Varietal Evaluation of Niger and Sunflower through Front Line Demonstrations in Konkan Region of Maharashtra

Mandavkar, P. M. [1], Manjarekar, R. G[2]. and M. S. Talathi[3]

1 Research Editor, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli (MS)
2 Assistant Professor, College of Agriculture, DBSKKV, Dapoli (MS)
3 Programme Coordinator, Krishi Vigyan Kendra, Roha, Raigad,(MS)
Email : mandavkarpm@rediffmail.com

ABSTRACT

Under Front Line Demonstrations programme, the technologies are demonstrated for the first time by the Scientists themselves before being fed to the main extension system of the State Department of Agriculture. In Konkan region of Maharashtra, efforts are being put in to boost up the oilseed production and also its productivity. The present study was conducted in 25 villages from Konkan region of Maharashtra, where Krishi Vigyan Kendra of respective district has already done the work of technology transfer in oilseed crop production. The technology gap was observed minimum i.e. 0.61 q/ha and 0.70 q/ha in niger variety IGP-76 and Phule karala, respectively in the location Thane district. However, technology gap of these varieties was observed maximum in Ratnagiri district. The extension gap was ranged 0.75 q/ha to 1.60 q/ha in all the locations which emphasized the need to educate the farmers in adoption of improved technologies to narrow these extension gaps. The technology gap was lowest (2.86 q/ha) in sunflower variety Pioneear-64599 and highest (4.20 q/ha) in variety Kargil 413. More or less for all the sunflower varieties the extension gap was high. According to criterion of technology index, niger crop variety IGP-76 and Phule Karala performed best in Thane district. The technology index was lowest (19.07 per cent) in case of sunflower variety Pioneer-64599 which is more feasible than any other varieties.

Keywords : *Variety, Technology gap, Extension gap, Technology index*

INTRODUCTION

In India Sunflower was grown on 18.13 lakh ha. with a production of 11.58 lakh tonnes and productivity of just 699 Kg/ha. during 2008-09. In Maharashtra, sunflower was grown over an area of 2.64 lakh ha. with production of 1.55 lakh tonnes and average yield of 587 kg/ha.Niger crop is grown on area of 3.93 lakh ha. with production of 1.16 lakh tonnes and average yield of 297 kg/ha in India, whereas, the area, production and productivity in Maharashtra was 0.39 lakh ha. 0.11 lakh tonnes and 297 kg/ha., respectively during the year 2008-09.

With a view to demonstrate under real farm situation the productivity potentials and profitability of a spectrum of improved oilseed crop production technologies, evolved by the oilseed research network in the country from time to time, on-farm demonstrations were organized through various technology transfer programmes of the Central and State. Among the most successful such programmes figured "Front Line Demonstrations in Oilseeds" Project, a component of the Oilseed Production and Development Programme (OPDP) of the Government of India that supplemented the Oilseed Technology Mission. Under this programme the technologies are demonstrated for the first time by the Scientists themselves before being fed to the main extension system of the State Department of Agriculture. The main objective was to demonstrate newly released crop production and protection technologies and its management practices in the farmer's field under different agro-climatic regions and farming situations under the close supervision of scientist.

In Konkan region of Maharashtra, efforts are being put in to boost up the oilseed production and also its productivity. With this in mind a study was conducted to estimate the technological and extension yield gaps and technology index of Niger and Sunflower varieties.

METHODOLOGY

The present study was conducted in 25 villages from Konkan region of Maharashtra, where Krishi Vigyan Kendra of respective district has already done the work of

technology transfer in oilseed crop production through Front Line Demonstration(FLD) programme. For selection of respondents for this study, a total list of FLD farmers was collected from four KVKs. By adopting systematic sampling design 100 respondents who had actually undertaken the demonstration with control trial were selected for the study. The data was collected one year after FLD programme through personal interview technique with the help of interview schedule developed for the study.

This gap index was calculated with the help of formula given below:

$$\text{Technology gap} = Pi - Di$$

$$\text{Extension gap} = Di - Fi$$

$$\text{Technology index} = \frac{Pi - Di}{Pi} \times 100$$

Where,

Pi =Potential yield of the crop

Di =Demonstration yield of the crop

Fi = Farmers plot (Local) yield

RESULTS AND DISCUSSION

Technology gap and extension gap

The technology gap was due to non-transferable technologies such as recommended plant population per hectares and environmental differences between Research station and KVK focal village. The extension gap was due to resource-cum-management-cum-extension efforts. It is difference between the yield obtained due to adoption of technology in demonstration plot and yield obtained from traditional method of cultivation.

