

## **STUDY ON ADOPTION OF IMPROVED BLACK-GRAM PRACTICES IN WESTERN UTTAR PRADESH**

**Ashwani Kumar<sup>1</sup> and Narinder Panotra<sup>2</sup>**

<sup>1</sup>VAEA, Dept. of Agriculture, Zone Vijaypur, SAMBA (J&K), India

<sup>2</sup>Scientist; RARS-Rajouri, Sher-e-Kashmir University of Agricultural Sciences &  
Technology of Jammu, Jammu & Kashmir, India

E-mail: dr.narinderpanotra@gmail.com

**Abstract:** The present study was undertaken to examine the “Study on Adoption of improved Black-Gram Practices in WESTERN U.P.” during 2008 and 2009. Although agriculture is the main occupation of district Baghpat. But they are still traditional minded in agricultural Practices. Therefore, an effort has been made to examine the knowledge, attitude and extent of adoption of improved Package of Practices and also identify such socio-economic status and Personal factor’s which may be helpful in improving the present status of agricultural development on the farm size of Baghpat district.

**Keyword:** Socio economic, Baghpat district.

### **Introduction**

In the year 2013-14, Uttar Pradesh had total pulse area of 23.05 lakh hectare with production of 16.97 lakh tones and productivity of 736 kg/ha. The corresponding figures for the year 2014-15 are 25.22 lakh hectares area, 21.98 lakh tonnes production and 871 kg/ha productivity.

‘Dal and Roti’ is the common man’s daily bread in India. This simple diet is not only rich in the biological value but also is the main source of protein and carbohydrate. In India, plant sources contribute more than half of the protein requirement of vegetarian diet and of this, grain legumes contributes 30 por cont of protein requirement of vegetarian diet and of this, grain legumes contributes 30 per cent of protein requirement and act as fortifiers of cereal diet. The phenomenal increase in cereal production achieved through green revolution could however, barely cope up with the enormous increase in the population, in the absence of such a break through, has remained stagnant and hence the per capita pulse consumption has touched the rock bottom minimum of 41.9 gm per day as against the recommended minimum (80 gm) and optimum (104 gm) requirements (Eco. Survey 1986-87, GOI, Mini. Of Fin. Eco. Div.). So this has been of considerable concern among the Government, leaders, administrators and mostly the scientists to avert this protein mal nutrition. It has been well recognized in recent years that grain legumes offer the most practical means solving the

protein mal nutrition problem in India. Black gram commonly known as Urd of Urdbean is used a pulse, a cover crop and a green manure crop. Being rich in protein and many others nutrients, it is known as vegetable meat.

### Importance of the study

Black-Gram is one of the important pulse crops raised throughout India. It is consumed in the form of dal. In north India, it is the chief constituent of Papad and also bari which make a delicious curry. In the south, the husked dal is ground into a fine paste and allowed to ferment and is mixed with equal quantity of rice flour to make dosa and idli. Urd dal is also used in Preparation of halva and imarti. It is also fried to serve as a savoury dish. It is also used as a green manure crop. It is used as a nutritive fodder, especially for milch cattle.

Black-Gram has become very Popular Pulse crop in India, Pakistan, Bangladesh, Burma, Sri Lanka and west Indies. It is grown all over the country in *Kharif* and summer seasons. In northern India it is grown in *Kharif* and summer season while in south India it is raised in rabi season also. It is cultivated over an area of about 24 lakh hac. With total Production 7.7 lakh tonnes. In India, Black-Gram is very Popularly grown in Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Uttar Pradesh, West Bengal, Punjab, Haryana and Karnataka.

The Black-Gram has a lot of food nutrients like. Protein, fat, carbohydrates, iron, calcium and other micro-nutrients which are essential part of food and its required by every human body.

**Table 1. The nutrients value of Black-Gram on dry basis**

Nutrients	In Percent
Protein	23.8
Fat	1.15
Ash	3.32
Crude Fibre	5.27
Carbohydrates	62.6

A/C to Hoytowitz and Mathews – (1986)

**Table 2. The nutrients value of Black-Gram in green Pods.**

Nutrients	In Percent
Moisture	85.3
Protein	3.5
Fat	0.2
Carbohydrates	8.1
Mineral matter	0.9

**Table 3. The vitamins Percentage in Black-Gram in green Pods**

<b>Name of vitamin</b>	<b>Percentage</b>
Thiamine	0.51
Riboflavin	0.20
Niacin	1.3
Chlorine	202 mg/100g.
Folic acid	133 mg/100g.

