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Research Article

Impact of Front Line Demonstration and Traditional Farmers Practice on Summer Moong under Irrigated Condition

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ABSTRACT

Front line demonstration (FLD) was carried out at farmer's field by Krishi Vigyan Kendra, Sadalpur, Haryana to find out the yield gap of summer moong between demonstrated field and farmers practices (FP) under irrigated condition. It was observed that, the average of both the years i.e., 2017-18 and 2018-19 the yield of summer moong in demonstrated field was 6.01 q/ha whereas, in traditional farmer's practices it was found 5.0 q/ha. The average of technology gap, extension gap and technology index was 5.99, 1.0 and 49.95 respectively was recorded and the average cost benefit ratio was 1:95 and 1:65 in demonstrated field and farmer's practices was recorded during 2017-18 and 2018-19 respectively. The gap between the two practices i.e., front line demonstration and farmer's practices may be due to the farmers has not followed the Package and Practices and latest technology from sowing to final harvest period of summer moong.

Keywords: *Summer moong, MH-421, Front Line Demonstration, Farmer Practices*

INTRODUCTION

Moong [*Vigna radiata* (L.) Wilczek], also known as Greengram, is an important source of protein of vegetarian diet. Moong is a rich source of vitamin A, Iron, Calcium, Zinc and folate and sprouts moong is a good source of vitamin C (Calloway et al., 1994; Gopalan et al., 1989). This crop has the ability to fix the atmospheric nitrogen by symbiotic association with Rhizobium bacteria present in root nodules and fixed around 58-109 kg/ha nitrogen which is important for succeeding crops (Singh & Singh, 2011). It is a short duration crop and can be grown in neutral soils with good drainage. Summer moong can be grown in the last fortnight of March to third week of April after the harvesting of wheat crop. After the harvest of wheat it increase the nutrient status mainly nitrogen in soil which saves around 25 percent of nitrogen fertilizer application (Sekhon et al., 2007).

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India is the largest producer of moong with the estimate of 54 percent of the world production and covers 65 percent of the world acreage. Poor productivity of summer moong may be due to poor agronomic practices; nutrient management, weed management and application of pesticides are responsible and may be neglected due to poor returns.

MATERIALS AND METHODS

125 Front Line Demonstrations (FLD) have conducted by KVK Sadalpur in irrigated area during 2017-18 and 2018-19 in different villages of distract Hisar. In demonstrated field seeds of summer moong (MH-421) were sown as per information given in package of practices published by Chaudhary Charan Singh Haryana Agricultural University, Hisar. Soils of all the villages were sandy loam to loam in texture with low to medium in organic carbon content and other nutrients which is essential for plant growth. In demonstrated field, seeds of summer moong were sown after treated with Rhizobium culture with proper cultural and management practices as mentioned in Package of Practices. The output data of summer moong were collected from demonstrated field as well as traditional farmer's practices (FP) to find out the yield gap. Finally, the Technology gap, Extension gap, Technology index along with B:C ratio were analyzed as given by (Katare et al., 2011, Samui et al., 2000).

Technology gap = Potential yield – Demonstration yield

Extension gap = Demonstration yield – Farmer's practice yield

$$\text{Technology Index} = \frac{\text{Potential yield} - \text{Demonstration yield}}{\text{Potential yield}} \, x \, 100$$

