Indian Journal of Extension Education
Vol.45, No. 3 & 4, 2009 (97-101)

Adoption Behavior of FLD and Non-FLD Farmers of Sunflower

M.Padmaiah[1], S.V.Ramana Rao[2] and G.V. Ramanjaneyulu[3]

ABSTRACT

Sunflower crop has a comparative advantage over other annual oilseed crops due to its wider adaptability. Its cultivation is chiefly confined to Karnataka, Andhra Pradesh and Maharashtra. The reasons for poor yields are manifold of which the important one is non-adoption of recommended technology. In order to demonstrate the potentials of the proven technologies of sunflower in the state, the All India Coordinated Research Project (AICRP) on sunflower at Latur organized the frontline demonstrations (FLD) on sunflower production technology and the present study was undertaken to assess their impact on adoption behaviour of FLD and non- FLD farmers to identify the constraints encountered and elicit suggestions as perceived by them. Despite, the fact that the FLD farmers have not resorted to 100 per cent of the components under the FLDs conducted in the region, they were still able to ealize additional income of Rs. 2094/ha. There were a host of constraints which include both biological and socio-economic standing in the way of increasing the productivity.

Sunflower crop has a comprative advantage over other annual oilseed crops due to its wider adaptablity. Its cultivation is chiefly confined to Karnataka, Andhra Pradesh and Maharashtra. In Maharashtra, it occupies a total area of 3.61 lakh ha, out of which 2.40 lakh ha is under rabi sunflower. The state average productivity of rabi sunflower was 548 kg/ha (Anonymous, 2006-07) which was less than the national average of 567 kg/ha. The reasons for poor yields are manifold of which the important one is non- adoption of recommended technology. In order to demonstrate the potentials of the proven technologies of sunflower in the state, the all India Coordinated Research Project (AICRP) on sunflower at Latur organized the frontline demonstrations (FLD) on sunflower production technology and the present study was undertaken to assess their impact on adoption behaviour of FLD and non- FLD farmers to identify the constraints encountered by them.

METHODOLOGY

The present study was carried out during 2003-04 in nine villages of Kankheda, Kolpa thanda, Bhori, Valsangi, Hodolthi, Savargaon, Walamwad, Gitta and Vadagaon spread across Latur, Bid and Osmanabad districts, where in FLDs were conducted during 1998-2002. A simple sizew of 50 (25 FLD and 25 non-FLD farmers) were selected randomly. The data were collected through a well structured interview schedule. The data were analysed using suitable statistical tools.

RESULTS AND DISCUSSION

It is evident from Table 1 that Jwalamukhi was the most popular hybrid among both FLD and non- FLD (56 and 60%) farmers followed by KBSH-1 and Kargil (20 and 16 % on FLD and 12 and 16% on non- FLD farms). Most of the farmers of both FLD and non- FLD were adopting majority of the components, tillage operations , intercultural operations and timely harvesting (Jadhav et al., 2004).

[1].Senior Scientist (Agril. Extension), [2] Senior Scientist (Agril. Economics) [3] Executive Director, Centre for Sustainable Agriculture.

With regard to the recommended dose the fertilizer, it was observed to the majority of the farmers (72% of FLD and 60% of Non- FLD farmers) reported to applying 75 kg N, 57.5 kg of P2 O5 with potassium in limited doses as against the recommendation of 60:95:60 kg/ha of N, P2O5 and K2O. The economic status of the farmers and the aberrations of the weather resulted in the gap of fertilizer input. The two methods of seed sowing viz., drilling and dibbling co- existed under both the categories. Seed drilling was practiced by 60 and 56 per cent of the FLD and non- FLD farmers while dibbling was resorted to by 40 and 44 per cent of the aforesaid farmers, respectively. The irrigation at the critical stages of the crop growth was practiced by 72 per cent of the non- FLD farmers. The plant protection for control of sucking pests was adopted by 48 and 32 per cent of the FLD and non- FLD farmers. Thinning the excess population was adopted by 40 and 28 per cent of FLD and non- FLD farmers, respectively.

