Journal of Crop and Weed, 5(1):115-119 (2009)

Targetting extension intervention for promotion of sunflower productivity in coast al saline zone of West Bengal

A. DAS[1], D. BASU[2] AND R. GOSWAMI[3]

[1]*Yashwantrao Chavan Maharashtra Open University, Nashik, Maharashtra.*
[2] *Department of Agricultural Extension,*
Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, 741252, Nadia, West Bengal
[3] *Ramakrishna Vivekananda University, R. K. Mission Ashrama, Narendrapur, West Bengal*

ABSTRACT

A study was undertaken in South 24 Parganas of West Bengal to find out the problems faced by three groups of sunflower growers of costal saline terrain, namely Resource Rich (RR), Resource Moderate (RM) and Resource Poor (RP). It was observed that identified problems differed across the groups. Rank correlation coefficient was significant between RM and RP farmers in respect of input related, technology transfer related and marketing related problems and the same was significant between RR and RM farmers with the problems related to nature. In solving the problems, significant association was observed between RM and RP farmers with suggestions related to technology transfer and infrastructural development and policy matter. There was significant association both in between RR -RM and RM - RP farmers with suggestions regarding policy matter which implies for targeting of extension activities for production of sunflower in particular in this weakly integrated and vulnerable are duly considering the resource based of the farmers as potential factor.

There is a great scope to increase the production and productivity of sunflower in West Bengal particularly in South 24-Parganas district which shares more than 50 per cent both in area and production under coastal saline zone (Bureau of Applied Economics and Statistics 2007), where growing second crop is hardly possible due to water scarcity and salinity of soil in winter / summer season. Keeping such facts in view, special attention should be focused on various problems of farmers engaged in sunflower cultivation for enhancing production and productivity. With this view in mind, the present study was undertaken in order to find out the problems faced by different groups of farmers regarding sunflower cultivation and to find out solutions suggested by the farmers to overcome these problems.

MATERIALS AND METHODS

The present study was purposively conducted in the district of South 24 Parganas of West Bengal. Out of 30 blocks of this district Kulpi and Patharpratima blocks were purposively selected for the study which ranks first and second position respectively in sunflower area and production among the blocks of South 24-Parganas district. Ten villages (five villages from each block) were selected randomly and finally respondents were selected following sampling with probability proportional to size. The sample farmers were classified into three categories- Resource Rich (RR), Resource Moderate (RM) and Resource Poor (RP) according to farmers' own perception through participatory approach and finally farmers were grouped as 42 resource rich , 70 resource moderate and 40 resource poor farmers. Thus a total of 152 farmers were selected for the study. Primary data were collected during the period from December 2007 to April, 2008 from the respondents. Spearman's rank coefficient of correlation was used to find out the association among the various groups of farmers with problems faced and suggestions given by them.

Email:drdbasu@gmail.com

RESULTS AND DISCUSSION

The three categories of farmers, RR, RM and RP, identified 31 problems which were faced by them. Theses problems were classified in to four categories - Input related problems, Technology transfer related problems, Problems related to nature and Marketing related problems according to the suggestions of agricultural extension experts. These problems then were ranked according to the priority as perceived by the farmers.

Input related problems

Regarding input related problems both RR and RM farmers emphasized on the problem of 'irregular electric supply' where as RP farmer emphasized on 'lack of irrigation water'. The 'non-availability of labour' problem was much serious to RR farmers than to RM and RP farmers in the study area. The rank correlation coefficient indicated that there was significant association between RM and RP farmers with input related problems (Table -1).

