

Research Article

Impact of front line demonstration of oilseed crops in transfer of improved technology in India

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SUMMARY : Oilseed crops have been the backbone of agricultural economy of India from time immemorial. Oilseeds are the main source of raw materials for vegetable oils. They are essential components of human diet and are rich source of energy and earners of fat soluble vitamins A, D, E and K. The productivity of oilseed crop in the district is low (7 q/ha) as farmers are growing these crops in marginal area and due to non-adoption of improved package of practices, therefore, efforts have been made through Front Line Demonstrations to introduce new high yielding varieties of these crops to demonstrate improved production technologies to increase productivity of oilseed crops in the district. The objectives of front line demonstration on oilseed crops were to demonstrate the superior productivity potentials of various location/region specific technologies to practicing farmers and test their implement ability and viability and obtain feedback from the end users. Krishi Vigyan Kendra, Kathua conducted front line demonstration on oilseed crops viz., Gobhi Sarson and Toria during 2009-10 and 2010-11. In all 31 demonstrations were conducted on farmer's field in different blocks of Kathua district. The results of front line demonstrations on oilseeds showed that in Rabi 2009, the varieties of Toria RSPT-2 gave 74.07%, RSPT-1 gave 70.80% and T-9 gave 62.96% increase in yield over local variety, whereas in Rabi, 2010 the varieties of Toria RSPT-2 and T-9 gave 89.09% and 67.27% increase in yield over the local variety. In Rabi 2009 and 2010, the variety of Gobhi Sarson DGS-1 gave 78.85% and 86.66% increase in yield over local variety. By conducting front line demonstrations of proven technologies, yield potential and net income from oilseed cultivation can be enhanced to a great extent with increase in the income level of the stakeholders.

KEY WORDS:

Impact, Oilseed crops, Front line demonstration, Technology

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BACKGROUND AND OBJECTIVES

Oilseed occupies a significant place in India's agrarian economy, only next to food grains. India is endowed with a wide variety of agro-climatic zones and soil types that enable the cultivation of various kinds of oilseed crops. Oilseed are the second largest agricultural commodity in India sharing 15.07% of the gross cropped area and accounts for about 5% of GDP and 10% of the value of all the agricultural products. India accounts for about 12-13% of global oilseed area, 6-7% of global oilseed production and 10% of the global edible oil consumption. In, India area under oilseed is 21 million ha with production of 25.3 million tonnes resulting in productivity of about 1205 kg/ha (Choudhary, 2009). In the J&K state, the area,

production and productivity of oilseed crops is 0.063 million ha, 53.3 million tonnes and 846 kg/ha, respectively (Directorate of Economics and Statistics, 2010). These crops were grown under irrigated and un-irrigated conditions with low productivity. Many high yielding varieties have been released for cultivation, but their adoption by farmers is minimal. Majority of the area is under cereals; however, efforts are being made by the KVK to motivate the farmers to grow these crops by organizing awareness camp cum training programmes and field days. In, Kathua district area under oilseed crop is 11285 ha with production of 78995 quintals and productivity of about 7 quintals/ha. Since the productivity of oilseed crop in the district is low as farmers are growing these crops in marginal area and due to non-adoption of

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improved package of practices, therefore, efforts have been made through FLDs to introduce new high yielding varieties of these crops to demonstrate improved production technologies to increase productivity of oilseed crops in the district.

Front line demonstration (FLDs) is the new concept of field demonstration evolved by the Indian Council of Agricultural Research (ICAR) with the inception of technology mission on oilseed crops during mid eighties. The field demonstration conducted under the close supervision of scientists of National Agricultural Research System are called front line demonstration because the technologies are demonstrated for the first time by the scientists themselves before being fed into the main extension system of the State Department of Agriculture. There is a rapid growth under area and production of oilseed crops in Jammu Province particularly in Kathua district, but still ample scope for further improvement of production and productivity of oilseed crops for raising the income level of the farming community of the district. Poor yield under real farming conditions can be attributed towards use of traditional/old varieties of oilseed crops. With an objective to combat the causes of poor yield and lower economic returns, dissemination of recommended technology through front line demonstration was successfully attempted.

