Original Research Article

Economic Analysis of Production, Marketing and Constraints of Black Gram in Auraiya District of Uttar Pradesh

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A B S T R A C T

Pulses account for around 20 per cent of the area under food grains and contribute around 7-8 per cent of the total food grains production in the country. The contribution of Rabi season pulses to the total pulse production is more than Kharif season pulses.. India is the largest producer and consumer of Black gram in the world. Black gram is a rich protein food. It contains about 26 percent protein, which is almost three times that of cereals. Black gram supplies a major share of protein requirement of vegetarian population of the country. District Auraiya was purposively selected and two blocks, namely Auraiya and Ajeetmal selected purposively for the study, a separate list of all villages of selected block was prepared along with acreage under black gram cultivation, 5-5 villages were selected from each block randomly for study. Finally 100 respondents were selected following the proportionate random sampling. These selected respondents divided into three categories according to land holding, 44 marginal (below 1 ha), 37 small (1-2 ha) and 19 mediums (2-4 ha & above). The data were collected by personal interview method with the help of pre-structured schedule. The period of enquiry pertains to agricultural year 2020-21. Tabular analysis of data was applied for arriving the results. Problems related with timely unavailability of inputs stood rank I constraints in marketing (rank I) as it faced the total score of 29.95 per cent out of total score assigned, followed by Timely availability of Inputs (2nd), Technical problems rank III and any other problems IV rank corresponding to the score assigned as 28.44, 23.18 and 18.43 respectively. These problems solved by supply of inputs like quality seed, fertilizer, organic cultures, plant protection and weed control chemical should be assured by Govt. agency and private centers in times. Financial institution should assure that the farmers can get required cash in their KCC accounts as and when needed. It concluded that the problems of production and marketing can be solved through joint effect of farmers as well Govt. agencies. Problem related to blue bull problem can be solved by fencing around the field and natural calamities problem can be solved by well planned activity. Problem related to Roads solved by developing the pakka road main road to farmers field, so it helps the farmers which can be easily connect the field with market and they can also helps in Transport facility.

Introduction

India produces a variety of pulse crops and is recognized globally as a major player in pulses contributing about 25 per cent to the global production, consumer (27 per cent of world consumption) and importer (14 per cent) of pulses in the world. The projected pulses demand is 32 million tonnes by 2030 (Vision 2030) and 50 million tonnes by the year 2050 which necessitates an annual growth rate of 4.2 per cent (Vision 2050). India primarily produces a variety of pulse crops like chickpea, lentil (masur), red gram (tur), black gram (urd) and green gram (moong). Pulses account for around 20 per cent of the area under food grains and contribute around 7-8 per cent of the total food grains production in the country. The contribution of Rabi season pulses to the total pulse production is more than Kharif season pulses. The area under pulses in India has increased from 19.09 million hectares in 1950-51 to 23.1 million hectares in 2014-15, showed an increase of 21 per cent whereas the production of pulses during the same period has increased from 8.41 million tonnes to 17.19 million tonnes an increase of over 100 per cent. Similarly, the productivity has increased from 441 kg/ha in 1951 to 744 kg/ha in 2014-15 (Agricultural Statistics at a Glance, 2015). Cultivation of pulses builds-up a mechanism to fix atmospheric nitrogen to N compounds in their root nodules and tend to fix 72 to 350 kg N per ha per year, thereby meeting their own nitrogen requirements to a great extent. 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. Black gram or urid is one of the important pulse crops in India. Black gram (*Vigna mungo* L) reported to be originated in India. Its references have also been found in Vedic texts such as

Kautilya's 'Arthasasthra' and in 'CharakSamhita' lends support to the presumption of its origin in India. India is the largest producer and consumer of Black gram in the world. Black gram is a rich protein food. It contains about 26 percent protein, which is almost three times that of cereals. Black gram supplies a major share of protein requirement of vegetarian population of the country. It is consumed in the form of split pulse as well as whole pulse, which is an essential supplement of cereal based diet. The combination of dal-chawal (pulse-rice) or dal-roti (pulse-wheat bread) is an important ingredient in the average Indian diet. The biological value improves greatly, when wheat or rice is combined with Black gram because of the complementary relationship of the essential amino acids such as arginine, leucine, lysine, isoleucine, valine and phenylalanine etc.

