

Front line demonstration-An effective tool for increasing productivity of Niger in Thane district of Maharashtra

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ABSTRACT

Niger is an important oilseed crops of tribal farmers of Maharashtra, which plays a major role in supplementing the income and also fulfill requirement of cooking oil of small tribal farmers of Thane district (M.S.).The Front Line Demonstration were conducted by the Krishi Vigyan Kendra, Kosbad Hill, dist- Thane(M.S.) with improved package of practices of niger cultivation for four years (2003-04 to 2006-07) and achieved the expected yield as compare to district productivity. The yield of niger can be increased by demonstrating their cultivation technologies at the farmer's field under the supervision of scientists working in operational area. During the period under study, it was observed that yield of demonstration was significantly higher (473kg/ha) than the farmers practices *i.e.* local check (250kg/ha). In all the years front line demonstration showed a significant increase in yield *i.e.* 61.42% over farmer's practices.

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Key words : Niger, Front line demonstration, Yield, C:B ratio

INTRODUCTION

Niger (*Guizotia abyssinica*) is an important oilseed crop of tribal farmers of Maharashtra, India. Niger seed is an oilseed crop produced principally in Ethiopia, India, Myanmar and Nepal. Thirty per cent of the seed is used as oil. When extracted the oil is used in foods, for paint and soap making and for lighting. In Ethiopia this is the main edible oil in use. In India about 75 per cent of the harvested seeds are used for oil extraction while the rest is exported for bird food. Roasted or fried seeds are eaten as a snack or used as a condiment. The press-cake from oil extraction contains 31 to 40 per cent protein and is used for feeding cattle. In the United States of America, niger seed is considered a high value crop for the bird food industry, and initiatives have been underway to introduce it as a cash crop alternate. The main production areas of Niger seed are Ethiopia and India. The crop is also grown in Nepal, Myanmar, Bangladesh and several countries in eastern and central Africa.

Oilseed in India account for 1.4% of GDP and 7% of value of all agricultural products. About 14 million farmers are involved in oilseeds production and a million in processing. India ranks first in production and area of Niger in world. India has produced 27.719 million tonnes of oilseeds during 2008-09 from an area of 27.558 million ha and productivity of 10.10 quintal/ha .In Maharashtra area under total oilseed crop is 3.98 million ha having production 3.41 million tonnes and productivity 8.6 quintal/

ha during 2008-09 (Anonymous, 2011).But, the niger production in India is 110,000t during 2007-08.(Hegde and Venkattakumar 2009). In Maharashtra area and production of niger is 0.825 Lakh ha and 0.20 Lakh tonne having productivity 242 kg/ha (M.S. Aril. Deptt. 1988-89)

Now a day's oilseeds are more beneficial to the tribal farmers in terms of money as compared to cereals. The niger crop grown by tribal farmers of Thane district mainly for fulfillment of daily requirement of cooking oil. Keeping in view of above facts, FLD was introduced by ICAR, New Delhi, with the inception of technology mission of pulse and oilseed crops during mid eighties. The basic objectives of FLD are to speedy spread of the newly introduced high yielding variety of niger and get acquaint extension functionaries and local farmers with front line varieties and management technologies.

MATERIALS AND METHODS

Front line demonstration on niger was conducted by Krishi Vigyan Kendra, Kosbad Hill, Dist- Thane(M.S.) during the period from 2003-04,2004-05,2005-06 and 2006-07 in *Kharif* season, in two villages (Nyahale and Nagarmoda) of Jawahar tehsil. The total 112 number of farmers were associated under this programme. The demonstration of improved technology was taken in an area 0.4 ha of each farmers. The area covered in 4 years was 45 ha for demonstration of recommended improved practices of niger. In the demonstration, one control plot

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was also kept where farmer practices were carried out. Regular visits by the KVK scientists to demonstration fields were ensured and made to guide the farmers. These visits were also utilized to collect feedback information's for further improvement in research and extension programme. Field days and group meetings were also organized at demonstration field to provide the opportunities for other farmers to witness the benefits of demonstrated technologies. The result was compared with the full package of practices. The primary data was collected from the selected FLD farmers with the help of interview schedule and interpreter and presented in the term of percentage and the qualitative data were converted into quantitative form and expressed in term of per cent increased yield which was calculated by using following formula.

$$\% \text{ increased yield} = \frac{\text{Demonstration yield} - \text{Farmers yield}}{\text{Farmers yield}} \times 100$$

RESULTS AND DISCUSSION

In Thane district niger is important oilseed crop grown in *Kharif* season. The difference between the demonstration package and farmer practices lacked the improved package of practices on niger cultivation.

Perusal of data (Table 1 and 2) revealed that under demonstration plots, niger yield was found significantly higher than that under farmers practice during all the year. Under different location the niger yield in demonstration plots ranged between 456kg/ha to 503kg/ha over farmers practice. On an overall basis demonstration plot gave higher (473kg/ha) average yield over farmers practice (250kg/ha) due to adoption of whole package of practices. These result are in conformity with the findings of Patil *et al.* (2004) and Anonymous (2005) and Patil *et al.* (2010). The percentage increased in yield of demonstration plot was 61.42 over farmers practice due to adoption of whole package of practices. These results are in conformity with the findings of Patil *et al.* (2004), Anonymous (2005). The above findings are in conformity

Particulars	Demonstration	Farmers Practices
Variety	IGP-76	Local
Seed rate	5-6kg/ha	5-6kg/ha
Seed treatment	Thirum-3g/kg	No seed treatment
Situation	Rainfed	Rainfed
Fertilizer dose	20:40 N:P kg /ha through urea and S.S.P	15 kg/ha of nitrogen
Plant Protection	Need based insecticide and fungicide application	No spray of insecticide and fungicide

with findings of Tiwari and Sexena (2001) and Patil *et al.* (2010) in other oilseed crops.