Technology transfer related problems

Among the technology transfer related problems, the RR farmers' priority was 'inadequate farmers' training facility' and they ranked it in the first position while the RM and RP farmers ranked it in the fourth position. RM farmers ranked 'lack of knowledge about insect pest & disease management and fertilizer management' as first and second

position respectively and RP farmers ranked 'lack of knowledge about fertilizer management' and 'insect pest and disease management' as first and second position respectively. Because they had been facing serious yield loss for such problems. The rank correlation coefficient also indicated that there was significant association between RM and RP farmers with technology transfer related problems (Table -2). This was possibly due to the fact that RR farmers set their priority to training, demonstration while RM and RP farmers emphasized on insect pest & diseases and fertilizer management as RM and RP farmers were very much facing yield loss for such problems. Attack of pests was one of the major factors contributing towards the decline of sunflower yield was also noted by Badar *et al*. (2002) and Ulemale *et al*. (2005).

Problems related to nature

Regarding the problems related to nature all categories of farmers emphasized on 'salinity of underground water for irrigation' and they ranked it in the 1st position and in this respect there was significant association between RR and RM farmers (Table- 3). This was possibly due to the fact that both RR and RM farmers were capable to manipulate some problems *i.e.* 'temperature increasing during flowering', hailstorm in the *pre-kharif* season' by early sowing of sunflower. If sunflower is sown in the month of January the crop can be harvested by end of the March or first week of April which helped the farmers to avoid high temperature, above 35^0 during flowering and maturity of sunflower for which cultivation of early or medium duration paddy varieties in Kharif season is practiced. The RR and RM farmers were mostly incapable to follow such cropping pattern. Low productivity of sunflower yield was recorded by Schnell *et al.* (2007) due these factors.

Problems related to marketing

In respect of marketing related problems, both RM and RP farmers emphasized on 'no assurance of market' where as RR farmers emphasized on the problem of 'lack of storage facility'. Significant association between RM and RP farmers with market related problems was observed as depicted in the Table- 4. This was possibly due to the fact that both RM and RP farmers faced problems like 'no assurance of market' and 'low price due to mediator' than RR farmers in marketing their products. Low price as one of the major constraints in sunflower production was also noted by Ali Shah *et al*. (2005) and Schnell *et al.* (2007).

Table 1: Input related problems faced by the farmers

Problems	RRF(N = 42)		RMF(N =70)		RPF(N = 40)	
	%	Rank	%	Rank	%	Rank
Lack of irrigation water	26.19	VII	92.86	II	100.00	I
Non-availability of quality seeds	42.86	VI	81.43	IV	75.00	IV
High cost of seed, fertilizer and pesticide	59.52	V	85.71	III	95.00	II
Non-availability of labour	95.24	II	41.43	VIII	2.50	X
Irregular electric supply	100.00	I	100.00	I	87.50	III
Lack of animal resources	11.90	IX	42.86	VII	52.50	V
Insufficient facility of Bank loan	71.43	IV	68.57	V	25.00	VIII
High rate of interest	23.81	VIII	52.86	VI	50.00	VI
Delay in getting loan	9.52	X	4.29	X	10.00	IX
High labour charges	88.10	III	28.57	IX	30.00	VII
Rank correlation coefficient (N = 10)	**RRF & RMF**		**RMF & RPF**		**RRF & RPF**	
	0.309		**0.830 ****		**0.030**	

Significant at 1 % level of significance; RRF=Resource Rich Farmer, RMF=Resource Moderate Farmer; RRP=Resource Poor Farmer

Table 2: Technology transfer related problems

Problems	RRF(N = 42)		RMF(N =70)		RPF(N = 40)	
	%.	Rank	%	Rank	%	Rank
Inadequate farmers' training facility	97.62	I	90.00	IV	50.00	IV
Lack of knowledge about soil management	88.10	IV	92.86	III	37.50	V
Lack of knowledge about characteristics of quality seed	21.43	VI	57.14	V	85.00	III
Lack of knowledge about Fertilizer mgt.	92.86	III	97.14	II	100.00	I
Lack of knowledge about insect-pest and disease mgt.	95.40	II	100.00	I	97.50	II
Lack of knowledge about water management.	7.14	VII	38.57	VI	15.00	VI
Lack of knowledge about post harvest tech.	50.00	V	8.57	VII	7.5	VII
Rank correlation coefficient (N= 7)	**RRF & RMF**		**RMF & RPF**		**RRF & RPF**	
	0.679		**0.821 ***		**0.500**	

