INTERNATIONAL JOURNAL OF PLANT PROTECTION | VOLUME 7 | ISSUE 1 | APRIL, 2014 | 209-211
e ISSN-0976-6855 | *www.researchjournal.co.in* | Open Access

IJPP

RESEARCH ARTICLE

Yield gap analysis of linseed through front line demonstration in Dindori district of Madhya Pradesh

■ P.L. AMBULKAR[1]* AND HARISH DIXIT[2]

[1]Department of Plant Protection, Krishi Vigyan Kendra, DINDORI (M.P.) INDIA
[2]Krishi Vigyan Kendra, DINDORI (M.P.) INDIA

ARITCLE INFO

Received : 21.02.2014
Revised : 11.03.2014
Accepted : 23.03.2014

Key **W**ords :
Linseed, FLD, Yield gap, Front line demonstration

***Corresponding author:**
Email:plambulkar_2007@rediffmail.com

ABSTRACT

Front Line Demonstration is an appropriate tool to demonstrate recommended technologies among the farmers. JNKVV, Krishi Vigyan Kendra, Dindori (M.P.) conducted 52 demonstrations on linseed crop from 2007 -08 to 2010-11 in three blocks *viz.*, Bajag, Samnapur and Dindori of Four adopted villages Suniyamar, Mohada, Raipura, and Rusamal. The critical input was identified in existing production technology through farmers meeting and group discussions with the farmers. The average four years data revealed that an average yield of demonstration plot was obtained 4.43 q/ha over local check (2.74 q/ha.) with an additional yield of 1.69 q/ha and increase average linseed productivity by 63.01 per cent. The average technological indices were found to be 48.3 per cent and 55.0 per cent, respectively.

How to view point the article : Ambulkar, P.L. and Dixit, Harish (2014). Yield gap analysis of linseed through front line demonstration in Dindori district of Madhya Pradesh. *Internat. J. Plant Protec.*, **7**(1) : 209-211.

INTRODUCTION

Oilseeds form second largest agricultural commodity in India after cereals sharing 14 per cent of the gross cropped area and accounting for nearly 3 per cent of National gross product and 10 per cent value of all agricultural products. The continuous increase in import of oilseed is a matter of great concern today. Among the oilseed crops, linseed occupies a prominent position in Indian oilseed Scenario. During 2007-08, total area under linseed was 412 thousand hectares with total production of 260 thousand tonnes (Commissioner, Land Records, M.P., Ministry of Agriculture, Government of India, 2003) contribution 11.9 the total production in India (Total Oilseed production in India was 24.28 million tonnes during 2006-07) (Annonymous, 2005).

In Madhya Pradesh during 2007-08 the productivity of linseed was 452 kg/ha. area under cultivation was 157 thousand hectares and total production as 71 thousand tonnes. Though linseed crop occupies prominent position in the state in oilseed scenario but vast yield gap exists between the potential yield and yield under real farming situation.

In Dindori district in the year 2007-08 the area under linseed was found to be 8000 ha. with the production of 36.0 tons and the productivity recorded was 4.55 kg/ha (NIC Dindori, 2009). The poor productivity of linseed due to resource poor farmers are very reluctant towards proper scientific management of the crop.

MATERIAL AND METHODS

The study was carried by Jawaharlal Nehru Krishi Viswa Vidyalaya, Krishi Vigyan Kendra, Dindori (M.P.) during *Rabi* season from 2007-08 to 2012-13 (Six consecutive years) in the farmers field of six adopted village (Mohada, Suniyamar, Raipura, Rusamal, Barga, Bilasar and RARS Farm). During this four year study, an area of 20 hectares was covered with plot size 0.4 hectare under Front Line Demonstration with active participation of 52 farmers. Before conducting Front line demonstration, a list of farmers was prepared from group meeting and specific skill training was imparted to the selected farmers regarding different aspects of cultivation. The different between the demonstration package and existing farmers

Table A : Comparison between demonstration package & existing practices under linseed FLDs

Sr. No.	Particulars	Demonstration	Farmers practice
1.	Farming situation	Rainfed	Rainfed
2.	Variety	JLS 9 , Kartika, JLS 23 and JLS 27	Local seed materials
3.	Time of sowing	30 October to 15 November	10 November to 20 November
4.	Method of sowing	Line sowing	Broadcasting
5.	Seed treatments	Bavistine @ 3 gm/kg	Without seed treatment
6.	Seed rate kg. /ha.	30	40
7.	Fertilizer dose /ha.	N:P:K:S::60:30:20:20	N:P:K:S::40:20:00:00
8.	Plant protection	Need based application of Imidachloprid + Sulfex to protect the crop from sucking pest and diseases.	No use of plant Protection measures
9.	Weed management	Pre-emergence application of Pendamethaline @ 2.5 lit/ha. Followed by one hand weeding at 35 DAS.	Only One hand weeding

practices are given in Table A.