RESOURCES AND METHODS

Krishi Vigyan Kendra, Kathua conducted front line demonstration on oilseed crops *viz.*, Gobhi Sarson and Toria during 2009-10 and 2010-11. In all 31 demonstrations were conducted on farmer's field in different blocks of Kathua district. For conducting the front line demonstrations on oilseed crops, the farmers were identified/ selected through proper survey of the area in both seasons were followed as suggested by Choudhary (1999). Regular visits by the KVK scientists to demonstration fields were ensured and made to guide the farmers. The critical inputs were duly supplied to the farmers by the KVK. Field days and group meetings were also organized at the demonstration sites to provide the opportunities for other farmers to witness the benefits of

demonstrated technologies. Yield data were collected from control (Famer's practice) and demonstration plots and cost of cultivation, net income and cost benefit ratio were computed and analyzed.

OBSERVATIONS AND ANALYSIS

The Table 1 reveals that in *Rabi* 2009, the varieties of Toria RSPT-2 gave 74.07%, RSPT-1 gave 70.80% and T-9 gave 62.96% increase in yield over local variety. The average yield of RSPT-2, RSPT-1 and T-9 was 7.05 q/ha, 6.92 q/ha and 6.60 q/ha, respectively as compared with local check *i.e.* 4.05 q/ha and an additional income of Rs. 7200/ha, Rs 6800/ha and Rs 6120/ha in case of varieties RSPT-2, RSPT-1 and T-9 had incurred by the improved varieties with BC ratio of 6.81, 6.51 and 5.79, respectively. In, *Rabi* 2010, the varieties of Toria RSPT-2 and T-9 gave 89.09% and 67.27% increase in yield over the local variety. The average yield of RSPT-2 and T-9 was 12.0 q/ha and 10.2 q/ha respectively as compared with local check *i.e.* 6.0 q/ha and an additional income of Rs 8050/ha and Rs 6500/ha in case of varieties RSPT-2 and T-9 had incurred by these improved varieties with BC ratio of 7.31 and 5.90, respectively.

Table 1 also reveals that in *Rabi* 2009 and 2010, the variety of Gobhi Sarson DGS-1 gave 78.85% and 86.66% increase in yield over local variety. The average yield of DGS-1 was 6.26 q/ha and 7.00 q/ha as compared with local check and an additional income of Rs 6624/ha and Rs 7154/ha had incurred by the improved variety with BC ratio of 4.57 and 4.69, respectively in both seasons.

Conclusion:

By conducting front line demonstrations of proven technologies, yield potential of oilseed crops can be increased to a great extent. These will substantially increase the income as well as the livelihood of the farming community. There is a need to adopt multi-pronged strategy that involves enhancing oilseed production through technologies in Kathua. This should be brought to the access of farmers through transfer of technology centers like KVKs.

Table 1 : Average yield and cost particulars of demonstrations and local check plots of oilseed crops

Crop	Variety	Crop season	Farmer (Nos.)	Area (ha)	Average yield (q/ha)		Increase in yield (%)	Cost of cash input		Additional income (Rs./ha)	B:C ratio
					Demo	Local check		Demo	Local check		
Torja	RSPT-1	<i>Rabi</i> , 2009	2	1.0	6.92	4.05	70.80	1590/-	533/-	6888/-	6.51
	RSPT-2	<i>Rabi</i> , 2009	7	3.5	7.05	4.05	74.07	1590/-	533/-	7200/-	6.81
	T-9	<i>Rabi</i> , 2009	5	0.5	6.60	4.05	62.96	1590/-	533/-	6120/-	5.79
Torja	RSPT-2	<i>Rabi</i> , 2010	20	5.0	12.00	6.00	89.09	1700/-	600/-	8050/-	7.31
	T-9	<i>Rabi</i> , 2010	8	2.0	10.20	6.00	67.27	1700/-	600/-	6500/-	5.90
Gobhi Sarson	DGS-1	<i>Rabi</i> , 2009	11	3.0	6.26	3.50	78.85	2374/-	925/-	6624/-	4.57
	DGS-1	<i>Rabi</i> , 2010	23	5.0	7.00	3.75	86.66	2500/-	975/-	7154/-	4.69

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