bengalgram seeds was Rs. 50,767.01 and returns per rupee of investment was 1.45.

**KEY WORDS :** Production, Cost, Returns, KSSC, Bengalgram

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**A**griculture is the main occupation, nearly 58 per cent of the population involved in India. India has become self sufficient in food grain production in recent years. During the last three and half decades with the introduction of fertilizer responsive High yielding varieties (HYV's) of crops in mid-sixties, the food grain production in the country was 72 million tonnes during 1965-66 and now it increased to 272 million

tonnes in 2016-17(India stat). Contrary to earlier increase has come mainly due to increase in area but the recent increase has come through increase in productivity.

Seed is the basic, cheapest, least expensive and most important input in agriculture, which holds the key to farm productivity and profitability. Quality seed largely determines the success of modern farming as other management and cultural practices come into play only after the germination of seeds and establishment of seedlings. In fact, seed is the real vehicle of production and other inputs like water and fertilizer can be regarded as fuel. Inputs such as fertilizer, manure and irrigation are needed to realize the potential of seed, whereas pesticides restrict the loss of output. A quality seed offers great potential for boosting agricultural production. The seed was declared as an essential commodity in 1983 under the Essential Commodities Act, 1955.

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Though the importance of quality seeds was recognized in the early part of 20<sup>th</sup> century when farmers started purchasing improved varieties of seeds, not much has happened till the end of first five year plan. This was in spite of the recommendations of Royal Commission on Agriculture (1928) and later Grow More Food Committee (1952). During the second five year plan, special emphasis was given to multiplication of foundation seed, multiplication farms together with 4320 seed stores were set up at block level in the country. Agricultural Universities were set up and co-ordinated research projects were started in maize, sorghum and pearl millet and hybrids were released, in the third five year plan the seed sector was provided with organizational base by setting up the National Seeds Corporation (NSC).

High yielding varieties of major cereals of wheat and paddy were introduced and multiplied. Later in 1969 Tarai Development Corporation was set upto produce certified seeds in 16000 hectares. In the same year, the State Farmers Corporation of India was set upto produce certified seeds of cereals, cotton and others.

To give the constitutional support for production and distribution of quality seeds, Seed Act was passed in 1966 and started its operation on 1969. Then Seed Review Team was constituted to suggest measures to revitalize the seed industry. The team after visiting many countries gave its recommendations covering various aspects of seed industries most of which were accepted by the Government of India. The National Commission on Agriculture (1972) also made several recommendations to develop a viable seed industry in the country. The high level conference with the representatives of state governments, the Indian Council of Agricultural Research (ICAR) and State Agricultural Universities (SAU) was held to examine the recommendations of National Commission on Agriculture. A number of schemes were started in the fifth five year plan to promote seed industry in the country. A joint working party set up in 1974 examined various aspects of seed sector and formulated the National Seed Project. The idea was to develop a broad based decentralized network of seed production agencies with adequate infrastructure for production, processing, storage and distribution of seed at the reasonable cost. The State seed corporations (SSCs) were set up in different states of the country in a phased manner.

The State of Karnataka is one of the pioneer state in organizing the seed industry in the country. As a result of the sound policies pursued by the government since 1956, a number of seed firms and seed co-operatives started working. The Karnataka Agro Industries Corporation Limited established its own seed wing. Further, the Karnataka Co-operative Seed Marketing Federation was established. In spite of these developments, the state was going through anxious periods as far as supply of quality seed was concerned.

During 1973, Karnataka State Agro-seeds Corporation Limited was established as a subsidiary organization of Karnataka Agro-industries Corporation Limited to be in exclusive charge of seed production and marketing. The Government of Karnataka participated in the National Seed Project –II during 1979. Under the National Seed Project, with the financial assistance of the World Bank, the above subsidiary organization was made an independent corporation called “Karnataka State Seeds Corporation Limited”.

