



## Research Article

# INFLUENCE OF THE CHARACTERISTICS OF BLACK GRAM GROWERS IN THEIR TRAINING NEEDS

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**Abstract:** The study was conducted in Krishna district of Andhra Pradesh. A total of 120 farmers were selected from twelve villages of three mandals were selected for the study purpose. A well structured schedule was used for this study. The results of the study revealed that majority of the respondents gave more importance for training needs in the main areas of black gram cultivation such as plant protection, weed management, water management, fertilizer management, seeds and sowing, post-harvest technology and land preparation respectively. This result was attributed by the significant relationship of training needs with selected characteristics of the farmers.

**Keywords:** Training Needs, Black gram, Growers, Characters

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## Introduction

Black gram (*Vigna mungo* L.) is one of the important pulses crop, grown throughout the country. The crop is resistant to adverse climatic conditions and improves the soil fertility by fixing atmospheric nitrogen in the soil. Black gram plays an important role in Indian diet, as it contains vegetable protein and supplement to cereal based diet. It contains about 26% protein, which is almost three times that of cereals and other minerals and vitamins. Besides, it is also used as nutritive fodder, especially for milch animals.

It is imperative that the farmers to train in cultivation of Black gram crop to keep them abreast and latest innovations available so as to maintain its quality and stability in production. Training plays a vital role in making the farmers more receptive and equipping them with new technologies. Training only can bridge the enormous gap between remarkable yield achieved by the scientists and that obtained by the farmers Islam *et.al.* (2011). Considering the above fact in mind, the research study was undertaken to analyze the training needs and factors associated with training needs of growers with respect to black gram cultivation.

## Material and methods

The study was conducted in Krishna district of Andhra Pradesh. Out of 50 mandals, three mandals were selected purposively where the black gram cultivating farmers are more in number. Four villages were selected from each mandal randomly. A total of 120 respondents were selected randomly for the study. The ex-post-facto research design was used for the study. They were interviewed personally and the results were tabulated.

## Results and Discussion

[Table-1], reveals that ranking of different areas in which the black gram growers need training. Here plant protection has got top priority as the major areas of training needs followed by weed management, water management, fertilizer management, seeds and sowing, post-harvest technology and land preparation in that order and they were discussed in detail.

## Plant protection

Black gram farmers were not exposed to the scientific method of pest and disease control including recommended pesticides and fungicides, their dosages and symptoms of pest and disease attack. The importance of this area was realized by the farmers. So, they preferred to have training in this area. This finding was in line with the findings of Chowdary *et.al.* (2018).

## Weed management

The knowledge of identification weeds, dosage and time of applications of herbicides with improved technology were considered as the productive one than traditional method. This encouraged the Black gram farmers to have training in this aspect.

## Water management

Water is the precious agricultural input particularly in Black gram cultivation in which farmers are lacking knowledge regarding different water management aspects. The knowledge of number of irrigations and optimum water levels to be maintained will help the farmers in managing the irrigation water efficiently. This might be the reason for the training in this area.

## Fertilizer management

Fertilizer is the important input which will increase the yields and care must be taken to apply the recommended fertilizer at the right time, right method and in right dose, so as to avoid the harm to the crop and wastage of fertilizer. In view of importance of fertilizer in cultivation of Black gram, they felt the requirement of training in this area.

## Seeds and sowing

Black gram farmers used to do cultivation with old varieties. They did not know how to select the seed, and treat the seed due to lack of technical knowledge on selection of HYV's of seed.

Table-1 Training needs in different areas of Black gram cultivation

SN	Areas of training needs	Total scores	Rank	Mean score	Rank
I.	Land Preparation:				
1	Depth of ploughing.	299	I	270.5	VII
2	Formation of irrigation and drainage channels with normal size bunds including provision of control structures.	242	II		
II.	Seeds and Sowing:				
1	Selection of healthy seed.	251	III		
2	Seed treatment with Rhizobium.	281	II	281.33	V
3	Dosage of seed treatment chemical.	312	I		
III.	Water Management:				
1	Irrigation at different critical stages.	315	I		
2	Mid-season drainage corrections.	298	II	306.5	III
IV.	Fertilizer Management:				
1	Procedure for soil sampling, sending for analysis and use of recommended dosages of fertilizers.	295	II		
2	Quantity and time of fertilizer application.	318	I	291	IV
3	Methods of fertilizer application (Basal, split doses, foliar, granular).	260	III		
V.	Weed Management:				
1	Identification of weeds.	299	II	308	II
2	Rate and time of application of herbicides.	317	I		
VI.	Plant Protection:				
1	Identification of pest attack and control measures	329	I		
2	Identification of disease attack and control measures	326	II		
3	Preparation of spray fluid and application	320	III	309.66	I
4	Handling of insecticides and fungicides	311	IV		
5	Spraying technique	302	V		
6	Maintenance of plant protection equipment	270	VI		
VII.	Post-Harvest Technology:				
1	Method and time of harvesting	255	II	281	VI
2	Proper storage methods	307	I		