Materials and Methods

Sampling technique

The purposive cum random sampling technique was applied for the selection of district, block, villages as well as respondents (black gram grower).

Method of enquiry and collection of data

Selection of district

The investigator is familiar to the socioeconomic and cultural conditions of the area; it helps in rapport building and authentic data collection. Thus Auraiya district of Uttar Pradesh was selected purposively seeing the convenience of investigator.

Selection of block

A list of all blocks of Auraiya district was prepared and two blocks namely Auraiya and

Ajeetmal having highest area coverage under black gram crop was purposively selected for the study.

Selection of village

A list of all the villages falling under selected blocks Auraiya and Ajeetmal was prepared and five villages were selected randomly from the list.

Selection of respondents

A separate list of all the black gram growers of selected five villages were prepared along by their size of holdings, and were grouped into three categories; [1] Marginal (below 1ha.), [2] Small (1-2 ha.), and [3] Medium (2-4ha.). From this list, samples of 100 respondents were selected following the proportionate random sampling technique.

Period of study

The data were pertained to the agricultural year 2020-21.

Analytical tools

Simple tabular and functional analyses were used to analyze the data for presentation of the results.

Tabular analysis

In tabular analysis the percentages, arithmetic mean & weighted mean were applied.

$$\text{Arithmatic mean} = \frac{\sum X_i}{N}$$

Where i = 1……..n

$$\text{Weighted average} = \frac{\sum W_i X_i}{\sum W_i}$$

Where,

W.A. = Weighted average of Xi

X_i = Variable

W_i = Weights of variable

Results and Discussion

Constraints in production and marketing of black gram

Problems faced by the chickpea grower of the study area in production and marketing of pulses are also studied. It was observed during the survey that the respondents were suffering from a number of problems related with production of chickpea and its marketing. For the purpose of analysis and presentation of the result the problem were categorized in four major groups which are as follows.

Technical problem

It includes the problems related with technical knowledge and skill of the pulses production as knowledge of quality seed, seed rate, sowing technique, fertilizer dose and method of fertilizer application and knowledge and skill of use of plant protection chemical and herbicides, as well as awareness regarding irrigation.

Financial problem

Since improved crop production is based on adoption of scientific technologies which make the crop production capital intensive. Due to lack of working capital farmers are mostly helpless to use the costly inputs to harvest the expected yield potential. Thus the arrangement of required fund at low cost and appropriate time was considered as financial problem.

Management problem

Sample farmer of the study area were also interviewed to assess their managerial capacity regarding decision making capacity and execution of the farm plans in order to improve the farms profitability.

This managerial capacity of the respondents was directly associated with the managing the required resources like finance and other inputs. Thus the problems of knowledge about decision making timely arrangement of various inputs were considered for the study.

Labour problem

Though the maximum operation of crop production was performed by different machine but the human labour is not fully replaced by mechanization.

Farmers were seen, facing scarcity of hired human labour during the peak season of crop production.

Marketing problem

Marketing is the next important activity of the agribusiness after production. Different marketing facilities like transportation, storage, processing which are helpful to offer the remunerative price of the produce to the respondents was considered during investigation as the constraints in marketing of the chickpea.

Other problem

It includes the other major problems related with Blue bull, Canal irrigation and natural calamity problem, Blue bull and Canal problem is the major problem of the study area due to reason the number pulse grower in study area very low, production and productivity of the study area were also at

lower level. Table 1 revealed that problems faced by farmers categorized by according to ranking.

Table-1 It depicted from the that problems related with timely unavailability of inputs stood rank I constraints in marketing (rank I) as it faced the total score of 29.95 per cent out of total score assigned, followed by Timely availability of Inputs (2nd), Technical problems rank III and any other problems IV rank corresponding to the score assigned as 28.44, 23.18 and 18.43 respectively.

