

**RESEARCH ARTICLE :**

Front line demonstration in blackgram in Visakhapatnam district of Andhra Pradesh

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SUMMARY : The study was conducted at Visakhapatnam district of Andhra Pradesh on FLD in blackgram by Scientists of district Agricultural Advisory and Transfer of Technology Centre of ANGRAU. Blackgram crop was sown as rice fallow in *Rabi* season during 2018-19 and 2019-20 in an area of 4229 ha and 4950 ha also it was found in an increase in yield of 32.7 per cent and 47.3 per cent in FLD field, respectively. Thus, it was concluded that front line demonstrations conducted under the close supervision of scientists is one of the most important tools of extension to demonstrate crop management practices at farmers' field. FLDs motivate farmers to adopt scientific practices. So, FLDs are to be designed, supervised with extension activities *viz.*, training programmes, demonstration, field days etc. to increase yields and profits of farmers.

KEY WORDS:

Blackgram, Yield, FLD, Cost of cultivation

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BACKGROUND AND OBJECTIVES

Pulses are versatile crops, grown for nutritional security and soil health. United Nation declared year 2016 as "International Year of Pulses". India happens to be major producer, consumer and importer of pulses (Sudhakar rao *et al* 2018).

Usually in Visakhapatnam district pulses are grown under rice fallows. Normally blackgram is cultivated in an area of 6567 ha under rainfed situation and the mean productivity is 3.9q/ha. The low yields are due to age old varieties, no seed treatment, terminal stress, improper and untimely plant protection, *Cercospora / Corynospora* leaf

spot, YMV, powdery mildew, pod borer, sucking pest complex.

Front line demonstration is an important method of transfer of technology to farmers, it show cases the technologies in farmers field under real farm situation. The present study has been undertaken to study the effect of FLD technology and farmers practice in blackgram cultivation. The important varieties of blackgram cultivated in the district were PU 31, TBG 104. The following table depicts the area of blackgram cultivation in Visakhapatnam district.

As per the Table A during *Rabi* 2018-19 and 2019-20 blackgram was cultivated in 4229 ha and 4950 ha, respectively.

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Year	Crop	Normal area (ha.)	Actual area (ha.)
Rabi 2018-19	Blackgram	6567	4229
Rabi 2019-20	Blackgram	5936	4950

Source: Department of Agriculture, Visakhapatnam

Intervention	Demonstrated package	Farmers package
Seed	PU 31, TBG 104	Local variety
Seed treatment	Mancozeb @ 2.5g/kg, Imidacloprid 600FS @ 5ml/kg, Rhizobium @2g/kg	No seed treatment
Plant protection	Neem oil, Acephate, Thioicarb, Chlorpyrifos, sticky traps	Monochrotophos
Nutrients	19-19-19 spray	No nutrients spray
Storage	Hermatic bags	No Hermatic storage bags

RESOURCES AND METHODS

In Visakhapatnam district 10 mandals were selected viz., Cheedikada, K.kotapadu, Bucchayyapeta, Rolugunta, Devarapalle, Madugula, Kotavaratla, Anandapuram, Padmanabham, Achutapuram and from each mandal 2 villages were selected to implement DBT BioTech *Kisan* Hub project. The following inputs were provided under DBT *Kisan* Biotech Hub project to the farmers. The demonstrations in blackgram were carried in 20 hectares in farmers field during *Rabi* 2018-19 and 2019-20.

As per the Table B, interventions of FLD in blackgram consists of five components viz., certified seed PU 31, TBG 104, seed treatment with mancozeb @ 2.5g/kg, imidacloprid 600FS @ 5ml/kg, rhizobium @2g/kg, pesticides viz., *Neem* oil, acephate, thioicarb, chlorpyrifos against different pests, nutritional spray with 19-19-19 and hermetic bags for storage of the produce. The data was collected from demonstration field as well as farmers field on yield/ha and economics of cost of cultivation. The demonstrations were conducted under close supervision of Scientist's of district Agricultural Advisory and Transfer of Technology Centre (DAATTC)

of Visakhapatnam district of Acharya N.G.Ranga Agricultural University.

OBSERVATIONS AND ANALYSIS

The findings of the present study as well as relevant discussion have been summerized under following heads:

Frontline demonstration technologies and farmers practice:

During *Rabi* season of 2018-19 and 2019-20 blackgram was sown under rice fallow in demonstrated field and farmers field. The FLD fields were under close guidance with package of practices of DAATTC scientist. In farmers field, there was no seed treatment, plant protection practices and nutrient spray. The yield and economics of cost of cultivation was calculated.

From the Table 1 it was evident that, during *Rabi* 2018-19 average yield of blackgram from demonstrated field was 5.8.q/ha and in farmer practice 3.9q/ha was recorded with an increase in 32.7 per cent in yield.

During the year *Rabi* 2019-20 average yield of blackgram from demonstrated field was 5.6q/ha. and in

Table 1 :Yield and economics of dmonstration Vs farmers practice (Blackgram) *Rabi* 2018-19 and 2019-20

Crop	No. of Demos	Area (ha.)	Yield (q/ha)				Per cent increase over farmers practice	Economics of demonstration (Rs./ha)				Economics of farmers practice (Rs./ha)			
			High	Low	Average	Farmers practice		Gross cost	Gross returns	Net returns	B:C	Gross cost	Gross returns	Net returns	B:C
Blackgram (PU 31) 2018-19	25	10	6.5	5.0	5.8	3.9	32.7	8460	29,000	20,540	1:3.4	7100	19,500	11,700	1:2.7
Blackgram (TBG 104) 2019-20	25	10	6.3	4.9	5.6	3.8	32.1	8945	35,840	26,895	1:3.0	8315	24,320	16,005	1:1.9

farmer practice 3.8q/ha was recorded with an increase in 32.1 per cent in yield.

In a similar study by Jain (2016) found that 33.5 per cent higher grain yield was recorded in blackgram under demonstration over the farmers practice.

The net returns in demonstrated field during the year 2018-19 and 2019-20 was Rs. 20,540 and Rs. 26,895 with a B:C of 1:3.4 and 1:3.0, respectively. In farmer practice during the year 2018-19 and 2019-20 net returns were Rs.11,700 and Rs.16,005 with a B:C of 1:2.7 and 1:1.9, respectively.

Conclusion :

Front line demonstrations conducted under the close supervision of scientists is one of the most important tools of extension to demonstrate crop management practices at farmers' field. FLDs motivate farmers to adopt scientific practices. So, FLDs are to be designed, supervised with extension activities viz., training programmes, demonstration, field days etc. to increase yields and profits of farmers.

This was also evident in the study on popularization of maize production technology through front line

demonstration in tribal areas of east Godavari by Jyothi Swaroopa *et al.* (2016) and study on performance of frontline demonstration on yield enhancement of cumin in Barmer district of Rajasthan by Morwal *et al.* (2018).

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