They have indicated for training in specific items like chemical seed treatment, method and time of sowing, rate of chemical to be used, seed rate and suitable HYV's of Black gram as their areas.

### Post-harvest technology

Black gram farmers did not have any knowledge about post-harvest technology which includes proper storage, packing and grading which will minimize the losses. They realized the importance of this area which covers proper storage, packing and grading, thereby losses in packing and storage will be reduced. This might be the reason for their interest in this area.

### Land preparation

Black gram farmers used to do cultivation in traditional way. Thereby they did not know to prepare the land in right time, right method with modern implements. They have indicated the training needs regarding type of soils and depth of ploughing to be followed for Black gram cultivation. In view of the above reasons they felt the requirement of training in this area.

Table-2 Correlation co-efficient between the training needs and independent variables of black gram growers.

SN	Independent variables	'r' values
X <sub>1</sub>	Education	- 0.74327**
X <sub>2</sub>	Experience in black gram cultivation	0.52221**
X <sub>3</sub>	Farm Size	- 0.74046**
X <sub>4</sub>	Occupation	- 0.59619**
X <sub>5</sub>	Annual Income	- 0.71086**
X <sub>6</sub>	Urban contact	- 0.71706**
X <sub>7</sub>	Extension contact	- 0.73938**
X <sub>8</sub>	Mass media exposure	- 0.70440**
X <sub>9</sub>	Risk orientation	- 0.68734**
X <sub>10</sub>	Scientific orientation	- 0.69352**
X <sub>11</sub>	Market orientation	- 0.73699**

\*\* Significant at 0.01 probability level.

### Relationship between training needs and black gram growers

The association between training needs and personal, socio-economic and psychological characteristics of black gram farmers were presented in [Table-2]. Education, farm size, occupation, annual income, urban contact, extension contact, mass media exposure, risk orientation, scientific orientation and market orientation were significantly and negatively related with training needs of black

gram farmers. While the experience in Black gram cultivation was significantly and positively related with the training needs of respondents.

### Education

Education had a negative and significant relationship with training needs. It means, as the education level of the farmers increased the training needs about black gram crop decreased. Formal education helps the farmer in acquiring more knowledge through reading. The educated person has usually more knowledge due to which is training need are of lower order. The findings of the present study are consistent with the findings of Prasad (1990).

### Experience in black gram cultivation

Experience in black gram cultivation had significant and positive relationship with training needs of farmers with regard to main areas of black gram cultivation. Even though the farmers had more experience in farming, they had less contact with extension agencies and mass media. Hence, they need more training in main areas of black gram cultivation. This finding was supported by the earlier study of Babu (1992).

### Farm size

Farm size had negatively significant relationship with training needs of farmers at 1.00 per cent level of significance. Which mean farm size had impact on training needs of farmers with regard to main areas of black gram cultivation. The farmers with large size holdings usually had more exposure to extension agencies and mass media etc. Hence, they felt less need for training in main areas of black gram cultivation. This finding was in accordance with the findings of Babu (1992).

### Occupation

Occupation had significant and negative relationship with training needs of farmers with regard to main areas of black gram cultivation. Generally, farmers with farming as their prime occupation usually had more exposure to mass media, extension agencies and informal sources. Hence, they might have felt less need for training in main areas of black gram cultivation.

### Annual income

The relationship between annual income and training needs of farmers was found to be negative and significant at 1.00 per cent level of probability.

Table-3 Regression co-efficient between the training needs and independent variables of black gram growers.