Seed of improved variety, line sowing and timely need based application of pesticide as well as balance dose of fertilizer (using micronutrient sulphur) were emphasised and comparison has been made with the existing practices Table A and Fig. A. The necessary step for selection of site and farmers layout of demonstration etc. were followed as suggested by Dr. Harish Dixit (2007-08). The traditional practices were maintained in case of local check. The data output were collected from both FLDs plots as well as control plots and finally the extension gap, technology gap, technology index along with the benefit cost ratio were worked out (Samui *et al.*, 2000) as given below :

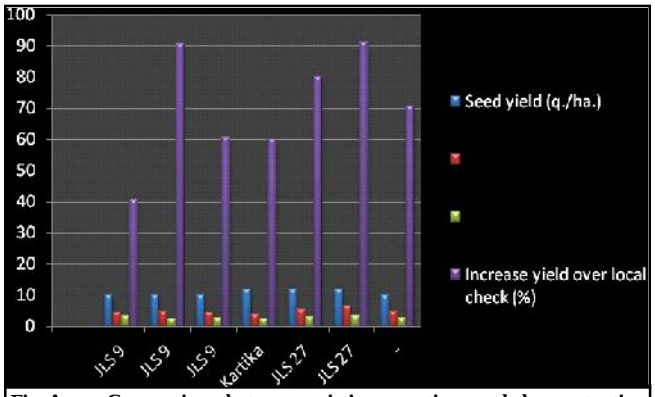

Fig. A : Comparison between existing practices and demonstration package under front line demonstration in lineseed

Technology gap = Potential yield – Demonstration yield

Extension gap = Demonstration yield – Farmers yield

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

RESULTS AND DISCUSSION

From the data of Table 1 and Fig. 1, it is relevant that the yield of linseed fluctuated successfully over the year in demonstration plot. The maximum yield was recorded (4.73 q/ha.) during 2008-09 and minimum yield was recorded in the year 2010-11 (4.0 q/ha) and the average yield of six years was recorded 4.43q/ha. Over local check (2.74q/ha.). The increase in per cent of yield ranged between 40.62 to 90.72 per cent during the six year studies. On an average basis, 63.01 per cent increase in yield was recorded. The results are in conformity with the finding of Tomar *et al.* (2003). Tiwari and Saxena (2001) and Tiwari *et al.* (2003). The results clearly indicate the positive effects of FLDs over the existing practices toward enhancing the yield of linseed in Zone of M.P. with its positive effects on yield attribute (Table 2). Benefit cost ratio was recorded to be higher under demonstration against control during all the sixs years of study.

The extension gap showed an increasing trend. The extension gap ranged between 1.30 to 2.25.q/ha. The study

Table 1: Productivity, technology gap, extension gap and technology index in linseed under FLDs

Year	Area (ha)	No. of Farmers	Variety	Seed yield (q./ha.)			Increase yield over local check (%)	Technology gap (q/ha.)	Extension gap (q/ha.)	Technology index (%)	B: C ratio	
				Potential	Dem.	Control					Dem.	Control
2007-08	5.0	13	JLS 9	10	4.50	3.20	40.62	5.50	1.30	55.0	1.97	1.75
2008-09	5.0	13	JLS 9	10	4.73	2.48	90.72	5.27	2.25	52.7	1.90	1.30
2009-10	5.0	13	JLS 9	10	4.5	2.80	60.72	5.50	1.70	55.0	1.80	1.30
2010-11	5.0	13	Kartika	12	4.0	2.5	60.0	8.0	1.50	48.3	1.54	1.10
2011-12	5.0	13	JLS 27	12	5.4	3.0	80.0	6.6	2.4	55.0	2.16	1.47
2012-13	5.0	13	JLS 27	12	6.5	3.4	91.18	5.5	3.1	45.83	2.88	1.84
Average	5.0	13	-	10	4.93	2.89	70.54	6.06	2.04	51.97	2.04	1.46