The Karnataka State Seeds Corporation (KSSC) was established to widen the network of production and distribution channels for certified seeds in Karnataka. Since its establishment, the corporation is playing a pivotal role in production and marketing of quality seeds in the state. The mission of the corporation is to be leading agency for accelerating agricultural productivity and improving the viability of agricultural sector. The KSSC organizes the seed production on the farms of the registered seed growers and procures and markets the seeds through its own retail outlets situated at different places throughout the state. In this connection, management of bengalgram seed production by KSSC at Gadag branch was taken for study.

## METHODOLOGY

The study was conducted in Gadag district where the KSSC branch is located. The research study was based on primary data, primary data was obtained from the sample farmers and KSSC officials through personal interview method with the help of pre-tested questionnaire exclusively designed for the study. The random sampling technique was adopted for selection of respondents. From Gadag district all the five taluks namely, Gadag, Mundargi, Shirahatti, Nargunda, Ron were selected. Tabular analysis and percentages were followed for analysis of the data. The data pertaining to input utilization,

labour used and cost and returns structure in bengalgram seed production was obtained during 2016-17.

## ANALYSIS AND DISCUSSION

The results revealed that an average quantities of inputs used per hectare of bengalgram seed production were presented in Table 1 and indicates that the quantum of seeds used by sample farmers were 50 kg of seeds per hectare and the seeds were provided by KSSC. The amount of fertilizer used was 108.32 kg and the amount of plant protection chemicals used was 1.025 litre per hectare of bengalgram seed production. Plant protection chemicals were used as a sprayers and it controls the disease and fertilizer also influence the increasing yield and also protects from pest and disease. The sample seed growers employed about an average 47.50 man days of human labour per hectare of bengalgram seed production. Human labour usage was higher mainly because, bengalgram seed production requires a more number of human labour in various activities like sowing, harvesting, weeding operation, etc. The bullock labour used by respondents was found to be 14.30 bullock pair days and 9.75 machine labour used by respondents. Bullock labour usage was more compared to machine labour because bullocks were used in ploughing, harrowing, sowing and intercultivation whereas machines

were used in only few operations. Similar results were reported by Chulaki (2001).

The labour use pattern followed in bengalgram seed production is presented in Table 2. Total numbers of human labour required was 47.50 man days out of this harvesting consumed highest number of man days (17.00 man days) followed by hand weeding (15.50 man days), sowing (6.25 man days), fertilizer application (5.00 man days), spraying (3.75 man days) per hectare of bengalgram seed production. Harvesting, hand weeding and sowing consumes more human labour because these operations exclusively depend on human labour. Fertilizer applications and spraying operations generally requires less human labour compared to sowing and harvesting. Total number of bullock labour required were 14.30 in this sowing required highest bullock labour (6.25 pair days), ploughing (3.00 pair days) followed by inter cultivation (2.50 pair days) per hectare of bengalgram seed production. The farmers have no other alternative ways to do all these above operations except bullock labour and majority of the sample farmers possessed bullock pairs and they wanted to make use of them efficiently. Total amount of machine labour required was 9.75 in that harrowing required (3.75 machine hours) followed by ploughing (3.00 machine hours) and harvesting (3.00 machine hours). Using machine labour

Sr. No.	Inputs	Units	Quantity
1.	Seeds	kg	50.00
2.	Human labour	Man days	47.50
3.	Bullock labour	Pair days	14.30
4.	Machine labour	hr	9.75
5.	Fertilizers	kg	108.32
6.	Plant protection chemicals	l	1.025

Sr. No.	Particulars	Human labour	Bullock labour	Machine labour
1.	Ploughing	-	3.00 (20.97)	3.00 (30.76)
2.	Harrowing	-	2.55 (17.83)	3.75 (38.48)
3.	Sowing	6.25 (13.15)	6.25 (43.70)	-
4.	Fertilizer application	5.00 (10.52)	-	-
5.	Inter cultivation	-	2.50 (17.48)	-
6.	Hand weeding	15.50 (32.63)	-	-
7.	Spraying	3.75 (7.89)	-	-
8.	Harvesting	17.00 (35.78)	-	3.00 (30.76)
	Total	47.50 (100)	14.30 (100)	9.75 (100)

Figures in parenthesis indicate percentage to the total.

means it would take less time compared to bullock labour. Similar results were obtained by Sameer (2013).

