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Constraints and suggest suitable policy measure of black gram, grower on sample farms in Shahjahanpur district of western Uttar Pradesh

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Abstract

Black gram is one the important pulse crops grown throughout India. Urd grain contains about 24 per cent protein, 60 per cent carbohydrates, 1.3 percent fat, and is the richest among the various pulses in phosphoric acid, being 5 to 10 times richer than in other. India is the largest Producer and consumer of pulses in the world and also a key player with 25 per cent share in the global pulses basket from an area about 33 per cent (Ali.M.2007). Total pulses produced in India during 2010-11 was 14.76 million tons covering area of about 23.63 million hectare with average productivity of 625 kg/hectare (Anonymous 2010). In Uttar Pradesh, total area under urd was around 3.91 lakh hectare with production of 1.72 lakh tons and productivity of 439.90 kg per ha. During 2007-08 (Anonymous, 2011) Black gram is the major pulse crop grown in Shahjahanpur district of Western Uttar Pradesh. Problem related with the knowledge and skill of Black gram cultivation was accepted by 48.00 per cent of respondents. Constraints related with the marketing stood II rank realized by 37 per cent of sample farms. Constraints related with the labour problem were emphasized by 36 per cent of sample farms. Constraints related with credit requirement were emphasized by 29 per cent of sample farms. The problems related with managerial operations were focused by 26 per cent of sample farms.

Keywords: weighted mean & tabular analysis

Introduction

Black gram is one the important pulse crops grown throughout India. It is consumed in the form of 'dal' It is the chief constituent of 'papad' and also of 'bari' (spiced balls) which make a delicious curry. Urd is also used in preparation of 'halwa' and umarti; It is used as nutritive fodder specially for milch cattle. It is also used as a green manuring crop. Urd grain contains about 24 per cent protein, 60 per cent carbohydrates, 1.3 percent fat, and is the richest among the various pulses in phosphoric acid, being 5 to 10 times richer than in other.

Black gram is probably native of India as is seen from the Vedic literature. It is grown all over the country in Kharif, and summer seasons. In northern India it is grown in Kharif and summer seasons while in south India, It is grown in Rabi season also.

India is the largest Producer and consumer of pulses in the world and also a key player with 25 per cent share in the global pulses basket from an area about 33 per cent (Ali.M.2007). Total pulses produced in India during 2010-11 was 14.76 million tons covering area of about 23.63 million hectare with average productivity of 625 kg/hectare (Anonymous 2010). Black gram is cultivated over a wide range of agro-climate Zones of the country. It is ideal for catch cropping, inter cropping and relay cropping. In Uttar Pradesh, total area under urd was around 3.91 lakh hectare with production of 1.72 lakh tons and productivity of 439.90 kg per ha. During 2007-08 (Anonymous, 2011) Black gram is the major pulse crop grown in Shahjahanpur district of Western Uttar Pradesh. No scientific study so far has been conducted in the study area.

Methodology

The methodology of the present study has been discussed under the following heads:

1. Sampling technique,
2. Method of enquiry and collection of data,
3. Period of enquiry and
4. Analytical tools used.

1. Sampling Techniques

(I) Selection of district and block

Shahjahanpur district was purposively selected to avoid the inconvenience of the investigator Jalalabad block of district Shahjahanpur enjoyed highest acreage under black gram also purposively selected for the study area.

(ii) Selection of villages

A list of all the villages falling under Jalalabad block was prepared and arranged in ascending order of area covered under black gram crop and 5 villages were selected randomly from this list.

(iii) Selection of respondents

Separate lists of black gram growers of selected five villages were prepared along with their size of holding and categorized into four groups i.e.

- (1) Marginal farmers : Below 1 ha
 (2) Small farmers : 1-2 ha
 (3) Medium farmers : 2- 4 ha
 (4) Large farmers : 4 ha and above

From this lists a sample of 100 respondents was drawn following the proportional allocation under different categories.

Table 1: Village wise total number of farmers under different size group of farms.

