Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2019; 8(6): 339-341
Received: 01-09-2019
Accepted: 03-10-2019

Rohit
SRF-All India Coordinated Research Project for Dryland Agriculture, R.B.S. College, Bichpuri, Agra, Utter Pradesh, India

Jitendra Singh
Assistant Professor, TMU, Moradabad, Utter Pradesh, India

Corresponding Author:
Rohit
SRF-All India Coordinated Research Project for Dryland Agriculture, R.B.S. College, Bichpuri, Agra, Utter Pradesh, India

Impact of front line demonstrations on sesame (*Sesamum indicum* L.) in Agra district of U.P.

Rohit and Jitendra Singh

Abstract
This investigation is an attempt to study the impact of frontline demonstration on sesame productivity. The study was conducted in two villages of kheragarh block of Agra district. An increase in productivity was observed due to adoption of interventions like seed treatment, use of high yielding varieties, sowing method and plant protection measure. The results of (Front Line Demonstrations) FLD shows that cultivation of high yielding variety of sesame (Pragati) recorded increased yield of 34.54 and 38.73% during *kharif* 2016 and 2017, respectively over local check. The technology gap which shows the gap in the demonstration yield over potential yield was 4.78 and 4.52 q/ha for *kharif* 2016 and 2017, respectively. The highest extension gap of 1.53 was recorded in *kharif* 2017. The technology index is 47.80 and 45.20 percent during 2016 and 2017, respectively. The study has shown that the FLD programme was found to be useful in imparting knowledge and adoption level of farmers in various aspects of sesame production technologies. FLD practices created greater awareness and motivated the other farmers to adopt appropriate sesame production technologies.

Keywords: Front line demonstration, sesame, B:C ratio, seed yield, technology gap, extension gap, technology index

Introduction
Sesamum (*Sesamum indicum* L.) are flowering plants, which are cultivated in the tropical regions and is widely cultivated for the edible seeds. This seed can grow in the places, which are drought prone and the lands where other crops fail to grow, this seeds grows at its best. It has the maximum oil content and it is used as a very common ingredient in the foods all over the world. Sesame is called as queen of oilseed crops by virtue of its excellent oil quality. It is having the highest oil content (46-64%) and dietary energy (6355 k cal/kg). India is the largest producer and exporter of sesame in the world (Puspha *et al*., 2003) [6]. The oilseeds scenario in the country has undergone a sea change. The main contributors to such transformation have been, 1) availability of improved oil seeds production technology and its adoption, 2) expansion of cultivated area, 3) price support policy, 4) institutional support, particularly establishment of technology mission on oilseeds in 1986 (Hedge, 2004) [2]. The improved technology packages were found to be financially attractive. Yet, adoption levels for several components of the improved technology were low emphasizing the need for better dissemination (Kiresur *et al*., 2001) [5].

The extant of adoption of improved agricultural technologies is a crucial aspect under innovation diffusion process and the most important for enhancing agricultural production at a faster rate. Large number of technologies evolved in the field of agriculture is not being accepted and adopted to its fullest extent by the farmers. The gap between recommendations made by the scientists and actual use by farmers is frequently encountered. With the start of technology mission on oilseeds, frontline demonstration on oilseed crops using new crop production technology was started with the objectives of sowing the production potential of the new technologies under real farm situation over the locally cultivated oilseed crops. The main objective of FLD is to demonstrate the crop production technologies and management practices in the farmers' field under different agro-climatic regions and farming situations. All India Coordinated Research Project for Dryland Agriculture, R.B.S. College, Bichpuri, Agra followed the concept of FLD and conducted demonstrations in two villages of Kheragarh block of Agra district.

Materials and Methods
The present investigation was carried out during the 2016 and 2017 *kharif* season in the two NICRA villages Nagla Dulhe Khan and Faziyatpura of Agra district. Materials and methods adopted for the frontline demonstrations are given in table-1. Locally cultivated varieties were

used as local check. The FLD was conducted to study the gaps between the potential yield and demonstration yield, extension gap and the technology index. To estimate the technology gap, extension gap and the technology index the formulae used (Samui *et al*., 2000) [8] are as follows-

Technology Gap = Potential yield - Demonstration yield
Extension Gap = Demonstration yield - Farmers yield

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

Table 1: Existing farmer's practices and improved practices demonstrated in frontline demonstrations at farmer's field in Agra

S. No.	Operations	Existing Farmers Practices	Improved Recommended Practices
1	Variety	Local	Pragati
2	Time of Sowing	June - July	June - July
3	Seed Treatments	Not Done	Carbendazim @ 2 gm/kg seeds + Streptocycline 2 gm/kg seeds
4	Method of Sowing	Broad casting	Line sowing
5	Plant Protection Measures	Non- adoption of recommended package of practices and injudicious use of pesticides	Thiram @ 2 gm/kg + Metasystox 25 EC @ 1 ml/lt in water