It is thus evident that majority of the FLD farmers adopted recommended technology to a considerable extent. Further, the non- FLD farmers have also resorted to the components demarcated under the FLD's thus indicating the spill over the

Table 1. Impact of sunflower demonstrations on the adoption of recommended production technologies by FLD and non-FLD farmers

Technology demonstrated	Technology adopted	Adopted farmers			
		FLD		Non- FLD	
		Frequency	%	Frequency	%
Preparatory cultivation	Timely preparation	25	100	25	100
FYM 5 tonnes/ha	3.5 cartloads/ha	7	28	-	28
Hybrid demonstrated					
KBSH-1	KBSH- 1	5	20	3	12
	Jwalamukhi	14	56	15	60
	MAHYCO- 8	2	8	3	12
	Kargil	4	16	4	16
Seed rate (5kg/ha)	5kg/ha	25	100	25	100
Seed treatment	Treated seed used	25	100	25	100
Spacing (60x 30 cm) (45x 30cm)	60x 30 cm	16	54	10	40
	Flat bed	9	36	15	60
Method of sowing	Drilling	15	60	14	56
	Dibbling	10	40	11	44
	75N: 57.5 P2 O5	18	72	15	60
	51 N: 57.5 P2 O5	1	4	1	4
	66.25N : 37.5 P2 O5	1	4	1	4
	57.5N: 40 P2 O5	3	12	3	12
	86.5 N: 28.75 P2 O5	1	4	2	8
	72.5N :22.5 P2 O5	1	4	2	8
Thinning	Adopted	10	40	7	28

Interculture :2-3 hoeings	2-3 hoeings	25	100	25	100
Need based plant protection	Insecticides/ Pesticides used	12	48	8	32
Protective irrigation at critical stages of crop growth (2-4)	Applied at budding, flowering and seed filling: (2-4)	18	72	15	60
Timely harvest	Harvested at the right time	25	100	25	100

FLD's facilitating for the lateral spread of the technology (s) advocated for enhanced productivity of sunflower.

The summary of the economics of sunflower cultivation on the FLD and non- FLD farms are presented in Table 2. It is seen from the table that the FLD farmers who have resorted to greater adoption levels in the sunflower production technology vis-à-vis non- FLD farmers have realized an yield increase of 40 per cent. The yield levels on FLD and non- FLD farmers was 8.64 and 6.19 q/ha respectively. The incremental benefit cost ratio was 1.26. It is evident that the FLD farmers by incurring additional cost to the extent of 23.14 per cent over the non- FLD farmers were able to realize additional yield/returns to the extent of 40 per cent which amply indicate the superiority of the technologies advocated through FLDs in the region.

This clearly indicates the enhanced profitability of sunflower farmers who have resorted to the

Table 2. The productive potential and economic of the FLD and non-FLD farmers of sunflower

Particulars	FLD	Non-FLD
Yield (q/ha)	8.64	6.19
Operational cost of cultivation(Rs./ha)	8796	7143
Gross returns (Rs./ha)	13185	9438
Net returns (Rs./ha)	4389	2295
Incremental cost (Rs./ha)	-	1653
Incremental returns (Rs./ha)	2094	-
Incremental benefit cost ratio (Rs./ha)	1.25	-

Table 3. Distribution of FLD and non-FLD farmers based on the constraints confronted in sunflower production

Constraints	FLD farmers			Non- FLD farmers		
	F*	%	Rank	F*	%	Rank
Necrosis disease	23	92	I	24	96	I
Market fluctuation	21	48	III	20	80	IV
Lack of quality seed	20	80	IV	21	84	III
High speed cost	21	84	IV	21	84	III

Less seed filling (center)	18	72	V	16	64	IV
Lack of institutional credit facility	16	64	VII	18	72	V
Downy mildew disease	6	24	VIII	9	36	VII
Low rainfall	22	88	II	20	80	IV
Lack of market information	17	68	VI	18	72	V
Lack of fertilizers and pesticides locally	22	88	II	22	88	II

F: Frequency; *: Multiple response.

Table 4. Distribution of FLD and non- FLD farmers on their suggestions offered

Suggestions	FLD		Non- FLD	
	Frequency*	%	Frequency*	%
Remunerative price	28	100	25	100
Efficient market systems	20	80	18	72
Incentives to farmers	16	64	12	48
Short duration hybrids	8	72	4	12
Timely seed supply locally	24	96	25	100
Supply of seed at low rate	22	88	18	72
Exposure visits to farmers	16	64	15	60
Sunflower crop insurance	20	80	18	72
Supply of bio- control agents locally	12	48	14	56

*Multiple responses

production technology as advocated under the FLD demonstrations. The nature and the magnitude of constraints prevailing in sunflower cultivation on the FLD and non- FLD farms are presented in Table 3.