SI. No.	Name of the village	Size of Holding				Total
		Marginal	Small	Medium	Large	
1.	Rauli Bauri	28	15	10	7	60
2.	Gurgava	24	11	9	6	50
3.	Nagariya-Bujurg	31	8	7	4	50
4.	Sarkhanda	30	16	10	5	61
5.	Mudiya Khurd	29	15	10	6	60
Total		142	65	46	28	281

Table 2: Village wise number of the selected farmers under different size group of farms.

S. No.	Name of the village	Size of Holding				Total
		Marginal	Small	Medium	Large	
1.	Rauli Bauri	10	5	4	2	21
2.	Gurgava	9	4	3	2	18
3.	Nagariya-Bujurg	11	3	2	1	17
4.	Sarkhanda	11	6	4	2	23
5.	Mudiya Khurd	10	5	4	2	21
Total		51	23	17	9	100

2. Collections of Data and Method of Enquiry

The primary data were collected by survey method through personal interview method with the help of pre – structured pre tested schedule. The secondary data were collected from various books, reports and records of the block and district head quarter.

The collected data were verified from experienced persons and village leaders of the sample villages. Every possible care measure were taken to ensure the accuracy and reliability of the information. The information furnished by respondents was properly edited through personal check and cross check. The help of Block level officer, Lekhpal, Gram Pradhan and village leaders were sought for obtaining correct and reliable information. The study was based mainly on primary data, but secondary data were also used.

3. Period of Enquiry: The study based on agricultural year 2011-12.

4. Analytical Tools: For the interpretation of data the following analytical tools were used.

- Tabular Analysis:** Tabular analysis was made to compare different aspect of farm business. For tabular analysis, simple average, percentages were.
- Average:** The simplest and the most important measures of average which have been used in to statistical analysis of the data is weighted mean. The formula to estimate this average is given below:

$$W.A = \frac{\sum W_i X_i}{\sum W_i}$$

Where,

W.A. = Weighted Average

W_i = Weight of X_i

X_i = Variable

Functional analysis

Production function analysis was carried out to examine resource use efficiency and MVP of different resources on the sample farms. Different types of production function were explored, out of them only Cobb-Douglas production function was found best fit. The form of Cobb-Douglas production function used for analysis is:

$$Y = a x_1^{b_1} x_2^{b_2} \dots x_n^{b_n}$$

$$Y = a x_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} e^u$$

Where,

Y= Dependent variable (output values in Rs. /ha.)

a = Intercept.

U= Stochastic error.

X_i = ith independent variable (input values in Rs. /ha.)

X₁= Seed (Value Rs. / ha.)

X₂= Manure and fertilizer (Value Rs. / ha.)

X₃= Irrigation charges (Rs. / ha.)

X₄= Total labour (Rs. / ha.)

b_i = Production elasticity with respect to X_i

Cobb-Douglas production function used in log form

$$Y = \log a + b_1 \log x_1 + b_2 \log x_2 + b_3 \log x_3 + b_4 \log x_4 + u$$

The values of the constant (a) and coefficient (b_i) in respect of independent variables in the function have been estimated by using the method of least squares.

(iv) Estimation of Marginal Value Product

The marginal value product of input was estimated by taking partial derivatives of returns with respect to the input concerned, at the geometric mean level of inputs.

$$(MVP)X_i = \frac{b_i \bar{y}}{\bar{X}_i}$$

Where,

b_i = Production elasticity with respect to X_i

\bar{y} = Geometric mean of y (output values in Rs./ha.)

\bar{X}_i = Geometric mean of X_i (input values in Rs./ha.)

Result and Discussion

The problem faced by the black gram growers of the study area is presented in table 4.6.17. The sample farmers had been suffering from number of problem. For the presentation, the problems were categorized in five major groups, which are as follows.

1. Technical problems

It is related to the knowledge of quality seeds, its rate and time of sowing. Required balance dose of fertilizer, name, quantity and method of application of herbicide etc. Majority of the farms were facing various types of technical problems in black gram cultivation.

