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Front Line Demonstrations on Oilseeds and Pulse Crops in District Kurukshetra (Haryana)

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Abstract

The frontline demonstrations on moong and sunflower were conducted at farmers fields in district Kurukshetra (Haryana). The average yield of demonstrations on sunflower was 17.08 q/ha which was 9.98% higher than local check. The Pioneer 6460 registered 10.76 and 5.88% increase over hybrids Subeej NFSH-36 and Prosen-9, respectively. The average seed yield of summer moong was 7.81 q/ha under demonstrations which was 19.0% higher than the local check (6.6 q/ha). The net returns per hectare in demonstration plot were Rs 11,250.00 with B : C ratio 2.35. The application of stomp at 2.5 liter/hectare was found to be superior than one hoeing at 20 days after sowing and control. The gross returns, net returns and B : C ratio were the highest in plot where herbicide was applied which might be attributed to better weed control efficiency in the plot where stomp was applied.
Key words : Front line demonstration, Oilseeds, Pulse crops.

Rice-wheat cropping sequence is preferred by the farmers because of lesser risk and higher returns but the productivity of the system has become stagnant for the last two decades. Hence it is inevitable to provide value addition to the rice-wheat system to make it more remunerative and sustainable (1). Inclusion of pulse and oilseed crops seems to be the most lucrative option to fulfill the requirement and meet out the increasing demand of edible oil and pulses. The field experiences have exhibited that short duration summer moong crop variety SML-668 has got favorable response from the farmers as it fits well in the nitch available after the harvest of wheat crop in the exhaustive rice-wheat system. The frontline demonstrations on moong and sunflower were conducted at farmers fields in district Kurukshetra (Haryana). Thr introduction of improved technologies supplemented by adequate critical inputs and close monitoring resulted in fairly good crop yields and increase in area particularly under summer moong.

Methods

The demonstrations on sunflower were conducted on 20 hectare area involving 38 farmers. The data collected from non demonstration plots (20 hectare grown by 40 farmers) was used as local check for comparison of results single super phosphate and endosulfan were given as critical input for sunflower FLDs. Cultivation of summer moong after wheat in paddy-wheat rotation has proved a boon to farmers since the FLDs on summer moong were initiated. Thirty three demonstration were conducted on 8-hectare area during 2006-07. The seed of summer moong variety SML-668 was procured from PAU, Ludhiana and provided to the farmers. Rhizobium and phosphorus solublizing bacteria were also made available for seed treatment as critical inputs. The data registered from the demonstration plot was compared with that farmers). The demonstrations were supervized by regular visites of KVK experts and yield was recorded at harvest. Net returns and benefit cost ratio were compared in both the FLDs.

Results and Discussion

The demonstrations were conducted in the fields vacated by potato and sugarcane crops. The average yield of demonstrations was 17.08 q/ha (Table 1), which was 9.98% higher than local check. The benefit cost ratio of demonstrations was 2.17. The productivity of sunflower was better during the year under

Table 1. Yield economics of demonstrations and local check plots of oilseed and pulse crops in district Krukshetra under irrigated conditions.

Crops	Variety	Ferm-ers (No.)	Area (ha) Sown	Area (ha) Actual survival	Av yield (q/ha) Demon	Av yield (q/ha) Local check	Increase in yield (%)	Cost of additional inputs (Rs/ha) Demon	Cost of additional inputs (Rs/ha) Local check	Gross returns (Rs/ha) Demon	Net returns (Rs/ha) Demon	B : C ratio
Sunflower	Pioneer-6460 Subeej NFSH-36 Prosen-9	38	20	12.4	17.08	15.53	9.98	250	–	34337	18520	2.17
Moong	SML-668	33	8		7.81	6.56	19	500	–	19532	11250	2.35

report compared to the previous year, probably due to inclement weather conditions and higher incidence of pests during 2005-06.

The sunflower hybrids, which are generally cultivated in District Kurukshetra are Pioneer-6460, Subeej NFSH-36 and Prosen-9. Table 2 indicates that all the hybrids proved superior in seed yield to local checks. The Pioneer 6460 registered 10. 76 and 5.88% increase over hybrids Subeej NFSH-36 and Prosen-9, respectively. In Pioneer-6460, Subeej NFSH-36 and Prosen-9, the net returns were Rs 20,180, Rs 17,162, Rs 18,220 with B : C ratio 2.26, 2.10 and 2.14, respectively. The farmers received lucrative prices for the produce.

