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The Relationship between Socio-Economic Characteristics with the Extent of Adoption towards Respondents of Black Gram Production Practices

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Abstract:- **Black gram (Vigna mungo) is a pulse crop belongs to family leguminacea. The study was conducted during 2019-20 to assess the socio-economic characteristics of respondents orientation in Yemmiganur block of Kurnool district of Andhra Pradesh. Total 120 respondents were selected randomly from 6 villages and results revealed that improved production practices of black gram were medium. The analysis showed that majority of the respondents had medium level of age group, possess education at primary school, medium land size holders, only farming as an occupation, medium annual incomers with small family size, medium extension contact, medium mass media exposure, medium market and risk orientation.**

Keywords:- *Socio-economic characteristics, Black gram production practices, Adoption, Correlation, Regression.*

I. INTRODUCTION

Among the pulse crops Black gram (Vigna mungo L.) is an important summer legume. Its also known as urd bean, mung bean, black map. It's the fourth most important short-duration pulse crop in India due to its nutritional and industrial values. The coastal Andhra region in Andhra Pradesh is famous for black gram after paddy. The Guntur District ranks first in Andhra Pradesh for the production of black gram. Black gram has also been introduced to other tropical areas mainly by Indian immigrants. The crop is resistant to adverse climatic conditions and improve the soil fertility by fixing atmospheric nitrogen in the soil. It has been reported that the crop produces equivalent to 22.10 kg of N/ha., which has been estimated to be supplement of 59 thousand tones of urea annually. The pulse '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, specially for milch animals.

- *CLIMATE*

During kharif, it is cultivated throughout the country. It is best suited to rice fallows during rabi in southern and south-eastern parts of India. Black gram needs relatively heavier soils than green gram.

- *SOIL*

Black gram can be grown on variety of soils ranging from sandy soils to heavy cotton soils. The most ideal soil is a well drained loam with pH of 6.5 to 7.8.

- *SEED RATE AND SOWING.*

Optimum sowing time mid June subject to availability of moisture/rainfall. Seed rate is 15-20 kg/ha for kharif and 25-30 kg/ha for spring or rabi. Row-to-row distance is 30-35 cm for kharif and 25 cm for rabi or spring.

- *IRRIGATION*

The pulse crops in Rabi and Pre rabi seasons are mostly grown on residual soil moisture condition. However irrigation should be provided at critical growth stage i.e flowering and pod development stage.

- *YIELD*

A well managed crop of Urd may produce 12 - 1 5 quintals grains/ha.

II. MATERIALS AND METHODOLOGY

The present study was conducted in Yemmiganur block of Kurnool district of Andhra Pradesh has been purposively selected in 2019-20. Six villages (Banavasi, Devibetta, Divamdinne, Garladinne, Gudikal, Thimmapuram) were selected randomly. A well structured interview schedule was prepared and pre-tested for the study. The sample population of 120 respondents has been selected based on random sampling method from the selected 6 villages. Relevant questions on black gram production practices were collected with well structured interview schedule to understand the levels of market orientation and risk orientation of the respondents and

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answers were recorded with three point scale as agree (3),partially agree (2), disagree (1). The data was tabulated, analysed and interpretations were drawn as below.

Statistical method is the scientific method of judging collective natural or social phenomena fromthe results obtained by the analysis of enumerated orcollected estimates. For the purpose of statistical analysis to convert the results into findings, the following statistical tools were used:

1. Arithmetic Mean (X)
2. Standard Deviation (σ)
3. Frequency and percentage
4. Pearson's correlation coefficient (r)
5. Multiple Linear Regression (MLR)

➢ *OBJECTIVES:*

1. Content analysis of extent of adoption of selected production technology of black gram growers.
2. To find out the correlation of selected independent variables with the extent of adoption.
3. To find out the multiple Linear Regression Analysis of Profile Characteristics of Black gram growers with their extent of adoption.

III. RESULTS AND DISCUSSION

1. Content analysis of extent of adoption of selected production technology of black gram growers

(n=120)