RESULTS AND DISCUSSION

125 summer moong demonstration was carried out in farmer's field which cover an area 50 ha during 2017-18 and 2018-19 (Table: 1). In demonstration field, all the cultural and management practices were followed like use of improved variety of moong (MH-421), treatment of seeds with Rhizobium culture, use of Chloropyrifos in termite infested fields, proper weeding and application of fertilizers like DAP, Urea etc., proper doses of insecticides and fungicides etc. Mishra et al., (2018) concluded that the improved technologies by using improved variety of Greengram, treatment of seeds with Rhizobium culture, nutrients, weed, pests and disease management. The results revealed that the highest seed yield was obtained in demonstrated plot as compared to farmers practice plots. Dhillon, (2016) concluded that the increment in summer moong crop yield under front line demonstrations by using of improved and latest technologies, high yield varieties, recommended seed rate, fertilizer application and plant protection measures. The yield of summer moong under demonstrated field was 5.81 and 6.20 q/ha during 2017-18 and 2018-19 respectively and 5.0 q/ha in farmer's field during both the years under studied were recorded. Kothyari et al (2018) reported that the results obtained of chickpea crop under FLD were increased by conducting trainings and apply the knowledge as mentioned in package of practices; the farmers can achieved higher yields and net profit. Kumar et al., (2020) reported that the yield of wheat under frontline demonstration with improved variety found always greater than the yield of wheat in local check which could further be increased by adopting recommended production technology. Technology gap between demonstrated field and farmer's practices was recorded 6.19 in 2017-18 and 5.80 in 2018-19, extension gap was recorded 0.81 and 1.20 during 2017-18 and 2018-19 respectively and Technology Index 51.58 and 48.33 were recorded during 2017-18 and 2018-19 respectively and it showed the feasibility of the improved technology at the farmer's field. The

feasibility of technology will increased if the technology index was found lower. Kumar and Boparai, (2020) also reported that lower average technology index indicated the feasibility of summer moong crop in existing farmer practices.

Table: 1. Comparison of Yield, technology gap, extension gap and technology index in summer moong MH-421 between Front Line Demonstration and Farmer's Practices

Year	No. of farmers	Area (ha)	Yield (q/ha)			Technology Gap	Extension Gap	Technology Index
			PY	DY	FP			
2017-18	25	10	12.0	5.81	5.0	6.19	0.81	51.58
2018-19	100	40	12.0	6.20	5.0	5.80	1.20	48.33
Average			**12.0**	**6.01**	**5.0**	**5.99**	**1.00**	**49.95**

PY- Average Potential yield, DY- Demonstrated Yield and FP- Farmer's Practices

Table: 2 showed the average economics of demonstrations field and farmer's field. In both the farm trails i.e., demonstration field and farmer's practices the gross cost was same during both the year but the gross return was more in demonstrated field as compared with traditional farmer practices resulted net return was more in demonstrated field of growing summer moong this showed that using of latest technologies and proper management practices of growing summer moong was benefited as compared with farmer's practices. The B:C ratio of recommended practices under front line demonstration (1:5 and 2:4) was beneficial than farmer's practices plots (1:3 and 2:0) during both the year i.e., 2017-18 to 2018-19. Mishra et al., (2018) reported that higher net return of Greengram was obtained in the demonstration plots as compared to farmers practice plots. Hence, favorable benefit cost ratios proved that the using of scientific technologies and growing of summer moong crops as per described in Package of Practices by the farmers are more favorable to obtain the better return and higher yield than traditional farmer practices. Net return and B:C ratio of demonstrated plots of Greengram were higher than farmers practices reported by Suryavanshi et al., (2019).

Table: 2. Gross cost, Gross return, Net return and B:C ratio as affected by improved and traditional farming practices in summer moong

Year	Economics of demonstration				Economics of Farmer's practices			
	Gross cost	Gross return	Net return	B:C	Gross cost	Gross return	Net return	B:C
2017-18	16175	24360	8185	1:5	16175	21000	4825	1:3
2018-19	15800	38450	22650	2:4	15800	31250	15450	2:0
Average	**15987.5**	**31405.0**	**15417.5**	**1:95**	**15987.5**	**26125.0**	**10137.5**	**1:65**

CONCLUSION

After obtaining the results of both the farmers practices i.e. front line demonstration at farmers field conducted by Krishi Vigyan Kendra, Sadalpur with traditional farmer's practices, it is concluded that the farmer using the latest scientific technology and follows the guideline as mentioned in Package of Practices from sowing to final harvest of summer moong crop like using the improved variety, seed treatment with Rhizobium culture, conservation of moisture, timely sowing, timely application of weedicide, pesticides and irrigation etc., can obtained better quality higher yield and net returned. The gaps between both the practices can be overcome by organizing the trainings to aware the farmers about the latest technologies and various management practices for growing the summer moong crop.

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