

Frontline Demonstrations (FLD) : A bridge of Commutation on Knowledge and Productivity enhancement of Blackgram (Urdbeen) in Shahjahanpur district of U.P.

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Abstract

The study clearly revealed that demonstration at farmers' field resulted in more knowledge of improved package of practices by farmers. More number of farmers can be benefited by conducting need based front line demonstration. Thus it could be concluded that the frontline demonstration would be bridge of communication, exiting huge extension and technological gap by showing the scope of blackgram (Urdbeen) productivity enhancement at farmers' fields and resulted in more knowledge to the farmers. More numbers of farmers benefited by conducting need based frontline demonstration. The maximum increase in productivity was recorded in 100% RDF of NPK + 25 kg per ha Sulphur, though it was comparable with the blackgram (Urdbeen) productivity only through recommended dose of NPK. Pant Urd 35 and Pant Urd 31 were found better in term of blackgram productivity against local check T9. The technology index illustrates the achievability of the demonstration technology at farmers' field. More will scope of the technology demonstrated in yield enhancement with lower value of technology index. The average value of technology indexes were estimated 52 percentages under nutrient management and 32 percentages under improved varieties of blackgram (Urdbeen) in both the Kharif season 2010 & 2011. The technology index displays the likelihood of technology demonstrated which result in blackgram productivity enhancement through technological intervention made to lessen the yield gap in blackgram (Urdbeen).

Key words: Technological gap, frontline demonstration, blackgram, productivity

Introduction

India is producing 14.76 million tons of pulses from an area of 23.63 million hectare, which is one of the largest pulses producing countries in the world. However, about 2-3 million tons of pulses are imported annually to meet the domestic consumption requirement. Thus, there is need to increase production and productivity of pulses in the country by more intensive interventions. The productivity of Blackgram (Urdbeen) in India is presently very low due to the technological gaps in adoption of improved technologies and other socio economics factors. Blackgram (Urd) grain yield can be increased by demonstrating improved agro techniques at the farmers' fields with active participation of farmers with technical experts. Keeping the importance of blackgram (Urdbeen) in Shahjahanpur, the KVK, Shahjahanpur conducted Frontline demonstration on improved agro technologies of Blackgram crop in scientific manner at farmers' fields during Kharif season in the year 2010 and 2011.

Methodology

Farmers' operational areas of Krishi Vigyan Kendra, Shahjahanpur were selected as per guide lines

of Front Line Demonstrations to KVK by Zonal Project Coordinator of Zone IV. Accordingly the FLDs under blackgram (Urd) crop laid out in villages; namely Seharamau Daxini, Dhakiya Hamid Nagar, Dilawarpur, Raghwapur Khurd and Mohmmadpur. The knowledge level of the farmers in these five villages was also estimated by taking random sample of 20 farmers each village. Thereby sample included 100 numbers of farmers in the study. The farmers were asked to reply questions about the improved agro techniques including the high yielding varieties of black gram (Urdbeen). The score so obtained under various questions were summed up. On the basis of the the total score obtained, respondents were categorized in to three classes *i.e.* low, medium and high level of knowledge.

The participating farmers were provided with all advance technical know how about advanced cultivation of blackgram (Urdbeen). Also KVK Scientist visited regularly to the demonstration fields and continuously guides the farmers. These varieties were also utilized for collection of feedback information for more improvement in technology transfer

programmes. Field days and group meetings were also organized at the demonstration sites to provide the opportunities for other farmers to witness the benefits of demonstrated technologies. The data on blackgram (Urdbeen) productivity (q/ha) were collected from the demonstration and control plots (Farmers practice) for further analysis. The critical inputs were duly supplied to the farmers by KVK. Data were collected from the fields of FLDs farmers and analysed to compare the yields of farmers' field and FLDs field. The technology gap, extension gap and technology index were estimated by formulae provided by Samui *et al.* 2000.

Technology gap = Potential yield – demonstration yield
 Extension gap = demonstration yield – farmers practice yield (control)

Potential yield – Demonstration yield
 Technology index = $\frac{\text{Potential yield} - \text{Demonstration yield}}{\text{Potential yield}} \times 100$

Results and discussion

1. Knowledge level of advanced agronomic practices of Blackgram (Urdbeen)

To know the need of the technological intervention the knowledge level of the farmers in five villages were estimated from 100 farmers 20 from each village. Over all Maximum number of farmers fall in category of medium level knowledge, while very few were with high knowledge level (Table 1). Thus need was felt to introduce latest varieties and nutrient management in front line demonstration programme in the five villages. FLD is good extension tool to demonstrated impact of new agro technique to the farmers.