The results on economic aspects of cost and returns of bengalgram seed production is presented in Table 3 and indicated that the total cost incurred by the bengalgram seed growers was Rs. 34,940.97 per hectare of bengalgram seed production in the study area. The total cost incurred encompasses two important costs such as variable cost and fixed cost. Out of the total variable cost, variable cost (92.13 %) shared maximum proportional compared to fixed cost (7.87%). Out of the total variable cost for human labour shared a major portion (26.91 %), followed by the expenditure made on bullock labour (26.80 %), machine labour (13.68%) this reflects increased dependency of sample seed growers on human labour because bengalgram operations like harvesting, weeding and sowing needs more number of human labour. Similarly dependency on bullock labour was more as it was easily available and more economical compared

to machine labour. While the expenses made on fertilizer (7.44 %), plant protection chemicals (4.40%) and interest on working capital (3.56 %). Expenditure made on seeds (9.30 %) costs per hectare of bengalgram seed production mainly due to the easy availability of seeds from the KSSC to farmers in the study area.

Fixed cost contributed 7.87 per cent to the overall cost of production. Among the total fixed cost, the land rent (6.01 %) was major cost this is because which was considerably high since the farm implements usage in the recent past have been increasing. Among all the total fixed costs, interest on fixed capital (0.84%) and land revenue (0.05 %) contributed a minor share among the total fixed costs per hectare of bengalgram seed production in the study area. The results presented in Table 3 on yield and returns realised by the respondents of bengalgram seed production farmers indicated that the average yield of the bengalgram seed production was 14.37 quintals per hectare. Yield was more compared to

Table 3 : Cost and returns structure in bengalgram seed production		(Rs./ha)	
Sr. No.	Particulars	Farmers (n = 50)	
		Cost	Per cent
1.	Variable cost		
	Material cost		
	Seeds (supplied by KSSC)	3,250.00	9.30
	Fertilizer	2,599.68	7.44
	Plant protection chemicals	1,537.50	4.40
	Labour cost		
	Human labour	9,405.95	26.91
	Bullock labour	9,366.07	26.80
	Machine labour	4,777.50	13.68
	Interest on working capital (8 %)	1,246.83	3.60
	Total variable cost	32,183.53	92.13
2.	Fixed cost		
	Land revenue	20.00	0.05
	Land rent	2,100.00	6.01
	Depreciation	342.00	0.97
	Interest on fixed capital (12 %)	295.44	0.84
	Total fixed cost	2,757.44	7.87
3.	Total cost of cultivation (1 +2)	34,940.97	100.00
4.	Yield (q /ha)	14.37	
5.	Procurement rate of KSSC per quintal	6,066.00	
6.	Gross returns	87,168.42	
7.	Charges paid by farmers to KSSC towards registration fee processing, certification etc.	1460.44	
8.	Net returns	50,767.01	
9.	Return per rupee of investment	1.45	

Per cent figures to the total cost of production.

other farmers because these seed growers should maintain the standards of KSSC during sowing like isolation distance, seed multiplication rate etc. The gross return obtained per hectare by the seed growers was Rs. 34,940.97 per hectare. The net return per hectare of bengalgram seed production obtained by the sample seed growers was Rs. 50,767.01. In the table also indicated that the returns per rupee of investment were 1.45. Similar results were obtained by Admelo (2017). The net returns per rupee of investment was more than one which indicates that bengalgram seed production is financially more beneficial because the procurement rate for seeds was 25 per cent more than market price for seeds. Similar work related to the present investigation was also carried out by Kavitha *et al.* (2013); Naik *et al.* (2012) and Prasad Vishnu (2003).

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