



Role of Cluster Frontline Demonstrations in Enhancement of Chickpea Production

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ABSTRACT

The cluster frontline demonstration (CFLDs) on chickpea was conducted by Krishi Vigyan Kendra, Malegaon in two villages namely Vadel and Ajang of Malegaon tehsil during the rabi season of 2015-16. The results revealed that improved seed of Digvijay + seed treatment (Trichoderma viridi 5 g/kg + Rhizobium sp. 25 g/kg + PSB 25 g/kg) + plant protection (Pheromone trap 3 no./acre+ insecticide) recorded average highest yield 21.16 q/ha followed by 16.25 q/ha in control plot. The same trend was found in case of gross and net monetary returns, which was Rs. 84636/- and Rs. 51545/-ha and for control Rs. 64992/- and Rs. 28392/-ha, respectively. Benefit cost ratio for demonstration and control was 2.56 and 1.78, respectively. It can be concluded that the pulses production could be enhanced by encouraging the farmers through adoption of recommended technologies which were followed in the CFLDs.

Key words: CFLDs, Chickpea, Grain yield, IPM

INTRODUCTION

Chickpea is one of the most important pulse crop and occupies a major position among pulses in Maharashtra state. Output of pulses was 17.06 MT during 2015-16 (Anonymous, 2017). Chickpea is an important rabi crop mainly sown in September-November and harvested in February. Crop duration is 90-120 d depending on the variety. It is best suited to areas having low to moderate rainfall and a mild cold weather. Indian government imports large quantity of pulses to fulfill domestic requirement of pulses. In this regard, to sustain this production and consumption system, the Department of Agriculture, Cooperation and Farmers Welfare had sanctioned the project "Cluster Frontline Demonstrations on Rabi Pulses 2015-16" to ICAR-ATARI, Hyderabad through National Food Security Mission. This project was implemented by Krishi Vigyan Kendra, Malegaon of Zone-V with main objective to boost the production and productivity of pulses through CFLDs with latest and specific technologies.

MATERIALS AND METHODS

The present investigation of CFLDs was conducted during rabi season 2015-16 by the KVK Malegaon, District Nashik of Maharashtra state. Two villages namely Vadel and Ajang of Malegaon tahsil were selected for this project. Total 50 farmers were selected for the project. Farmers were trained to follow the package and practices for chickpea cultivation as recommended by the State Agricultural Universities and need based input materials provided to the farmers (Table 1).

The farmers followed the full package of practices like soil testing, seed treatment with bio-fertilizer, Trichoderma viride, fertilizer application, weed and water management, IPM practices etc. In case of local check, the traditional practices were followed in existing varieties like Chafa, local by the farmers. The yield data were collected from both CFLD and farmers practice plot (local check) and compiled results has been given in (Table 2).

Table 1. Details of need based input material given on CFLDs of chickpea

Cluster	Number of demonstrations	Variety	Technology Demonstrated	Need based inputs
Vadel	38	Digvijay	Improved variety, IPM	Improved Seed, Soil testing, Rhizobium spp., PSB, Trichoderma viride, pheromone traps, insecticide (Chloropyriphos 50% + Cypermethrin 5%)
Ajang	12			

Table 2. Details of yield and economics of cluster frontline demonstration on chickpea

Treatment	Yield (q/ha)	Gross Cost (Rs./ha)	GMR Rs./ha)	NMR (Rs./ha)	B:C ratio
T1: Farmers practice	16.25	33090.91	64992.73	28392.84	1.78
T2: Improved Seed Digvijay + seed treatment (<i>Trichoderma viridi</i> 5 g/kg + <i>Rhizobium sp.</i> 25 g/kg + PSB 25 g/kg) + plant protection (Pheromone trap 3 no./acre)	21.16	36599.89	84636.36	51545.45	2.56

RESULTS AND DISCUSSION

Cluster Frontline demonstrations on chickpea were conducted by using variety Digvijay in an area of 10 ha at 50 farmer's field in Vadel and Ajang villages of Malegaon block. The need based inputs provided to farmers per hectare were variety Digvijay seed 75 kg, *Rhizobium spp.* @ 1875 g, PSB @1875 g, *Trichoderma viride* @ 375 g, pheromone traps 3 no., insecticide (Chloropyriphos 50% + Cypermethrin 5%) @ 250 ml. Results concluded that average highest yield 21.16 q/ha found in demonstration plot followed by 16.25q/ha in control plot. The same trend found in case of CFLDs gross and net monetary returns, was Rs. 84636/- and Rs. 51545/- ha and for control Rs. 64992/- and Rs. 28392/-ha, respectively. Benefit cost ratio for demonstration and control was 2.56 and 1.78 respectively. This improvement in yield might be due to the application of seed treatment, use of fertilizers, timely weed and water management and integrated pest management practices.

Constraints Observed During CFLDS

The farmers' yields were affected by various environmental and socio-economic factors like non-availability of quality seed, load shedding of power for irrigation, unawareness of latest

technology, causes severe yield loss, delayed sowing, lack of improved seed-cum-fertilizer drill, use of recommended dosage of fertilizers etc. High losses in yield observed due to heavy infestation of *Helicoverpa armigera* due to improper method and time of application of pesticide.

CONCLUSION

Cluster frontline demonstrations on pulses (Chickpea) conducted in two villages in Malegaon tehsil and result concluded that average highest yield 21.16q/ha found in demonstration plot followed by 16.25 q/ha in control plot. There was 23.20 per cent increase in yield observed in demonstration plot over farmers' practice. It was observed that potential yield can be achieved by imparting scientific knowledge to the farmers, providing the quality need based inputs and proper application of inputs. Horizontal spread of improved technologies may be achieved by the successful implementation of frontline demonstrations and various extensions activities like training programme, field day, exposure visit organized in CFLDs programmes in the farmer's fields. For wide dissemination of technologies recommended by SAUs and other research institute, more number of FLDs should be conducted.

Role of Cluster Frontline Demonstrations



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