**Materials and methods**

The brief description of the Baghpat district in which the study had been conducted is given which will increase the practical feasibility of the results.

**General Description of district Baghpat & Block Baraut**

The C.D. Block, Baraut of district Baghpat (U.P.) was purposively selected for the study. There was six (6) C.D. Blocks in district Baghpat namely Baghpat, Binauli, Baraut, Chapraulli, Pilana and Khekra. The Head office of C.D. Block Baraut, was situated in Janta, Vedic College campus. The C.D. Block was selected for the Intensive study of the “Adoption of improved Black-Gram practices in western U.P.” The C.D. Block. Baraut was started on 1<sup>st</sup> April 1957.

**Climate**

Generally there are three weathers in a year i.e Summer season, Rainy season and winter season. Summer season is started from mid week of March till end of June. The temperature goes up to 40-45<sup>0</sup>C in the month of June very hot winds known as “Loo” blow in the Area. The second weather is rainy season which starts from first week of July and ends of October. The average rainfall of this area is 20-30 inches. Mostly rainfall is irregular and unequally distributed. The third weather winter starts from first week of November and remains up to February.

**Topography of the Soil**

The soil of this block is fertile productive and loamy in nature. It is most suitable for farming and especially for wheat and sugarcane cultivation. The area, which is located on the bank of Yamuna, is mostly under flood and every year in the month of August and September. Hence the soil becomes slightly alkaline.

**Boundaries of the District**

It is bounded by district Meerut in East, Haryana state in West, district Muzaffarnagar in North and District Ghaziabad in South.

### **Boundaries of the Block**

It is bounded by Binauli block in east, Chhaprauli block in west, block Baghat in south and block Kairana (Distt Muzaffarnagar) in North.

### **Cropping Pattern and Land Use in C.D. Block Baraut**

The area of the C.D. Block, Baraut is double cropped area. The main crops grown are Sugarcane, Wheat, Mustard, Paddy, Black gram etc in this block and crop rotations are commonly followed.

### **Major crop rotations in the Block**

#### **(a) One year Rotation**

- |    |         |   |            |
|----|---------|---|------------|
| 1. | Paddy   | - | Barseem    |
| 2. | Jawar   | - | Wheat      |
| 3. | Cotton  | - | Barley     |
| 4. | Maize   | - | Wheat      |
| 5. | Jawar   | - | Pea        |
| 6. | Jawar   | - | Gram       |
| 7. | Wheat - |   | Black Gram |

#### **(b) Two year Rotations**

- |    |                                      |   |        |
|----|--------------------------------------|---|--------|
| 1. | Sugarcane                            | - | Ratoon |
| 2. | Paddy – Barseem – Paddy – Wheat      |   |        |
| 3. | Paddy – Black Gram – Pea – Sugarcane |   |        |

#### **(c) Three year Rotations**

- |    |  |
|----|--|
| 1. | Paddy – Sugarcane – Ratoon – Wheat           |
| 2. | Jawar - Pea – Sugarcane – Ratoon             |
| 3. | Sugarcane – Ratoon – Jawar + Bajra - Wheat   |
| 4. | Wheat – Black Gram – Oat – Jawar – Mustard – |

Sugarcane

### **Mixed Cropping**

- |    |           |   |            |
|----|-----------|---|------------|
| 1. | Sugarcane | + | Tomato     |
| 2. | Jawar     | + | Arhar      |
| 3. | Sugarcane | + | Onion      |
| 4. | Sugarcane | + | Cucumber   |
| 5. | Wheat +   |   | Mustard    |
| 6. | Maize     | + | Mung       |
| 7. | Maize     | + | Black Gram |

**Table 4: Land use Pattern in C.D. Block, Baraut**

S.No.	Items	Area in hectares
1-	Total area of the Block	23,313
2-	Area under cultivation	19,687
3-	Irrigated Area	19,687
4-	Unirrigated Area	Nil
5-	Area under Rabi crops	11,492
6-	Area under Kharif crops	18,871
7-	Area under Zaid Crops	1,820

**Source:** Statistic magazine of district Baghpat (2000-01)

### Results and discussion

The study was related to five villages of C.D. Block, Baraut from the district Baghpat. The C.D. Block Baraut was purposively selected to be the area under investigation, because it was certainly true representative block of Baghpat district on the basis of Educational and Technological facilities of Black Gram cultivation.