Results and Discussion

Frontline demonstrations were conducted involving Pragati sesame variety. Variety Pragati gave higher yield of 5.22 and 5.48 q/ha in comparison with local variety during 2016 and 2017 respectively (Table-2). The result indicates that the frontline demonstration have a good impact over the farming community of Agra as they were motivated by the new agricultural technologies applied in the FLD (Chand, 2002) [1]. Production of crop depends on the qualities of seed (Kumawat, 2008) [4]. The percent increase in the yield over local check was 34.54 and 38.73 during 2016 and 2017 respectively and average increase in yield was 36.48 percent during study period (Table-2). The technology gap which shows the gap in the demonstration yield over potential yield were 4.78 and 4.52 during *kharif* 2016 and 2017 respectively and the average technology gap was found 4.65 during the study period (Table-2). The technology gap observed may be attributed to dissimilarity in the soil fertility status and weather conditions. Hence location specific recommendation appears to be necessary to bridge the gap between the yields. The highest extension gap of 1.53 was observed during 2017 (Table-2) which emphasized the need to educate the farmers through various means for the adoption of improved high yielding varieties and newly improved agricultural technologies to reverse this trend of wide extension gap. More and more use of new HYV's by the farmers will subsequently change this alarming trend to galloping extension gap (Hegde, 2004) [2]. The new technologies will eventually lead to the farmers to discontinuance of old varieties with the new technology. The technology index shows the feasibility of the evolved technology at the farmer's field. The lower the value of technology index more is the feasibility of the technology (Samui *et al*., 2000; Kiresur *et al*., 2001; Sagar and Chandra, 2004) [8, 5, 7]. The technology index was 47.80 and 45.20 percent during 2016 and 2017 respectively which shows good performance of ICM in Agra conditions and this will accelerate the adoption of newer technologies to increase the productivity of sesame in this area. These results are in conformity with the findings of Sagar and Chandra (2004) [7] and Naik *et al.* (2016). Despite the lower yield levels in Agra the newer technologies for production of sesame has given a very good result in comparison to local check. It is clear that FLD programme had a positive impact over the existing practices in enhancing the crop productivity. Kirar *et al*. (2005) [3] also reported the similar type of findings. Mainly small and marginal farmers are associated with the cultivation and the use of new production technologies will substantially increase the income as well as the livelihood of the farming community. There is a need to adopt multipronged strategy that involves enhancing sesame production through area expansion and productivity improvements through better adoption of improved technology.

Table 2: Performance of front line demonstrations of sesame in Agra

Year	Seed yield (q/ha)			% Increase Over Local	Technology Gap	Extension Gap	Technology Index %	B:C Ratio	
	Potential	Demo	Local					Demo	Local Check
2016	10	5.22	3.88	34.54	4.78	1.34	47.80	4.52	3.44
2017	10	5.48	3.95	38.73	4.52	1.53	45.20	4.78	3.49
Average		5.35	3.92	36.48	4.65	1.44	46.50	4.65	3.47

Conclusion

The study has shown that the FLD programme was found useful in enhancing the knowledge of farmers in various aspects of sesame production technologies. FLD practiced created great awareness and motivated the other farmers to adopt appropriate sesame production technologies. The area of high yielding varieties of sesame has increased which will spread in the whole district including the adjoining area. The selection of critical input and participatory approach in planning and conducting the demonstration definitely help in the transfer of technology to the farmers.

Acknowledgment

Author is highly grateful to Indian Council of Agricultural Research, New Delhi and All India Coordinated Research for Dryland Agriculture, CRIDA, Hyderabad for providing financial support for conducting the experiments.

References

1. Chand R. Trade Liberalization, WTO an Indian Agriculture, Chapter 4, Mittal Publ., New Delhi, 2002.
2. Hedge DM. Becoming self - reliant. Hindu survey of Indian agriculture, 2004, 45-47.
3. Kirar BS, Mahajan SK, Nashine R, Awasthi AK, Shukla RK. Impact of technological Practices on the Productivity of soybean in front line demonstration. Ind. Res. J. of Extn. Edn., 2005, 5(1).
4. Kumawat SR. Impact of front line demonstration on adoption of improved castor production technology. Raj. J of Ext. Edu. 2008; 16:143-147.

5. Kiresur VR, Rumana Rao SV, Hedge DM. Improved Technologies on Oilseeds Production - An Assessment of their Economic Potentials in India. Agric. Eco. Res. Rev. 2001; 14:95-108.
6. Puspha R, Senthilkumar P. Studies on the combining ability in sesame (*Sesamum indicum* L.). Paper presented in the National Seminar on Advances in Genetics and Plant Breeding - Impact of DNA revolution, October 30-31, University of Agricultural Sciences, Dharwad, Karnauika, India, 2003.
7. Sagar RL, Chandra G. Front line demonstration on sesame in West Bengal. Agricultural Extension Review. 2004; 10:7-10.
8. Samui SK, Roy DK, Mandal AK, Saha D. Evaluation of Front Line demonstration on groundnut. J Indian Soc. Costal Agric. Res. 2000; 18:180-183.