* Significant at 5 % level of significance

Table 3: Problems related to nature faced by the farmers

Problems	RRF(N = 42)		RMF(N =70)		RPF(N = 40)	
	%.	Rank	%	Rank	%	Rank
Salinity of underground water for irrigation	100.00	I	98.57	I	100.00	I
Irregular rainfall	76.19	III	95.71	II	72.50	IV
Hailstorm in the Pre- kharif season	66.67	IV	81.43	IV	92.50	II
Very low level of underground sweet water	95.24	II	87.14	III	25.00	V
Increase in temperature during flowering	16.67	VI	48.57	V	77.50	III
Excessive rain during winter occasionally	47.62	V	31.43	VI	22.50	VI
Rank correlation coefficient (N= 6)	**RRF & RMF**		**RMF & RPF**		**RRF & RPF**	
	0.886 *		**0.543**		**0.314**	

* Significant at 5 % level of significance

Table 4: Marketing related problems faced by the farmers

Problems	RRF(N = 42)		RMF(N =70)		RPF(N = 40)	
	%.	Rank	%	Rank	%	Rank
No assurance of market	71.43	II	87.14	I	100.00	I
Lack of market information	59.52	IV	68.57	III	17.50	VII
High rate of transport	9.52	VIII	8.57	VII	37.50	VI
Lack of storage facility	76.19	I	41.43	VI	57.50	V
Insufficient oil crushing machine	50.00	V	48.57	V	67.50	IV
Lack of co-operative for group marketing	40.48	VI	50.00	IV	70.00	III
Poor transport facility	19.05	VII	2.86	VIII	2.5	VIII
Low price due to mediator	64.29	III	85.71	II	85.00	II
Rank correlation coefficient (N = 8)	**RRF & RMF**		**RMF & RPF**		**RRF & RPF**	
	0.595		**0.762 ***		**0.500**	

* Significant at 5 % level of significance

Suggestions of the farmers to solve the problems

Eighteen possible suggestions were collected from all categories of farmers in order to solve the problems faced by them in increasing production and productivity of sunflower in the study area. These suggestions as perceived by the farmers were classified broadly into two categories viz. technology transfer and infrastructure development and policy matter.

Table 5: Suggestions related to technology transfer and infrastructure development.

Suggestion	RRF		RMF		RPF	
	%.	Rank	%	Rank	%	Rank
Providing modern production technology through training, demonstration etc.	95.40	I	58.57	IV	52.50	IV
Farmers' motivation in adopting group marketing	57.14	IV	67.14	III	80.00	II
Formation of self-help groups for cultivation and marketing	50.00	V	67.14	III	80.00	II
Opening information centre at village level	38.10	VI	17.14	VII	17.50	VII
Arrangement of farmers' education tour	64.29	III	78.57	II	50.00	V
Establishment of more number of oil crushing machine	64.29	III	57.14	V	67.50	III
Supplying irrigation water in winter and pre-kharif season	57.14	IV	98.57	I	100.0 0	I
Providing storage facility to the growers	80.95	II	54.29	VI	45.00	VI
Rank correlation coefficient (N = 8)	**RRF & RMF 0.464**		**RMF & RPF 0.821 ***		**RRF & RPF 0.381**	