Multistage random samplings procedure were used for selection of research area and for selection of village clustered random sampling procedure were used. Farm families were taken to be the unit of the study and the heads of the family as the respondents. From each village 20 farmers were finally selected as respondents for the study. Accordingly from the five sample villages only 100 respondents finally selected for investigation.

The data was collected with the help of interview schedule which was specially prepared for the study in incorporating number of standard tools developed by different extension scientist in India, of course making necessary modifications of minor nature which were considered to be essential. In addition number of items of the interview schedule was developed by the author with the help of guide. The purpose of the study was clearly explained to the respondents at the time of data collection. The data so collected were coded, classified, tabulated and analysed in the light of the objectives:

### Major Findings

The result pertaining to the main findings of study are given below:

The main finding of the present study are summarised below under relevant heads.

#### 1. Socio-economic back ground

The present study reveals that most of the respondent belongs to 'below medium' category of socio-economic status. 'Low' category of income and 'high level' of size of holding groups. There was percentage being 33 per cent, 52 per cent and 60 per cent respectively.

Majority of farmer's were living in Pucca house i.e. 65 per cent. Most of them i.e. 58 per cent used tractor in his field. They belongs to 'medium' caste i.e. 86 per cent and agriculture is the main occupation.

## **2. Personal Attributes**

According to present study majority of respondents i.e. 47 per cent 'middle age' group. Most of them were educated to 'medium level'.

## **Technical Knowledge about improved Black-Gram Production Technology**

The level of Knowledge about the improved farm practices of the Respondents were 'Medium level' i.e 65 per cent . 25 per cent respondents had 'Low Level' of knowledge and only 10 per cent respondents had 'high level' knowledge about the improved farm practices.

## **3. Extent of adoption of components of improved Black Gram Production Technology**

➤ Majority of respondents were widely adopted to desi variety of Black Gram i.e. 51 per cent and percentage of recommended varieties Pusa-1, Type-9, Pant-U-19 were 6 per cent, 21 per cent and 22 per cent respectively.

➤ The adoption index shows that the high majority of respondents i.e., 50 per cent adopted to Black gram cultivation at 'Low level' and 41 per cent were adopted to it at 'Medium Level' at least only 9 per cent of respondents grow to 'High Level'.

## **4. Farmer's attitude towards improved Black Gram Production technology**

Majority of the respondents belongs to 'medium level' of attitudes i.e., 74 per cent, 18 per cent of farmer's having 'low level' of attitudes and only 8 per cent of respondents having 'High attitudes' towards improved Black Gram production technology.

## **5. Extension Contact**

Majority of respondents belong to 'medium group' of extension contact i.e. 50 per cent. 27 per cent respondents had 'high' contact group and only 23 per cent respondents had 'low' extension contact towards improved Black Gram production technology.

## **6. Mass Media Exposure**

Majority of the respondents belongs to 'medium level' of mass media exposure i.e. 38 per cent. 37 per cent of farmer having 'low level' of mass media exposure and only 25 per cent respondents had 'high level' of mass media exposure.

It is clear from the study that respondents have knowledge about cultivation of Black Gram but their productions were not up to mark. The reason in order of importance for non-adopter of Package of practices of Black-Gram were lack of knowledge, lack of

Encouragement by Extension Personnel, high cost of inputs and non availability of seeds of improved varieties and fertilizers in time.

