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Rupesh S. Khedkar

Subject Matter Specialist-Agronomy
Farm Science Centre
Malegaon, Nashik
Maharashtra
India - 423206

Pawan M Chaudhari

Subject Matter Specialist-Horticulture
Farm Science Centre
Malegaon, Nashik
Maharashtra
India - 423206

Vijay A. Shinde

Subject Matter Specialist-Soil Science
Farm Science Centre
Malegaon, Nashik
Maharashtra
India - 423206

Corresponding Author

Rupesh S. Khedkar
rups2683@gmail.com

Variety Utkarsha Boost Green Gram Production Through Cluster Frontline Demonstrations

The demonstrations of green gram on cluster basis were implemented by Farm Science Centre, Malegaon in village Vaygaon of Baglan block during *kharif* seasons. The results revealed that improved practice- seed Utkarsha 10kg, micronutrient-Zinc sulphate 25kg, weedicide-Quizalofop ethyl 5% @ 750ml, insecticide-Dimethoate 30% EC @ 500ml, fungicide-Sulphure 80% WP @ 1250g per hectare recorded highest average seed yield 8.94q/ha whereas in farmers practice it was 6.20q/ha. There was 30.64% increase in yield observed over farmers practice. The similar results were observed in gross and net monetary return which was rupees 39321.9 & 24007.9 and for control 27262.4 & 12448.5 per hectare. Demonstrations shown higher benefit cost ratio (2.59) over control (1.85). Demonstrations concluded that farmers need to be encouraged to use improved technology to increase the production of pulses, which is used in the cluster frontline demonstrations. This intervention not only showed good income but also made seed available to the locality to make the crop more popular in the nearby villages.

INTRODUCTION

Green gram is second largest preferred pulse crops after chickpea in Malegaon, Baglan and Deola blocks of Nashik district having medium fertile, slightly higher pH and marginal soils. Farmers grows green gram generally for dal, whole grain for own family and for soil

reclamation after which they grow *rangda* or *rabi* onion. In Nashik, green gram is cultivated in an area of 12600 ha which is 2.12% under total *kharif* cropped area with production of 6500 MT. The productivity of green gram in Nashik district (515 kg/ha) which is higher than state (190 kg/ha) and national (471 kg/ha) average yield (Anonymous 2016). Crop yields reduced by, unavailability of credits, high charges of

TECHNOLOGY, IMPLEMENTATION AND SUPPORT

The project of cluster frontline demonstrations was studied during *kharif* 2016-17 by the Farm Science Centre, Malegaon. Village Vaygaon of Baglan block and total 25 farmers were selected for this project. The cluster frontline demonstrations were conducted with the objectives to self-sufficient in pulses, to

Table 1. Technology details of cluster frontline demonstrations on green gram

Clusters	Number of demonstrations	Variety	Technology Demonstrated	Need based inputs
Vaygaon	25	Utkarsha	Integrated Crop Management (ICM)	Improved Seed, Soil testing, micronutrient-Zinc sulphate, weedicide-Quizalofop ethyl 5 %, insecticide-Dimethoate 30% EC fungicide-Sulphure 80% WP

Table 2. Data on yield and economics of cluster frontline demonstrations on green gram

Treatment	Yield (qha-1)	Total cost (Rsha-1)	Total monetary returns (Rsha-1)	Net monetary returns (Rsha-1)	Benefit Cost ratio
Control (use of old and local varieties)	6.20	14814	27262.4	12448.5	1.85
Improved practice -seed Utkarsha 10 kg, micronutrient-Zinc sulphate 25 kg, weedicide-Quizalofop ethyl 5 % @ 750 ml, insecticide-Dimethoate 30% EC @ 500 ml, fungicide-Sulphure 80% WP @ 1250 g per hectare	8.94	15314	39321.9	24007.9	2.59

farm labour, inadequate and irregular power supply, unawareness of latest technology, delayed sowing, erratic rainfall, lack of improved seed-cum-fertilizer drill and improper nutrient management. Yield losses observed due to heavy infestation of aphids and powdery mildew, false method and non-application of recommended pesticide.