Marketing problems grouped as rank first in which Roads are Undeveloped to do not connect the field with market mostly farmers facing 6.48 per cent followed by MSP is not remunerative enough 6.40 per cent and transport facility are not easily available 5.98 per cent.

At individual level problem related to blue bull problem and natural calamities problem faced by all farmers these problems accounted 7.20 per cent in respect to all problems. Problem related to Roads are not well developed to connect the field with market and Transport facility one of the most serious problems in study area.

Table 2 revealed that Summary and the real picture of the problems realized and emphasized by the various size group of sample farms, presented in the Table 2.

It depicted from the table that problems related with timely unavailability of inputs stood rank I constraints in marketing (rank I) as it faced the total score of 29.95 per cent out of total score assigned, followed by Timely availability of Inputs (2nd), Technical problems rank III and any other problems IV rank corresponding to the score assigned as 28.44, 23.18 and 18.43 respectively. It concluded that the problems of production

and marketing can be solved through joint effect of farmers as well Govt. agencies.

Suggestion to overcome the problems of production and marketing of chickpea

Suggestion to improve the production

To solve the problem of knowledge and skill the farmers training demonstration, field visit and programme of farmer's interaction should be organized by the extension agencies working in the area.

Supply of inputs like quality seed, fertilizer, organic cultures, plant protection and weed control chemical should be assured by Govt. agency and private centers in times.

Financial institution should assure that the farmers can get required cash in their KCC accounts as and when needed.

Co-operative credit societies may play major role in supply of input like seed and fertilizers.

Irrigation sources like Govt. tube well and canals should assure the availability of irrigation water with their full capacity.

To solve the problems of hired human labour the work of MNREGA should be stopped during peak season in the village.

Suggestion to solve the problems of marketing

Like rice and wheat black gram production should be purchase by the Govt. on MSP. Minimum support price of the chickpea should be announced well in advanced before sowing. Black gram processing units should establish in the rural area to reduce the number of intermediary in the channel.

The prices of the black gram in different mandies should be published in the news papers for information to the farmers.

Co-operative marketing societies should be functioning in the area in order to help the farmers for storage and selling of produce at remunerative prices.

Besides these suggestion given by the respondents the investigator suggest that the farmers may come forward to solve their many problems related with production and marketing.

They should regularly contact with the extension person to solve their problems of technical knowledge.

They can from the SHG to manage their financial problems and problems of processing and marketing of pulses.

For regular information of different Govt. plans launched for the farmers benefit, they can contact the Kisan call centre at No. 18001801551 and the IFFCO kisan call centre No. 534351.

At individual level problem related to blue bull problem can be solved by fencing around the field and natural calamities problem can be solved by well planned activity. Problem related to Roads solved by developing the pakka road main road to farmers field, so it helps the farmers which can be easily connect the field with market and they can also helps in Transport facility.

Table.1 Constraints of Black gram production and marketing on different size of farms