S. No.	Recommended practices*	Extent of adoption					
		FA		PA		NA	
		F	%	F	%	F	%
A.	**Soils**						
1.	Growing of black gram in well drained loam soils.	45	37.5	51	42.5	24	20
B.	**Varieties**						
2.	Growing of LBG -752 for the control of yellow mosaic virus.	44	36.66	52	43.33	24	20
3.	Growing of PU-31 for the control of yellow mosaic virus.	42	35	54	45	24	20
C.	**Sowing**						
4.	Sowing the seed in the months of November- December with seed rate of 16kg/acre.	40	33.33	53	44.16	27	22.5
5.	Seed treatment with Thiram (Mancozeb /Dithane M – 45 / Captan) @ 2.5gm / kg of seed and drying the seed after seed treatment.	31	25.83	55	45.8.	34	28.33
D.	**Nutrient management**						
6.	Foliar Spray of 2 % DAP as a remedy to mitigate nutrient stress	29	24.16	56	46.66	35	29.16
E.	**Irrigation management**						
7.	Irrigating the field at 30 days (Reproductive Stage) and 50 days (Pod Formation Stage) after sowing to improve the yields in black gram.	29	24.16	58	48.33	33	27.5
F.	**Weed management**						
8.	Spraying of Weedicides after 20 – 25 days of sowing.	28	23.33	57	47.5	35	29.16
9.	Spraying of Fenoxiprop Ethyl 9% solution @250 ml. per acre in 200 Lres of water	26	21.66	60	50	34	28.33
G.	**Crop protection**						
10.	Foliar application of 5% Neem Seed Kernel Extract (NSKE) after as a prophylactic spray to control whitefly that transmits yellow mosaic virus.	27	22.5	59	49.16	34	28.33
11.	Collection and destruction of skeletonised leaves along with first instar larvae to control tobacco caterpillar.	32	26.66	62	51.66	26	21.66
12.	Spraying of Chloripyriphos@ 2.5 ml./ Monocrotophos @ 1. 6 ml. / Acephate @1. 0 g. against yellow mosaic virus.	34	28.33	61	50.83	25	20.83
H.	**Harvesting**						
13.	Harvesting of crop when most of the pods turn black i.e. after 75 to 80 days from the date of sowing.	34	28.33	60	50	26	21.66
14.	Drying of harvested crop on the threshing floor and later going for threshing.	40	33.33	59	49.16	21	17.5
15.	Threshing manually or trampling by tractors..	24	20	61	50.83	35	29.16

Table 1 : Information output of adoption

Overall Extent of Adoption of the respondents

Table 2 : Overall Extent of Adoption of the respondents

S.No.	Adoption	Frequency	Percentage
1.	Low (<26.02)	28	23.33
2.	Medium (26.02-35.12)	70	58.33
3.	High (>35.12)	22	18.33
	Total	120	100.00

Mean = 30.57
S.D.= 4.54

2. To find out the correlation of selected independent variables with the extent of adoption.

S. No.	Profile characteristics	'r' value
1.	Age	0.657**
2.	Education	0.606**
3.	Size of land	0.036^{NS}
4.	Occupation	-0.070^{NS}
5.	Annual income	0.018^{NS}
6.	Family size	0.082^{NS}
7.	Extension contact	0.706**
8.	Mass media exposure	0.630**
9.	Market orientation	0.585**
10.	Risk orientation	-0.022^{NS}

Table 3: Correlation of selected independent variables with the level of knowledge

From the above table it could be observed that the computed 'r' values of age, education, extension contact, mass media exposure and market orientation were found to be significant Whereas, computed 'r' values of size of land, occupation, annual income, family size, risk orientation with the extent of adoption of selected production technology were found to be nonsignificant.

**-Correlation is significant at the 0.01 level
NS -Non Significant

3. To find out the multiple Linear Regression Analysis of Profile Characteristics of Black gram growers with their extent of adoption.

S. No.	Profile characteristics	Regression coefficient
1.	Age	0.075
2.	Education	0.137
3.	Size of land	0.289
4.	Occupation	-0.233
5.	Annual income	-0.268
6.	Family size	-0.071
7.	Extension contact	1.046
8.	Mass media exposure	0.234
9.	Market orientation	-0.062
10.	Risk orientation	-0.028

Table 4:Multiple Linear Regression Analysis of Profile Characteristics of Black gram growers with their extent of adoption.

The regression coefficient given in Table 4.18. further revealed that the profile characteristics namely age and extent contact were found to be positively significant. Remaining profile characteristics viz., education, farm size, occupation, family size, mass media exposure, extension contact, risk orientation, market orientation are non-significant.

This implied that innovativeness, scientific orientation and annual income contributed significantly to predict the variation in the extent of adoption of selected production technology of black gram. The **"R^2" value of 0.593** indicated that all the selected 10 profile characteristics put together, explained about **59.30 per cent** variation in the extent of adoption of selected production technology by the black gram growers, where as the remaining 40.70 per cent was due to the extraneous effects profile characteristics away from the present study. Hence, it could be stated that the profile characteristics selected to a large extent explained the variation in the extent of adoption of selected production technology by black gram growers.

IV. CONCLUSION

It has been concluded that extent of adoption of respondents towards black gram production were medium, this might be due to their habitual inclination to set pattern of black gram cultivation over the years using indigenous varieties without any change. This is leading them to have no interest in gaining advanced information. The other reason for this trend could be the small to medium holdings, medium innovativeness, scientific orientation, economic orientation, market orientation, medium mass media exposure and extension contact. Correlation table above showed that significant relationship between age, education, extension contact, mass media exposure, market orientation. The farmers should increase more as a black gram growers in the village with new technological practices to increase the annual income, and should have the ability to take risks which will improve the existing medium level of knowledge towards black gram production practices. The other factors showed non-significant relationship between farm size, family size, occupation, annual income, risk orientation.The **"R^2" value of 0.593** indicated that all the selected 10 profile characteristics put together, explained about **59.30 per cent** variation in the extent of adoption of selected production technology by the black gram growers

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