Some farmers followed all recommended packages of practices because of their economic status but others are not. These constraints observed by the scientists working with the farmer's during implementation of Cluster Frontline Demonstrations. These results in reduced productivity of pulses and therefore imports of pulses needed to fulfill the demands. Department of Agriculture, Cooperation & Farmers Welfare had funded the project under National Food Security Mission. This project was implemented by Farm Science Centre, Malegaon with the objective to increase the pulses production. Total 10 ha area sanction for the same with amount Rs.7500 per ha.

impart latest pulses technology among farmers, to increase in area and productivity of pulses. The project was funded by ICAR-ATARI, Zone-V, and Hyderabad. The funds sanctioned were Rs.7500/ha that utilized for purchasing of need based items like improved green gram seed along with other needful inputs (Table1). Scientists organized farmer trainings on improved production technology of green gram. Integrated Crop Management (ICM) practices like soil testing, nutrient application, weed management, pest and disease management activities observed and followed by farmers. Farmers use local varieties like Kopargaon moong in control plot. The observation recorded on yield and economics of improved practice and control plots (Table2). To disseminate of improved technology field day & green gram demonstration exposure visit were organized. Farmers were interested to know about characters of improved variety of green gram. During this field day scientist guided farmer on pest management and answered their equerries. The main aim to conduct

field day is to spread latest technology among majority of farmers of cluster areas.



Farmers training on improved production technology of green gram

UPTAKE, SPREAD AND BENEFITS

Cluster frontline demonstrations for green gram were implemented with the use of variety Utkarsha on 10 hectares in 25 fields of Vaygaon village of Baglan block. The need based inputs provided to farmers



Field day- green gram and demonstration exposure visit

were improved seed- Utkarsha, micronutrient-Zinc sulphate 25kg, weedicide-Quizalofop ethyl 5 % @ 750ml, insecticide-Dimethoate 30% EC @ 500ml, fungicide-Sulphure 80% WP @ 1250g per hectare. Variety Utkarsha having average 1000 grain weight 50-52gm. and potential yield is 15q/ha. Farmers sow seed by using seed drill with line spacing 30 x 10cm. Scientists frequently monitored green gram plots for accurate applications of technologies. Result concluded that treatment Improved practice seed- Utkarsha 10kg, micronutrient- Zinc sulphate 25kg, weedicide-Quizalofop ethyl 5% @ 750ml, insecticide-Dimethoate

30% EC@500ml, fungicide-Sulphure 80% WP@1250g per hectare recorded highest average seed yield 8.94q/ha whereas in farmers practice it was 6.20q/ha. The similar results were observed in gross and net monetary return which was rupees 39321.9 & 24007.9 and for control 27262.4 & 12448.5 per hectare. The results were found similar with findings by Lakshmi et al., (2017) in chickpea. There was 30.64% increase in yield observed over farmers practice. Benefit cost ratio for demonstration and control was 2.59 & 1.85 respectively. Findings of current investigation closely associated with Singh et al., (2018). Demonstrations concluded that farmers need to be encouraged to use improved technology to increase the production of pulses, which is used in the cluster frontline demonstrations. This intervention not only showed good income but also made seed available to the locality to make the crop more popular in the nearby villages. Integrated Crop Management (ICM) practices like soil testing, nutrient application, weed management, pest and disease management etc. results in higher yield levels and income.



CONCLUSION

It was observed that average highest yield 8.94q/ha found in cluster frontline demonstrations whereas in control plot it was merely 6.20q/ha. There was 30.64% increase in yield observed over farmers practice. The similar results were observed in gross and net monetary return which was rupees 39321.9 & 24007.9 and for control 27262.4 & 12448.5 per hectare. Demonstrations shown higher benefit cost ratio (2.59) over control (1.85). Integrated Crop Management (ICM) practices like soil testing, nutrient application, weed management, pest and disease management etc. results in higher yield levels and income.

Farmer's fetches additional price about Rs.4500-5100 per quintal due to its bold size and attractive color. Scientists conveyed farmers to store seed for next year and provide it to other farmers. Last year stored seed distributed to other farmers of the locality used it in current year in Baglan block. Likewise in year 2017-18 there is sharp increase about 68 ha in green gram area. Due to its long pod, higher numbers of seeds per pod, attractive color its demand increasing among farmers. This intervention not only showed good income but also made seed available to the locality to make the crop more popular in the nearby villages. Area under pulses and yield levels providing latest crop technologies, quality seeds, demonstration exposure meet etc. The results were at par with findings by Jayaakshmi et al., (2018).

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