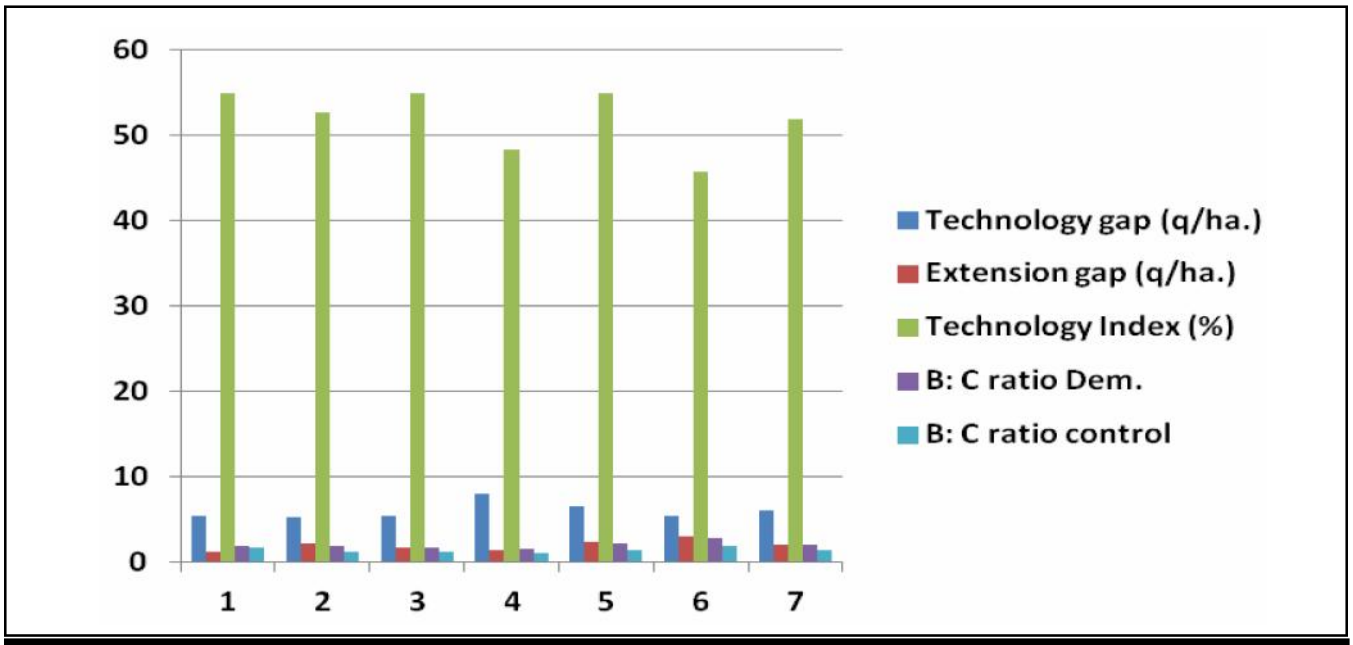

Fig. 1 : Fluctuation of yield in linseed

emphasized the need to educate the farmers through various means for adoption of improved agricultural production to reverse the trend of wide extension gap.

The trend of technology gap (ranging between 5.27 to 8.0 q/ha.) reflects the farmers co-operation in carrying out such demonstrations with encouraging results in subsequent year. The technology gap observed may be attributing to dissimilarity in soil fertility status and weather condition. Similar finding was recorded by Mitra *et al.* (2010).

The technology index showed the feasibility of the evolved technology at the farmer's fields. The lower value of technology index the more is feasibility of technology. As such fluctuation in technology index (ranging between 48.3 to 55 %) during the study period in certain region, may be attributed to the dissimilarity in soil fertility status, weather condition, non-availability of irrigation water and insect pest attack.

Conclusion :

From the above findings it can be concluded that use of scientific methods of linseed cultivation can reduce the technology gap to a considerable extent thus leading to increase productivity of linseed in the district. Moreover, extension agencies in the district need to provide proper technical support to the farmers through different educational and extension methods to reduce the extension gap for better oilseed production in the district.

REFERENCES

Anonymous (2005). Government of M.P. compendium of agricultural statistics. M.P. Agricultural Marketing Board. 114 pp.

Katare, Subhash, Pandey, S.K. and Mustafa, Mohd. (2011). Yield gap analysis of Rapeseed-mustard through front line demonstrations. *Agric. Update*, **6**(2) : 5-7.

Mitra, Biplab and Samajdar, T. (2010). Yield gap analysis of rapeseed through Front Line Demonstration. *Agric. Extn. Review*, **22** (1) : 16-17.

Samui, S.K., Maitra, S., Roy, D.K., Mandal, A.K. and Saha, D. (2000). Evaluation of front line demonstration on groundnut. *J. Indian Soc. Coastal Agric. Res.*, **18**(2) : 180-183.

Tiwari, K.B. and Saxena, A. (2001). Economic analysis of FLD of oilseed in Chhindwara. *Bhartitya Krishi Anusandhan Patrika*, **16**(3&4): 185-189.

Tiwari, R.B., Singh, Vinay and Parihar, Pushapa (2003). Role of FLD in transfer of gram production technology. *Maharashtra J. Extn. Edu.*, **22**(1) : 19.

Tomar, L.S., Sharma, B.P. and Joshi, K. (2003). Impact of front line demonstration of soybean in transfer of improved technology. *J. Extn. Edu.*, **22**(1) : 139.