### **7. Problem faced by Black Gram growers**

Majority of respondents reported that the main problems of Black Gram growers were negative role of extension worker, lack of knowledge about improved Practices, inadequate credit facilities, high losses in Black-Gram crop by animals, high cost of insecticide and pesticides, high cost of manure and fertilizers, high cost of improved seeds, problems of government facilities and lack of improved and resistant variety. Their percentage being 75 per cent, 75 per cent, 75 per cent, 76 per cent, 80 per cent, 82 per cent, 84 per cent, 85 per cent, 90 per cent and 90 per cent respectively.

### **Conclusion**

In the context of findings as summarised above the study leads to the following conclusions.

1. Most of respondents belongs to 'below medium' categories of socio-economic status. 'Low' category of income and 'high level' of size of holding groups.
2. Majority of the farmers belong to 'middle age group' and most of them educated to 'medium level'. They have 'medium level' of knowledge about the improved farm practices of Black Gram.
3. Majority of respondents were live in joint family and no member of any organizations.
4. Most of the respondents belong to 'medium' caste and agriculture is the main occupation.
5. Majority of the respondents had tractors in farm power but they lived in Pucca houses.
6. Majority of respondents had 'medium level' of knowledge about improved farm practices of Black Gram.
7. Most of respondents used the desi variety of Black Gram.
8. The adoption index shows that majority of respondent were not interested in cultivation of Black Gram.
9. Majority of the respondents belongs to 'medium level' of attitudes towards improved Black Gram Production Technology.
10. Majority of the respondents belongs to 'medium group' of extension contact towards improved Black Gram production technology.
11. Majority of the respondents belongs to 'medium level' of mass media exposure.
12. Majority of respondents also concluded that the main problems of Black gram growers such as negative role of extension worker, lack of knowledge about improved practices, inadequate credit facilities, high losses in Black gram crop by animals, high cost of

insecticides and pesticides, high cost of manure and fertilizers, high cost of improved seeds, unavailability of government facilities lack of improved and resistant variety.

### **Suggestions**

As the fruit bearing aspect of the study the following implications can be highlighted with a view to present specific suggestions to the state government for reshaping the whole extension strategy to ensure the rapid technological advancement of the district Baghpat U.P. in the field of agriculture. The study leads to the following suggestions and implications:

1. More intensive efforts in terms of training should be arranged to popularise the scientific cultivation particularly in case of Black gram.
2. The research and extension staff should jointly conduct farmers fair, field days and farmers training camps to pass on improved farm technologies to farmers.
3. Demonstration planning should be done as per socio-economic status, technological advance and local problems to the society.
4. In areas, where farmers have in convenient supply of inputs and credit as well as with undeveloped market system.
5. The findings that the extent of the coverage of agricultural credit programmed is very low point out towards the need of putting greater efforts to spread this programmed on a wider scale.
6. The farmers need not only training in the field of agriculture but also formal education for them and their children to have sound knowledge of agricultural new technology.
7. There is a need for re-shaping the whole farmers training programmes in the district, so that different types of training may be important to the different categories of the farmers according to their felt need.
8. The state government should provide more and more of incentives both in cash and kind to motivate the framers for adopting the new farm technology. The cash programmes may include giving loans, grants and subsidies to the farmers while non-cash programmes may be through the educational efforts and granting recognition to the meritorious farmers by awarding those titles and giving them place in Public committees relating to agricultural development.
9. In case of agricultural new technology which the farmers find difficult to adopt because of high cost and lack of finance. The state government should help the farmers by taking all possible measures to reduce. The price of the inputs and direct the credit institutions like nationalised banks, Rural bank and co-operative credit societies to advance loans to the



farmer at a lower rate interest at the time of agricultural operations or whenever the farmers are in the urgent need of money due sudden additional cost of agricultural practices.

10. Timely and properly supply of improved and resistant variety of Black Gram by C.D. Block.

11. Training and technological knowledge must be provided about the rizobium culture.

12. It would be most useful also effective to provide technical guidance to the farmers right on their fields. In this direction the result demonstration can prove to be the best media of educating the farmers. The programmes like 'Lab to land programme' of Govt. of India and 'Training and visit Programme' sponsored by World Bank and other extension programme is progress in different part of the India can be very much helpful in district Baghpat, for which the government should make best efforts to make the best use of such programme in the best interest of farming community of the Baraut Block of district Baghpat.

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