

*Short Communication*

Productivity Enhancement in Black Gram by Cluster Front Line Demonstrations

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ABSTRACT

The cluster frontline demonstration (CFLDs) on black gram was conducted by Krishi Vigyan Kendra , Nagapattinam in four villages namely Nangudi, Neduvasal, Kuttrampuruthanirrupu and Aarpakkam during the *rabi* season of 2015-2016. The results revealed that improved seed of VBN 6+ seed treatment (*trichoderma viridi* 5 g/kg + *Rhizobium spp* 25g/kg+ PSB 25g/kg) + plant protection (pheromone trap, yellow sticky trap + insecticide) recorded average highest yield 5.25 q/ha followed by 4.65 q/ha in control plot. Benefit cost ratio for demonstration and control was 3.42 and 3.26 respectively. It can be concluded that the black gram production could be enhanced by encouraging the farmers through adoption of recommended technologies which were followed in the Cluster Front Line Demonstrations.

Key Words: CFLDs, Black gram, Grain yield, IPM.

INTRODUCTION

Pulses are major sources of proteins among the vegetarians in India and complement the staple cereals in the diets with proteins, essential amino acids, vitamins and minerals. They contain 22-24 per cent protein, which is almost twice the protein in wheat and thrice that of rice. Pulses contribute 11 per cent of the total intake of proteins in India (Reddy, 2010). India is the largest producer as well as consumer of black gram. India produces about 1.5 m tons of black gram annually from about 2.5 mha of area with an average productivity of 400 kg/ha. Black gram output accounts for about 10 per cent of India's total pulse production. Black gram is one of the important pulses grown in 41.0 per cent of the total area under pulses in Tamil Nadu. The area under black gram in the state is around 3.40 lakh ha with a production of 1.20 lakh tons which accounts for an average productivity of 328 kg/ha. Rice fallow- black gram is being raised after the harvest of *Rabi* paddy. Hence efforts were made to

enhance productivity of black gram by conducting front line demonstrations at the farmers' field.

MATERIALS AND METHODS

The present investigation of front line demonstrations (FLDs) was conducted during summer irrigated season 2015-16 by the KVK, Sikkal, Nagapattinam district of Tamil Nadu. Four villages namely, Nangudi, Neduvasal, Kuttrampuruthanirrupu and Aarpakkam were selected for the project. Total 39 farmers were selected for the project. Farmers were trained to follow the package and practices for black gram cultivation as recommended by the State Agricultural University and need based input materials provided to the farmers (Table 1). The demonstration was conducted during 2015-16 with VBN 6 in an area of 22 ha in four locations against local variety. The demonstration showed that pod yield in the field was of main consideration by majority of the farmers. The other characters which

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Table 1. Details of need based inputs of black gram used in CFLD.

Cluster	Number of the Demonstration	Variety	Technology Demonstrated	Need based inputs
Nangudi	18	VBN 6	<ul style="list-style-type: none"> • High yielding variety- VBN 6 • Seed treatment with Imidacloprid @ 5ml/kg of seeds • Seed treatment with <i>Rhizobium</i>@ 10g /kg of seeds • Seed treatment with <i>Pseudomonas</i> @ 10g/ kg of seeds • Yellow sticky trap @ 5 Nos/ acre • Pheromone trap @ 5 nos/acre • TNAU pulse wonder @ 5kg/ acre 	<ul style="list-style-type: none"> • VBN 6 • Imidacloprid • <i>Rhizobium</i> • Yellow sticky trap • Pheromone trap • TNAU pulse wonder
Neduvasal	9	VBN 6		
Kuttrampuruthan irrupu	6	VBN 6		
Aarpakkam	6	VBN 6		

were considered important were number of plants/sq.m, plant height, number of pods/plant, total pod weight/sqm, 100 kernal weights.

All the farmers involved in the demonstration were given the seed of improved varieties along with recommended package of practices like seed treatment, bio fertilizer inoculation, fertilizer application, water and weed management, Integrated pest and disease management etc., to grow along with local check in the adjacent field with farmers practices. The performance of improved varieties were evaluated by organizing pre seasonal trainings, method demonstrations, field days and by taking crop cut experiment. Regular visit by the scientist helped in proper execution of trials as well as collecting farmer's opinion on the demonstrated varieties. The performance of the varieties in the trials was judged visually as well as quantitatively by farmers themselves. The crop cut experiments conducted during crop growth period by considering some of the important characters

namely no of plants/sq.m, plant height, no. of pods/plant, total pod weight/sq.m revealed that improved variety yielded better compared to local check.

RESULTS AND DISCUSSION

The data (Table 2) revealed that average highest yield 5.25 q/ha was found in demonstration plot followed by 4.65q/ha in control plot. The economic analysis of demonstration indicated that a total cost of Rs 9210/- have incurred by the improved varieties with package of practices as against Rs 8550/- for local check. The gross income of demonstration was Rs 31,500 /ha as against local check of Rs 27,900 /ha in VBN 6. Benefit cost ratio for demonstration and control was 3.42 and 3.26, respectively. This result is in accordance with findings that Farmers practice with no nutrients application registered lesser gross return, net return and BCR over other treatments of Ramesh *et al* (2016). This improvement in yield might be due to the application of seed treatment, use of fertilizers,

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

Treatment	Yield (q/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B: C ratio
Farmer's practice	4.65	8,550	27,900	19,350	3.26
Demo. plots	5.25	9,210	31,500	22,290	3.42

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timely weed and water management and integrated pest management practices. By incorporating proven technologies of black gram, yield potential and net income from black gram cultivation can be enhanced to a great extent with increase in the income level of the farming community of the district. This finding was in corroboration with the findings of Poonia and Pithia (2011) and Veeramani *et al* (2017)

CONCLUSION

Cluster front line demonstration on black gram conducted in four villages of three blocks and results concluded that average highest yield 5.25 q /ha found in demonstration plot followed by 4.65 q/ha in control plot. There was 11.43 per cent increase in yield observed in demonstration plot over farmer's 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 front line demonstration and various extensions activities like training programme, field day, exposure visit

organized in CFLDS programmes in the farmers fields. The farmers have shown keen interest to grow these varieties in large area in the ensuing seasons.

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