2. Managerial problem

It included the knowledge and experience regarding decision taking, timely arrangements of various inputs irrigation facilities and disposal of produce at appropriate place and time. Most of the black gram growers were not adopting appropriate managerial measure.

3. Labour problem

It relates to the availability of sufficient number of labours during peak season of the farm work. During peak season, unavailability proper number of labour problem was faced by majority of black gram cultivators.

4. Financial problem

The arrangement of required fund at cheapest interest rate and appropriate time were included as financial problem. Most of the black gram growers were reported the financial problem in the study area.

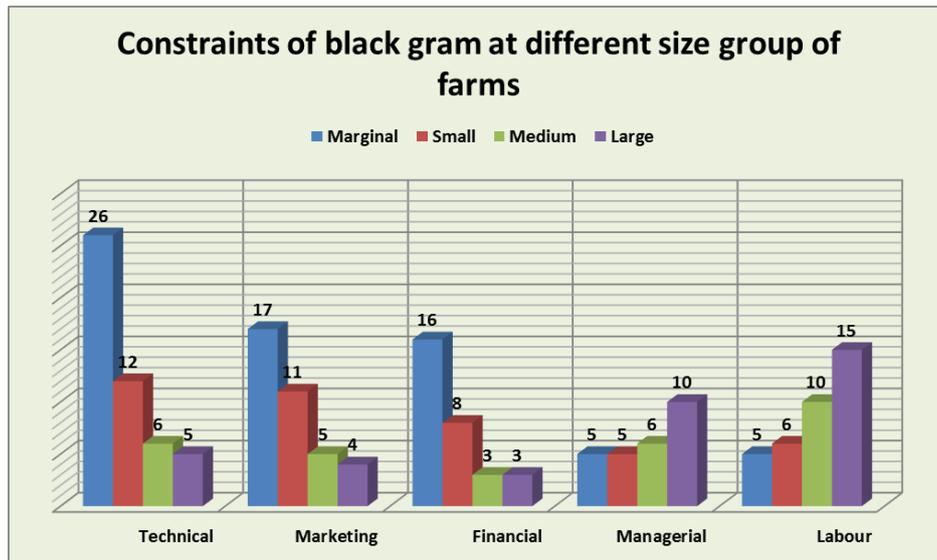
5. Marketing problem

Problem of forced sell, storage, transportation and complication at Govt. purchase centers were faced by the black gram growers of the study area. The real picture of the problem realized and emphasized by the various size group of sample farms are presented in table 4.4.17. It is evident from the table that the problems related with the technical knowledge and skill were realized by a majority of (48.00 percent) black gram grower of the study area as such this problem was ranked Ist by the sample farmers. The constraints related with the marketing of the surplus produce were emphasized by 37.00 per cent of the farmers. Where as financial problems were focused by comparatively less number of farmers i.e. 29.00 per cent and the problems related with managerial operations were accepted by one third population (i.e.29.00 per cent)of sample farms. This way the problems related with the marketing, financial, managerial and labour aspects stood on II, III, IV & V rank, respectively.

Table 3: Constraints of black gram production on different size group of farms in the study area.

S. No.	Particulars	Size of sample farms					Ranks
		Marginal	Small	Medium	Large	Total	
1.	Technical problem	26 (70.27)	12 (42.85)	6 (33.33)	5 (29.41)	48 (100)	I
2.	Marketing problem	17 (45.94)	11 (39.28)	5 (27.77)	4 (23.52)	37 (100)	II
3.	Financial problem	16 (43.24)	8 (28.57)	3 (16.66)	3 (17.64)	29 (100)	IV
4.	Managerial problem	5 (13.51)	5 (17.85)	6 (33.33)	10 (58.82)	26 (100)	V
5.	Labour problem	5 (13.51)	6 (21.42)	10 (55.55)	15 (88.23)	36 (100)	III
Total sample farms		37 (100)	28 (100)	18 (100)	17 (100)	100	