Table 1: Overall knowledge level of farmers in respect of cultivation of Blackgram (Urd), N= 100

Category of knowledge level	Score range	No. of farmers	%tage of espondents
Low	30-35	36	36
Medium	36-54	49	49
High	55-75	15	15

2. Front Line Demonstration on improved nutrient management on blackgram (Urdbeen) productivity:

Front line demonstrations on nutrient management were conducted with 100% NPK nutrient supply through as recommended fertilizer dose of NPK through chemical fertilizer, 100 % of recommended NPK along with 25 kg sulphur, 100 % of recommended NPK + 10 t/ha FYM and no nutrients supply at all under control respectively during Kharif 2010 and 2011 at Seharamau Daxini and Dilawarpr villages.

The maximum increase productivity (70%) was recorded in 100% of RDF of NPK + 25 kg/ha Sulphur, though it was comparable with the productivity (52%) under recommended dose of NPK fertilizer only through chemical fertilizesr and RDF + FYM. Farmers' feed backs were also positive about effect of sulphur with recommended dose of NPK nutrients on quantity and quality of blackgram (Urdbeen) under 100 percent NPK dose + 25 kg/ha sulphur. The highest communication gap (4.40) reduced by using 100 % RDF of NPK + 25 kg/ha Sulphur and the lowest technology index (19) was observed in 100 % RDF of NPK + 25 kg/ha Sulphur. The technology index varied from 19 to 52 percentage under various improved nutrient management technique (Table 2)

3. Front Line Demonstration on improved varieties on blackgram (Urdbeen) productivity:

Pant urd 35, pant urd 31, shekhar urd 1 and Narendra urd 1 were found better in term of blackgram productivity against local check variety of urd T9 at Seharamau Daxini, Dhakiya Hamid nagar, Dilawarpur, Raghwapur Khurd and Mohmmadpur villages. Increase productivity in blackgram (Urdbeen) was observed from 40-62 per cent in above said villages. Pant Urd 35 exceptionally well over control variety T9 and Narendra Urd 1. The Highest technology communication gap and lowest technology index were observed in Pant Urd 35 over Pant Urd 35, Shekhar 1, Narendra Urd 1 and Local check, respectively. Yadav *et al.*, 2007 also highlighted the impact of FLD in convincing (communicating method) the farmers for adoption of improved techniques for enhancing the

Table 2 : Demonstration on improved nutrient management of blackgram (Urdbeen) at five villages during Kharif 2010 and 2011.

Component of FLD	Variety	No. of Demonstration	Area (ha)	Productivity (ha) ± SE	Increase in productivity (%)	Technology gap	Communication/ Extension Gap	Technology index
RDF(100% NPK)	PU 35	10	4.0	9.50±3	52	3.65	3.25	28
100% NPK+S (25 kg/ha)	PU 35	12	4.8	10.65±2	70	2.50	4.40	19
RDF + FYM (10 t/ha)	PU 35	14	5.6	9.25±2	48	3.90	3.00	30
Control	PU 35	14	5.6	6.25±5	-	6.9	-	52
Potential Yield with all inputs	PU 35	5	2.0	13.15±2				

Table 3 : Performance high yielding varieties of blackgram (Urdbeen) under FLD.

Variety	No. of Demonstration	Area (ha)	Productivity (ha) \pm SE	Increase in productivity(%)	Technology gap	Communication/ Extension Gap	Technology index
PU 31	10	4.0	9.50 \pm 3	46	3.65	3.00	28
PU 35	10	4.0	10.50 \pm 2	62	2.65	3.75	20
Shekhar 1	5	2.0	9.25 \pm 3	44	3.90	2.75	30
Naredra Urd 1	5	2.0	9.10 \pm 3	40	4.05	2.60	31
Local (T9)	10	4.0	6.50 \pm 6	-	6.65	-	51
Potential yield with all inputs			13.15 \pm 2				

pulse productivity.

importance of extension techniques for communicating to the farmers about the improved agro techniques for enhancing the productivity. The technology index illustrates the achievability of the demonstrated technology at farmers' fields and 20 to 51 percentages (Table 3) for varieties, respectively. However, the average value of technology indexes were estimated 32 percentages under nutrient management and 16 percentages under improved varieties of blackgram in both the years.

Conclusion

Very few farmers had the knowledge of improved practices of pulse cultivation. The farmers need to be made well aware about the improved package of practices including high yielding varieties. The maximum increase in productivity was recorded in 100% RDF of NPK + 25 kg per ha Sulphur, though it was comparable with the blackgram (Urdbeen) productivity only through recommended dose of NPK. Pant Urd 35 and Pant Urd 31 were found better in term of blackgram productivity against local check T9. The technology index illustrates the achievability of the demonstration technology at farmers' field. More will scope of the technology demonstrated in yield enhancement with lower value of technology index. The average value of technology indexes were estimated 52 percentages under nutrient management and 32 percentages under improved varieties of blackgram (Urdbeen) in both the Kharif season 2010

& 2011. The technology index displays the likelihood of technology demonstrated which result in blackgram productivity enhancement through technological intervention made to lessen the yield gap in blackgram (Urdbeen).

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