PROBLEMS AND STRATEGY FOR MUSTARD PRODUCTION IN BHARATPUR DISTRICT OF RAJASTHAN

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ABSTRACT

The Bharatpur is the major mustard producing district of Rajasthan. The productivity of the mustard crop in the district has been low and unstable over a period of time due to a number of production problems. In this study, the efforts have been done to identify the major mustard production problems through Participatory Rural Appraisal (PRA) techniques in eight villages of the Bharatpur district. The eight major problems, viz., Sclerotinia rot, Orobanche parasite, Alternaria blight disease, non-availability of quality seeds, painted bug pest, aphid pest, white rust disease and termite pest were identified and their management require the on-farm participatory technology generation for the emerging serious production problems and effective extension strategies for dissemination of the proven technology to enhance the productivity of mustard in the district.

Key words : Mustard, Production Problems, Matrix Ranking, Bharatpur.

INTRODUCTION

Bharatpur is the eastern most district of Rajasthan and along with Alwar, Sawai Madhopur, Karoli and Dholpur districts constitutes the Bharatpur agricultural division. This division is very important for the mustard crop as it contributes about 28 % and 12 % area of the state and the country, respectively. At the same time, the Bharatpur district has been playing a pivotal role in the oilseed economy of the division as well as that of the state of Rajasthan with about 27 % and 8% acreage, respectively. The district of Bharatpur has dry climate with hot summer, cold winter and short monsoon season with an average annual rainfall of 645 mm. Being a cash crop under the fallow-mustard cropping system, mustard has become the bread earner for majority of the farmers of the district. However, the productivity of the mustard crop in the district has been low (less than one tone/ha) and unstable over a period of time due to a number of production problems of biotic and abiotic origin. This study was undertaken to identify the major mustard production problems with the farmers' participation, in order to provide farmers' feedback to the research and extension systems for taking corrective measures and enhance the mustard productivity in the Bharatpur district.

METHODOLOGY

The present investigation was carried out in eight villages of four tehsils of Bharatpur district of Rajasthan during 2002 and 2003 before the start of the rabi season. The methodology to identify the problems was focused group discussion with the key informants of the all the eight selected villages and matrix ranking for prioritization of the problems. Four villages namely, Barakhurd, Gadhi Jalim Singh, Kot and Pali were randomly selected during 2002, while Bandh Baretha, Vijaypura, Ekta and Sukhawali during 2003. Farmers from these villages, through focused group discussion, identified eight common problems related to mustard production system. However, as per the intensity of the problems in their villages, they ranked the problems differently through matrix ranking. Scores were assigned to these problems as per the rank. The first ranked problem was assigned the score of 8, while the eighth ranked problem was given the score of 1. Total scores of the each problem for all the eight villages were then summated and ranks were worked out for each problem in the district.

RESULTS AND DISCUSSION

The study revealed that the Sclerotinia rot, a newly emerging disease of mustard, was the top ranked problem with the maximum score of 56 followed by the orobanche root parasite with the score of 43 in the district and were causing major threat to the stability of the mustard production (Table 1). The problem of Alternaria blight disease was given the third rank with the score of 40, while the problem of non-availability of good quality

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seeds of mustard has been on the fourth place with the score of 38. Further, the problems of painted bug pest, aphid pest, white rust disease and the termite pest affecting the stability of mustard production have been given the score of 33, 28, 26 and 24 for the fifth, sixth, seventh and the eighth rank, respectively.