S. N o.	Particulars	Sample farms			Total	Rank
		Marginal	**Small**	**Medium**		
A.	**Technical Problems**	**137(21.44)**	**124(24.51)**	**61(25)**	**322(23.18)**	**III**
i.	HYV/hybrid varieties	27(4.23)	22(4.35)	13 (5.33)	62(**4.46**)	
ii.	Seed rate and sowing technique	20 (3.13)	19(3.75)	08(3.28)	47(**3.38**)	
iii.	Seed Treatment	14(2.19)	12(2.37)	05(2.05)	31(**2.31**)	
iv.	Use of bio fertilizer	19(2.97)	17(3.36)	09(3.69)	45(**3.24**)	
v.	(NPK) Fertilizer dose	31(4.85)	29(5.73)	14(5.74)	74(**5.33**)	
vi.	Plant Protection Measure	26(4.07)	25(4.94)	12(4.92)	63(**4.54**)	
B.	**Timely availability of Inputs**	**191(29.89)**	**138(27.27)**	**66(27.05)**	**395(28.44)**	**II**
i.	Irrigation Facility	37(5.79)	21(4.15)	10(4.10)	68(4.90)	
ii.	Chemical and bio fertilizer	28(4.38)	18(3.56)	14(5.74)	60(4.32)	
iii.	Plant Protection chemical & implements	29(4.54)	25(4.94)	12(4.92)	66(4.75)	
iv.	Required amount of finance	39(6.10)	23(4.55)	10(4.10)	72(5.18)	
v.	Quality seed in sufficient quantity	20(3.13)	19(3.75)	05(2.05)	44(3.17)	
vi.	Human and machinery lab.	38(5.95)	28(5.53)	15(6.27)	81(5.83)	
C	**Constraints in Market**	**197(30.83)**	**149(29.45)**	**70(28.69)**	**416(29.95)**	**I**
i.	Roads are not well developed to connect the field with market.	41(6.42)	32(6.32)	17(6.97)	90(6.48)	
ii.	Transport Are not easily available	39(6.10)	29(5.73)	15(6.27)	83(5.98)	
iii.	MSP is not remunerative Enough	41(6.42)	35(6.92)	13(5.33)	89(6.40)	
iv.	Govt. Purchase produce at MSP	10(1.56)	07(1.38)	03(1.23)	20(1.44)	
v.	Village traders are not Purchase the produce at profitable price	35(5.48)	24(4.74)	12(4.92)	71(5.11)	
vi.	Regulated markets fairly facilitate the sale and protect the farmer's interest.	31(4.85)	22(4.35)	10(4.10)	63(4.54)	
D	**Any other problems**	**114(17.84)**	**95(18.77)**	**47(19.26)**	**256(18.43)**	**IV**
i.	Blue Bull	44(6.89)	37(7.31)	19(7.79)	100(7.20)	
ii.	Natural calamity	44(6.89)	37(7.31)	19(7.79)	100(7.20)	
iii.	Canal Problem	26(4.07)	21(4.15)	09(3.89)	56(4.03)	
	Grand Total	**639(100)**	**506(100)**	**244(100)**	**1389(100)**	

Table.2 Summary Constraints black gram production and marketing on different size of farms

S. No.	Particulars	Sample farms			Total	Rank
		Marginal	**Small**	**Medium**		
1.	**Technical Problems**	137(21.44)	124(24.51)	61(25)	322(23.18)	**III**
2.	**Timely availability of Inputs**	191(29.89)	138(27.27)	66(27.05)	395(28.44)	**II**
3.	**Constraints in Market**	197(30.83)	149(29.45)	70(28.69)	416(29.95)	**I**
4.	**Any other problems**	114(17.84)	95(18.77)	47(19.26)	256(18.43)	**IV**
	Grand Total	**639(100)**	**506(100)**	**244(100)**	**1389(100)**	

Constraints analysis of chickpea, constraints in market, timely unavailability of inputs, technical problems, and any other problems were rank-I, rank-II, rank-III and rank-IV. It observed 28.95, 28.44, 23.18 and 18.43 per cent, respectively. To solve the problem of knowledge and skill the farmers training demonstration, field visit and programme of farmer's interaction should be organized by the extension agencies working in the area.

Supply of inputs like quality seed, fertilizer, organic cultures, plant protection and weed control chemical should be assured by Govt. agency and private centers in times. Farmers can get required cash in their KCC accounts as and when needed.

Black gram processing units established in the rural area to reduce the number of intermediary in the channel. The prices of the black gram in different mandies published in the news papers for the purpose of flow the information related market price t farmers.

It concluded that the problems of production and marketing can be solved through joint effect of farmers as well Govt. agencies.

Problem related to blue bull can be solved by fencing around the field and natural calamities problem can be solved by well planned activity. Problem related to Roads solved by developing the pakka road main road to farmers field, so it helps the farmers which can be easily connect the field with market and they can also helps in Transport facility.

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