The yield increase in niger mainly due to knowledge and adoption of production technology, use of high yielding variety IGP-76, proper sowing time, seed treatment, method of fertilizer application and plant protection practices adopted under front line demonstration. These findings are in conformity with the findings of Patil *et al.* (2004). Similarly Singh (2002) and Kirar *et al.* (2005) also emphasized the important of FLD in other oilseed crops.

The economic analysis given in the Table 3 indicates that the average cost of production and gross return of FLD programme were Rs. 9067.5/ha and Rs. 13969/ha, respectively. In Control Plot (Farmers practice) cost of production and gross return were Rs. 7477.50/ha and Rs. 8657.5/ha, respectively. The cost benefit(C:B) ratio of FLD programme in niger crop ranged from 1:1.45 to 1:1.63 with over all year average 1:1.54 in the form of increase in yield and net return over farmers practice. These result are in conformity with the findings of Patil *et al.* (2004). These result are in conformity with the findings of Billore *et al.* (2004) and Patil *et al.* (2010) in other oilseed crop.

Conclusion:

By conducting front line demonstration of improved

Table 2 : Increasing the productivity of niger through front line demonstration

Year	Under FLD programme		Average yield (kg/ha)		% yield increase over farmers practice
	Total farmers	Total area(ha)	FLD	Farmers practice	
<i>Kharif</i> 2003-04	25	10	472	310	52.25
<i>Kharif</i> 2004-05	25	10	456	273	67.03
<i>Kharif</i> 2005-06	37	15	503	295	70.50
<i>Kharif</i> 2006-07	25	10	463	297	55.90
Total/ Average	112	45	473	250	61.42

Table 3 : Economics of front line demonstration on niger

Season and year	FLD programme		Control (Farmers practice)		C:B ratio	
	Total cost of production (Rs./ha)	Gross return (Rs./ha)	Total cost of production (Rs./ha)	Gross return (Rs./ha)	FLD	Control
<i>Kharif</i> 2003-04	8600	13216	7060	8680	1:1.53	1:1.23
<i>Kharif</i> 2004-05	8860	13680	7300	8190	1:1.54	1:1.12
<i>Kharif</i> 2005-06	9250	15090	7450	8850	1:1.63	1:1.19
<i>Kharif</i> 2006-07	9560	13890	8100	8910	1:1.45	1:1.0
Total/ Average	9067.50	13969	7477.50	8657.50	1:1.54	1:1.16

package of practices, yield potential of niger crop can be increased to a great extent. This is concluded that FLD programme was effective for increasing the productivity as well as increasing net returns of the farmers and also improves the skill and knowledge of farmers.

REFERENCES

- Anonymous (2005).** Observation made during “National seminar on strategies for enhancing production and export of sesame and niger” and Annual Workshop of AICRP on sesame and niger research workers 2005” held at Mandor, Jodhpur from April 7-10.
- Anonymous (2011).** Government of India, Ministry of Statistics and programme Implementation. *Statistical Year Book of India*, pp. 116-124 .
- Billore, S.D., Joshi, O.P. and Dupase, B.U. (2004).** Impact of front line demonstration on augmenting the soybean productivity. *J. Oilseed Res.*, **21**(2):352-353.
- Hegde, D.M. and Venkattakumar, R. (2009).** The yellow revolution on anvil. *Agriculture Year Book*, pp. 62-65.
- Kirar, B.S., Mahajan, S.K., Nashine, R., Awasti, H.K. and Shukla, R.K. (2005).** Impact of technological practices on the productivity of the soybean in front line demonstration. *Indian Res. J. Extn. Edu.*, **5** (1): 42-44.
- Patil, H.S., Purkar, J.K., Dhadge, S.M., Shinde, S.H. and Deshmukh, R.B. (2004).** Front line demonstration of niger in Maharashtra state : An overview. *Res. On Crops*, **5**(1) : 36-40.
- Patil, H.S., Purkar, J.K., Dhadge, S.M., Shinde, S.H. and Deshmukh, R.B. (2004).** Constraint analysis and impact of improved package of practices on yield of niger in Maharashtra. *Res. On Crops*, **5**(1) : 41-43.
- Patil, Y.G., Mahajan, S.J., Patil, C.H., Deshetti, A.S. and Sarode, P.N. (2010).** Front line demonstration- An effective tool for increasing the productivity of groundnut and soybean in Jalgaon district of Maharashtra: *Internat. J. agric. Sci.*, **6**(1):88-90.
- Singh, P.K. (2002).** Impact of participation in planning on adoption of new technology through FLD. *MANAGE Extn. Res. Rev.*, July-Dec. 45-48.
- Tiwari, K.B. and Sexena, A. (2001).** Economic analysis of FLD of oilseed in Chindwara. *Bhartiya Krishi Anusandhan Patrika*, **16**(3&4):185-189.

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