Suggestions

1. Different Government departments like department of Agriculture, plant protection and irrigation should assure the timely and adequate supply of the inputs and irrigation water.
2. Government should also ensure that the quality inputs are supplied to the farmer by different private agencies.
3. Agencies involved in disseminating the improved scientific techniques should organize more practical training programmers in order to increase the knowledge and skill of black gram growers.
4. Awareness among the farmers should be developed to have the market information which may help for efficient disposal of marketable surplus.
5. Any agricultural knowledge and new technology farmers should call "Kisan Call Center" No. 18001801551 and "IFFCO Kisan Call Center" also provide the facilities for the farmer regarding agriculture on his number 534351.
6. Regulated markets in case of food grain should be developed and more number of Government purchase centers during the seasons should be established.
7. Remunerative support price of black gram should be announced well in advance.
8. Through the Kisan Credit Cards and other financial schemes of the institutional credit have been proved helpful for the farmers. But to make it more efficient these facilities should be easier and liberal.
9. Adoption of co-operative farming and formation of SHG may help to solve the many problems of the producers.

Conclusion

Black gram, also known as urdbean, mash, black maple etc. is an important short-duration pulse crop grown in many parts of India. This crop is grown in cropping systems as a mixed crop, catch crop, sequential crop besides growing as sole crop under residual moisture conditions after the harvest of rice and also before and after the harvest of other summer crops under semi-irrigated and dryland conditions. Its seeds are highly nutritious with protein (25-26%), carbohydrates (60%), fat (1.5%), minerals, amino acids and vitamins. Seeds are used in the preparation of many popular dishes.

Black gram has been raised mainly in tropical to sub-tropical countries where it is grown mainly in summer season. It is grown in India, Pakistan, Sri-Lanka, Burma, and some countries of South East Asia. In India, black gram is very popularly grown in Andhra Pradesh, Bihar, Madhya Pradesh,

Maharashtra, Uttar Pradesh, West Bengal, Punjab, Haryana, Tamil Nadu and Karnataka with an area of about 3.29 million ha with a total production of 1.60 million tones with an average productivity of 485 kg/ha. (Anonymous 2010).

India is the largest Producer and consumer of pulses in the world and also a key player with 25 per cent share in the global pulses basket from an area about 33 per cent (Ali.M.2007). Total pulses produced in India during 2010-11 was 14.76 million tons covering area of about 23.63 million hectare with average productivity of 625 kg/hectare (Anonymous 2010).

Black gram is cultivated over a wide range of agro-climate Zones of the country. It is ideal for catch cropping, Inter cropping and relay cropping. In Uttar Pradesh the total area under urd was around 3.91 lakh hectare with production of 1.72 lakh tons and productivity of 439.90 kg per ha. During 2007-08 (Anonymous, 2011). In District Shajahanpur, Black gram was grown in 9058 hectare and production was 3.88 quintal however total production was 3514 metric tons in 2009-10. (Statistical Bulletin Directorate of Statistic U.P.2011-12).

1. Problem related with the knowledge and skill of Black gram cultivation was accepted by 48.00 per cent of respondents.
2. Constraints related with the marketing stood II rank realized by 37 per cent of sample farms.
3. Constraints related with the labour problem were emphasized by 36 per cent of sample farms.
4. Constraints related with credit requirement were emphasized by 29 per cent of sample farms.
5. The problems related with managerial operations were focused by 26 per cent of sample farms.

Suggestion for improving the economics of Black gram cultivation.

1. Timely and adequate supply of quality inputs and irrigation water should be assured.
2. More practical programmers of transfer of technologies should be organized. Awareness about market information among the farmers should be developed.
3. More easier and liberal credit facilities should be extended to the farmers.
4. Remunerative support price should be declared by Govt. in advance and more Govt. Purchase centers should be established in season.
5. Production and marketing through co-operatives/ SHG

may help to solve the many problems.

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