Table 1 : Technological and Extension yield gap and Technology Index for demonstrated niger crop technology

Year	Variety used	Location (District)	No. of Demo.	Yield (q/ha)			Technology gap (q/ha)	Extension gap (q/ha)	Technology index (%)
				Potential	Demo.	Local check			
2008-09	IGP- 76	Ratnagiri	13	4.75	2.75	2.00	2.00	0.75	42.11
2008-09	IGP- 76	Thane	15	4.75	4.14	2.70	0.61	1.44	12.84
2009-10	Phule karala	Ratnagiri	12	5.00	3.18	2.15	1.82	1.03	36.40
2009-10	Phule karala	Thane	10	5.00	4.30	2.70	0.70	1.60	14.00
Average			**50**	**4.88**	**3.59**	**2.39**	**1.28**	**1.21**	**26.34**

A perusal of Table 1 enlightens the fact that, the technology gap was observed minimum i.e. 0.61 q/ha and 0.70 q/ha in niger variety IGP-76 and Phule karala respectively in the location Thane district. However, technology gap of these varieties was observed maximum in Ratnagiri district. This may be due to the soil fertility and weather conditions. The extension gap was ranged 0.75 q/ha to 1.60 q/ha in all the locations which emphasized the need to educate the farmers in adoption of improved technologies to narrow these extension gaps. The findings are in line with the findings of Goswami *et al.* (1996).

Table 2. Technological and Extension Yield gap and Technology Index for demonstrated Sunflower crop technology

Year	Variety used	Location (District)	No. of Demo.	Yield (q/ha)			Technology gap (q/ha)	Extension gap (q/ha)	Technology index (%)
				Potential	Demo.	Local check			
2008-09	Kargil 413	Sindhudurg	10	15.00	12.00	7.90	3.00	4.10	20.00
2008-09	Kargil 413	Ratnagiri	10	15.00	10.80	7.30	4.20	3.50	28.00
2009-10	Pioneer 64599	Sindhudurg	10	15.00	12.14	8.10	2.86	4.04	19.07
2009-10	Suryakiran	Ratnagiri	10	15.00	11.40	8.00	3.60	3.40	24.00
2009-10	Morden	Raigad	10	12.00	8.10	6.15	3.90	1.95	32.50
Average			**50**	**14.40**	**10.89**	**7.49**	**3.51**	**3.40**	**24.71**

It was observed from Table 2 that, the technology gap was lowest (2.86 q/ha) in sunflower variety Pioneear-64599 and highest (4.20 q/ha) in variety Kargil 413. Further, it is seen that there exist a wide gap between potential yield and demonstration yield. The reason accountable for this is the non-availability of location specific varieties and non-adoption of certain recommended package of practices like Azospirillum culture, proper intercultural operations and water management even on the demonstration fields.

The extension gap was highest (4.10q/ha) in case of variety Kargil 413 demonstrated in Sindhudurg district while lowest (1.95 q/ha) in variety Morden demonstrated in Raigad district. More or less for all the sunflower varieties the extension gap was high. This existence of extension gap was because the fellow farmers failed to adopt recommendations for important practices like seed treatment, proper seed rate and fertilizer dose, planting distance and intercultural operations.

Technology Index

For ascertaining feasibility of evolved oilseed technology at the farmer's field, technology index was calculated. The criteria is lower the value of technology index more is the feasibility of the technology.

It was observed from Table 1 that the technology index was highest in niger variety IGP-76 (42.11 per cent) and Phule Karala (36.40 per cent) in Ratnagiri. However, both varieties have lowest i.e.12.84 and 14.00 per cent technology index in Thane district. Hence, according to criterion variety IGP-76 and Phule Karala performed best in Thane district. The possible reason that could be attributed to the high feasibility of niger production technology was that the participant farmers were given opportunity to interact with the scientist and they were made to adopt recommended practices and skills during the process of demonstration.

Table 2 indicating the technology index of sunflower variety demonstration in three districts resulted that technology index was highest in variety Morden (32.50 per cent) followed by Kargil-413 (28.00 per cent) and Suryakiran (24.00 per cent). The technology index was lowest (19.07 per cent) in case of variety Pioneer-64599 which is more feasible than any other varieties. As the technology index of other varieties was observed more than 20.00 per cent, this indicates that a wide gap exist between the technology evolved at Research Station and farmers field. The findings are supported by the findings of Sharma and Sharma(2004).

CONCLUSION

It was concluded that, nearly all the niger and sunflower varieties except few, the extension gaps was higher than the technology gaps resulting into low adoption of technology on farmers field. It means that, the full potential of the crops on farm thus remains untapped even though there is technology explosion in this fast changing world. There is need to educate the farmers regarding certain partial or non-adopted recommended package of practices like seed treatment, proper sowing method, and application of copper sulphate, lime and intercultural operations even on the demonstration fields. This calls for critical monitoring of front line demonstrations so that the potential farm yield of the crops can be realized.

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