* Significant at 5 % level of significance

Suggestions for technology transfer and infrastructure development

In respect of suggestions made on technology transfer and infrastructure development issues, the RR farmers emphasized on 'providing modern production technology through training, demonstration etc.' whereas both RM and RP farmers put their preference on 'supplying irrigation water in winter and pre-kharif season'. Due to poor economic condition the RP farmers are forced to sale their produce after harvesting the crop. But the RR and RM farmers are generally economically sound than RP farmers and they want to store their produce for some time after harvesting seeds in order to have more return if storage facility is provided. RM and RP farmers also differed in their opinion in the case of farmers' education tour. The RP farmers have to work hard to maintain their livelihood and mostly they hesitate to go outside with well to do farmers and also they have to engage themselves most of the time with farming otherwise their family will be suffered and so they were not in a position to make time to go outside with the other farmers. However, RP farmers suggested to form SHGs and to motivate farmers for group marketing as this will help them to sale their products collectively in a co-operative manner to have good price for their products. Rank correlation coefficient indicated significant association between RM and RP farmers with suggestions related to technology transfer and infrastructure development (Table- 5). This was possibly due to the fact that both RM and RP farmers had narrow difference in their thinking as per their resource level and managerial capabilities combating the problems.

Table 6 Suggestions of the farmers related to policy matter.

Suggestion	RRF		RMF		RPF	
	%.	Rank	%	Rank	%	Rank
Supplying 24 hrs. electricity at minimum price	100.00	I	100.00	I	75.00	IV
Supplying fertilizers and pesticides at reasonable rate	78.57	V	91.43	III	95.00	II
Supplying quality seeds at right time	95.24	II	92.86	II	87.50	III
Supplying quality seeds at reasonable price	28.57	VII	87.14	IV	100.0 0	I
Making available bank loan at reasonable rate	90.48	III	85.71	V	67.50	V
Introducing easy method for bank loan.	14.29	X	78.57	VI	47.50	VII
Providing minimum support price to procure the seeds at Govt. level	26.19	VIII	67.14	VII	45.00	VIII
Establishing cold storage at block level by Govt.	50.00	VI	67.14	VII	62.50	VI
Providing drip irrigation facility with subsidy	83.33	IV	28.57	VIII	27.50	IX
Implementation of crop insurance policy to protect the crops	16.67	IX	4.29	X	15.00	X
Rank correlation coefficient (N = 10)	**RRF & RMF 0.684 ***		**RMF & RPF 0.855 ****		**RRF & RPF 0.430**	

* Significant at 5 % level of significance ** Significant at 1 % level of significance

Suggestions related to policy matter

Regarding suggestions in relation to policy matter, both RR and RM farmers placed their priority on 'supplying 24 hour electricity at a minimum price' while RP farmers emphasized on 'supplying quality seeds at reasonable price' as both RR and RM farmers were able to purchase their seeds from various private agencies and companies even at high price. However, all categories of farmers were not hopeful regarding governmental assistance in implementing crop insurance policy in order to protect their crop due to harassment and long procedure for claiming money against natural calamities. Significant association was observed between RR-RM and RM - RP farmers with suggestions regarding policy matter issues.

In future, differential strategy should be formulated for promotion of sunflower cultivation in this area considering their resources, problems and suggestions. In order to undertake extension intervention and developmental strategies for increasing the production and productivity of sunflower the three categories of farmers should be addressed separately according to their problems, resources and preferences. However, this finding has far reaching implications beyond the study area.

REFERENCES

Ali Shah, N., Shah, H. and Akmal, N. 2005. Sunflower area and production variability in Pakistan: opportunities and constraints. HELIA. **28**. 165-178. Retrived on 11.4.2008 from http://www.doiserbia.nbs.bg.ac.yu

Badar, H., Javed, M.S., Ali, A. and Batool, Z. 2002. Production and marketing Constraints Limiting Sunflower Production in Punjab (Pakistan). Int. J. Agric. and Biol., **4**: 267-71

Bureau of Applied Economics and Satistics 2007. *Economic review, Government of West Bengal, India*

Schnell, J., Mc Glip, L. and Hogan, A. 2007. GRDC/AOF-Survey of Sunflower Growers, May, 2007. Retrieved on 17. 3.08 from http://www.australianoilseeds.com/_data/ assets/pdf_file.

Ulemale, R.B., Lande, S.S., Mahajan, A.M. and Raut, R.S. 2005. Optimization of sunflower production under resource constraints. Retrieved on 27.4. 08 http://www.fao.org/agris/scharch/disply