A perusal of the Table reveals that necrosis was the most important constraint which was accorded the highest rank by the FLD and non-FLD farmers. On FLD farms, the ranks assigned in descending order of importance were low rainfall and lack of fertilizer and pesticides available locally (Rank II), high cost of seed fluctuations in the market price (Rank III), lack of quality seed (Rank IV), lower seed filling (Rank V), lack of market information (Rank VI) lack of institutional credit facility (Rank VII) and downy mildew (Rank VIII).

For the non-FLD farmers, the constraints perceived in descending order of importance were lack of fertilizer and pesticide available locally (Rank II), high cost of seed and lack of quality seed (Rank III), low rainfall and market price fluctuations (Rank IV), lack of institutional credit facility and lack of market information (Rank V), low seed filling (Rank VI) and downy mildew (Rank VIII).

It is thus seen that the aforesaid constraints inhibit the sunflower productivity. This draw the attention of the R&D agencies for minimizing the constraints so that the productivity can be enhanced and the farmers can reap higher profitability from sunflower farming. The opinion survey was conducted to solicit the feed back and suggestions to improve the productivity/production. It is seen from the Table 4 that there was a strong commonality among the FLD and non FLD farmers on several of the suggestions offered in improving the sunflower farming. The strong felt need for a remunerative support price was suggested by 100 per cent of FLD and non- FLD farmers. The timely supply of quality seed to be made locally available was another suggestion made by 90 and 100 per cent of FLD and non- FLD farmers. There was a suggestion for providing the seed at a lower price (88 per cent of FLD

farmers and 72 percent of non-FLD farmers).

The risk mitigation through scientific crop insurance was a suggestion made by 80 per cent of FLD farmers and 72 per cent of non-FLD farmers. The exposure visits of farmers to research farms/KVKs/Field days/Kisan melas for having a overall comprehension on the latest developments in sunflower production was suggested by 64 and 60 per cent of FLD and non-FLD farmers, respectively. The supply of bio- control agents at the village level was opined by 48 per cent of FLD farmers and 56 per cent of non- FLD farmers .

CONCLUSION

It can be concluded that the FLDs conducted in the study region has made an impact on both FLD and non- FLD farmers. This clearly indicates the positive spill over of the technology in the study area. However, there still exists gap between the technology (s) demonstrated as against the farmer's practice (both FLD and non- FLD farmers) due to socio-economic and other biological related factor viz., erratic rainfall, pests incidence etc. Despite the fact that the FLD farmers have not resorted to 100 per cent of the components advocated under the FLDs conducted in the region, they were still able to realize additional yield to the extent of 40 per cent over the non- FLD farmers thus gaining an additional income of Rs. 2094/ha. There were a host of constraints which included both biological and socio-economic standing in the way of increasing the productivity. It is thus imperative that the concerned R&D agencies involved in oilseeds should focus on addressing to the constraints which can play a major role in increasing the sunflower productivity and profitability as well.

ACKNOWLEDGEMENT

The authors gratefully acknowledge the Project Director- DOR, Hyderabad for the support and to the staff of AICRP Center-Latur, Maharashtra for rendering the logistic support for the conduct of FLDs and providing assistance during the data collection.

REFERENCES

Anonymos (2006-07). Directorate of Economics and Statistics Department of Agriculture and Cooperation, Govt. of India, New Delhi .

Jadhav ,D.L., Kawale, A.B., Dudhate, D.G., Karpse, P.S. and Prajapati, M.R. (2004). Extent of adoption of improved Agricultural Technology by the farmers of the Mehsena district of Gujrat state. Journal of Soils and Crops, 14(1) : 105-107.

Ramanjaneyulu, G.V. and Padmaiah, M. (2003). Technology adoption and its impact. In : Hegde, D.M., Sujatha, M. and Singh, B.N. (Eds.). Castor in India. Directorate of Oilseed Research, Hyderabad.