Cultivation of summer moong after wheat in paddy-wheat rotation has proved a boon to farmers since the FLDs on summer moong have been conducted. Thirty-three demonstrations were conducted on 8-hectare area during the year under report. The seed of summer moong variety SML-668 was procured from PAU, Ludhiana and provided to the farmers. Rhizobium and phosphorus solublizing bacteria were also made available for seed treatment. Though there were adverse weather conditions and heavy pest infestation, which adversely affected productivity of summer moong, yet the farmers are quite satisfied. After wheat harvesting an additional 65 days summer moong crop has given rich dividends, helped in saving water resources and enriching soil fertility. In 2007, a vigorous campaign was launched due to which the area under summer moong SML-668 tremendously surpassed 2000 hectares. The average seed yield of summer moong was 7.81 q/ha (Table 1) under demonstrations which was 19.0% higher than the local check (6.6 q/ha). The net returns per hectare in demonstration plot were Rs 11250.00 with B : C ratio 2.35.

The effect of cultivation of moong in two crop rotations was assessed (Table 2). It was observed that seed yield of summer moong was higher by 28.6% wheat it was grown in rice-potato system over rice-wheat system, possibly due to higher nutritional status and early vacation of potato fields which facilitated early sowing of moong crop. Seed yield in FLDs in rice-wheat system was higher by 22% than local check whereas the advantage was 16.7% in rice-potato system. The cost of additional input was Rs 500 hectare. Gross returns, net returns and B : C ratio were higher in rice-potato system as compared to rice-wheat system. Although yields were lower in rice-wheat system than rice-potato system but deteriorat-

Table 2. Effect of crop rotation on summer moong under fields in district Kurukshetra. Market rate of sunflower and moong SML-668 Rs 2,000 2,500 per quintal respectively.

Crop rotation	Variety	Farmers (No.)	Area (ha)	Av yield (q/ha) Demon	Av yield (q/ha) Local check	Increase in yield (%)	Cost of additional inputs Rs/ha Demon	Cost of additional inputs Rs/ha Local check	Gross returns (Rs/ha) Demon	Net returns (Rs/ha) Demon	B : C ratio
Wheat-summer moong-Paddy	SML-668	26	6	6.88	5.62	22.4	500	–	17200	8650	2.01
Rabi potato-sumer moong-paddy	do	7	2	8.75	7.50	16.7	500	–	21875	13950	2.76

Table 3. Impacts of weed management practices on grain yield of summer moong SML-668 in district Kurukshetra.

Treatment	Yield (q/ha)	Increase over control (y.)	Cost of additional input (Rs)	Gross returns (Rs)	Net returns (Rs)	BC : ratio
Stomp at 2.5 l/ha	9.25	51.6	875	23125	14575	2.70
One hoeing (20 DAS)	8.45	38.5	1250	21125	12200	2.37
Control	6.10	–	–	15250	7575	1.99

ing soil health, depleting water table and cultivation of summer paddy warrants the need for cultivation of summer moong in rice-wheat system.

The data on impact of weed management practices on seed yield of summer moong indicate that the application of stomp at 2.5 liter/hectare was found superior than one hoeing at 20 days after sowing and control (Table 3). The magnitude of increase in seed yield with the application of stomp and one hoeing was 51.6 and 38.5% over control, respectively. The cost of additional input was Rs 875 and Rs 1,250 per hectare in chemically treated and the plot provided with inter-culture operation. The gross returns, net returns and B : C ratio were the highest in plot where herbicide was applied which might be attributed to better weed control efficiency in the plot where stomp was applied. The bottlenecks developed in rice-wheat cropping system due to continuous over-exploitation of natural repository of the environment needs to be redressed through the diversification by the inclusion of oilseeds and pulse crops in the system. In Kurukshetra district of Haryana, adoption of sunflower hybrids and cultivation of summer moong cultivars SML-668 in the nitch available after the harvesting of wheat crop are the accessible and remunerative options for the farmers for better returns and preservation of natural resources.

Reference

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