SN	Independent variables	Regression co-efficient	Standard error	't' value
X <sub>1</sub>	Education	-0.5200*	0.7600	- 0.688
X <sub>2</sub>	Experience in black gram cultivation	-0.3300	0.7000	- 0.469
X <sub>3</sub>	Farm Size	-2.060*	0.9100	- 2.264
X <sub>4</sub>	Occupation	-0.7200	0.6200	- 1.173
X <sub>5</sub>	Annual Income	1.0300	1.1400	0.900
X <sub>6</sub>	Urban contact	-0.3100	0.6500	- 0.472
X <sub>7</sub>	Extension contact	-0.1600	0.2900	- 0.534
X <sub>8</sub>	Mass media exposure	-0.0837	0.2400	- 0.346
X <sub>9</sub>	Risk orientation	-0.0187	0.3000	- 0.062
X <sub>10</sub>	Scientific orientation	-0.2900	0.3400	- 0.862
X <sub>11</sub>	Market orientation	-0.4900	0.3600	- 1.377

$R^2=0.66$ , F ratio =18.973\*\*, \*Significant at 0.05 probability level, \*\*Significant at 0.01 probability level

This indicated that as the annual income increased, the training needs of respondents were decreased with respect to Black gram cultivation. Black gram cultivation requires high initial investment and also relatively more recurring expenditure on pest management. Obviously, those with higher income have to seek more knowledge through frequent extension contacts. They occupy a better position to solve their problems than those with lower income and as such their training needs also decrease.

#### Urban contact

A negative and significant relationship was observed between urban contact and training needs. The respondents visiting nearby towns not only on personal works but also with the agricultural purpose might acquire new technologies of agriculture. This showed that urban contact had substantial effect in reducing the training needs about black gram cultivation. This could be the probable reason for negative and significant relationship between urban contact and training needs.

#### Extension contact

The correlation between extension contact of the respondents and training needs was found to be negative and significant at 1.00 per cent level of probability. This showed that extension contact had substantial effect in reducing the training needs about black gram cultivation. More extension contact of an individual increase the knowledge level. The knowledge gained through these contacts helps him in solving the field problems more effectively and in understanding the technology properly. It is natural that the persons who are getting information through personalized methods will have lower training needs. The findings of the present study are in agreement with the findings of Prasad (1990).

#### Mass media exposure

The correlation between mass media exposure of the respondents and training needs was found to be negative and significant at 1.00 per cent level of probability. This showed that mass media exposure had much effect in reducing the training needs in black gram cultivation. Exposure to mass media helps in bringing increased awareness among the individuals about the latest developments in the fields of their working and also in understanding the technology properly. This lead to the inference that the black gram growers with higher mass media exposure have lower degree of training needs than those with less mass media exposure. These findings are similar with the findings of Prasad (1990).

#### Risk orientation

There was a negative and significant association between training needs and risk orientation. Risk orientation is expressed as the degree to which the farmer is oriented to take risk and has courage to face uncertainties in black gram cultivation. Unless the farmer had knowledge on recommended technology he does not take risk in practicing it. It seems that the respondents with high risk orientation have less number of training needs. Hence, this type of relationship was observed.

#### Scientific orientation

Scientific orientation had negatively significant relationship with training needs of

respondents regarding main areas of black gram cultivation. This might be because these farmers had scientific bent of mind towards latest technology and got information regarding black gram cultivation through mass media, extension agency and informal sources. Hence, they might have felt less need for training in main areas of black gram cultivation. These findings are in line with the findings of Prasad (1990).

#### Market orientation

A negative and significant relationship was found between market orientation and training needs of farmers. It indicated that as the market orientation increases, the training needs were decreased. It was observed that, by and large, the respondents had a higher degree of market orientation. Two possibilities are there, one, they might be having high marketable surplus and as such, marketing might not be the problem for them. Further, it seems that the respondents with higher market orientation have listed up less number of training needs. This could be probable reason for negative and significant relationship between market orientation and training needs.

It was observed from the [Table-3] that out of the eleven independent variables fitted in regression equation, variables education and farm size were found to be contributing negatively and significantly at 0.05 level of probability with the training needs.

Co-efficient of multiple determinations ( $R^2$ ) was found to be 0.66, indicating that all the dependent variables put together could explain variation in the dependent variable, training needs to the extent of 66.00 per cent. The 'F' test of statistics showed that the variation was significant at 1.00 per cent level of significance.

#### Conclusion

The findings regarding the training needs of black gram farmers with regard to knowledge have clearly highlighted the importance of various areas in black gram cultivation. The findings of the present study have several practical implications, mostly in the nature of suggestions to the planners, trainers and all other officials who are concerned with Black gram farmers training programmes which in turn help to raise their socio-economic level through improved agricultural production.

#### Application of research

More attention should be given to the organization of on-farm trials with the farmers to enhance their technical and managerial abilities.

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