Table 1. Mustard production problems in Bharatpur district of Rajasthan

Tehsils Villages	Bayana		Nadbai		Bharatpur			Weir	Total	Rank
	Kot	Bandh Baretha	Vijaypura	Pali	Ekta	Sukhawali	Gadhi Jalim Singh	Barakhurd	Score	
Problems										
Sclerotinia rot	III (6)	IV (5)	II (7)	II (7)	I (8)	II (7)	I (8)	I (8)	56	I
Orobanche parasite	VIII (1)	VIII (1)	I (8)	I (8)	II (7)	I (8)	II (7)	VI (3)	43	II
Alternaria blight disease	VII (2)	VI (3)	IV (5)	III (6)	IV (5)	III (6)	III (6)	II (7)	40	III
Non-availability of quality seeds	V (4)	II (7)	III (6)	VI (3)	V (4)	VI (3)	IV (5)	III (6)	38	IV
Painted bug pest	II (7)	III (6)	VI (3)	VII (2)	III (6)	VII (2)	VII (2)	IV (5)	33	V
Aphid pest	IV (5)	V (4)	VII (2)	V (4)	VIII (1)	V (4)	V (4)	V (4)	28	VI
White rust disease	VI (3)	VII (2)	V (4)	IV (5)	VII (2)	IV (5)	VI (3)	VII (2)	26	VII
Termite pest	I (8)	I (8)	VIII (1)	VIII (1)	VI (3)	VIII (1)	VIII (1)	VIII (1)	24	VIII

Note : The figure in parenthesis indicates the scores given to each problem as per the ranking

It can be seen that the seven out of eight major problems of mustard production system in the Bharatpur district, were related with the lack of crop resistance for the biotic stresses like diseases and pests. Despite having the technology for their management with the extension system, lack of awareness among the farmers about the diseases and insect-pests like painted bug pest, Alternaria blight disease, aphid pest, white rust disease and the termite pest and also their tendency to overlook the early symptoms of these diseases and pests in the crop make it very difficult to control them at an advanced stage, which have affected the productivity of the crop in the district. Further, it is important to note that the average size of the land holdings in the district is 1.88 ha and the majority of farmers being small and marginal (about 70%) can hardly afford to purchase costly plant protection chemicals and equipments for application in the production process.

It has been found that the continuous practice of the fallow-mustard cropping system in the district in majority of the areas have led to the emergence of two very serious production problems namely, Sclerotinia rot and the Orobanche root parasite in the recent past, as the continuous cropping has built up their population enormously. The research system has yet to come out with the effective technology for the management of these problems, other than the change in the present mustard based cropping system in the district. The district of Bharatpur has dry climate with hot summer, cold winter, short monsoon season with an average annual rainfall of 645 mm and the problems of salinity and alkalinity of soil and water. Under this condition, the farmers of the district have limited option for the change in the cropping pattern replacing mustard, as the crop has low water requirement and can also tolerate the salinity and alkalinity of soil and water better than the other crops. In such a situation, it is imperative for the research system to speed up its programme for technology generation for these two serious problems of the mustard production system.

By and large, the availability of good quality mustard seeds have increased but still the farmers have to rely most often on the private seed agencies or other fellow farmers for the purpose. To counter the problem of non-availability of good quality seeds in the production process more efforts are needed on the part of various seed agencies particularly in the government sector and also to initiate the efforts towards developing Seed Village by ICAR institutes, State Agricultural Universities, NGOs and State Department of Agriculture, etc.

CONCLUSION

For effective management of the major mustard production problems identified in the country's most important district, it is important for the extension system to establish strong linkages with the research system and carry forward the dissemination programme more vigorously for those problems for which the technologies are available. On the other hand, the research system should adopt the on-farm technology generation methodology for the two serious problems namely,

Sclerotinia stem rot and Orobanche root parasite affecting the productivity of mustard in Bharatpur district of Rajasthan, in order to reduce the time gap in the generation and adoption of the technology.

REFERENCES

1. **Chambers R. (1991).** Shortcut & participatory methods for gaining social information for projects. In: Putting Ppeople First (M.Cernea). Oxford University Press, New York.
2. **Chambers, R, (1988).** 'Direct Matrix Ranking in Kenya and West Bengal', PRA Notes. 1, IIED, London, Pp 13-18.
3. **Chattopadhyay, C. and Kolte, S.J. (2004).** Diseases of Rapeseed-Mustard distribution, Biology, Epidemiology and Management of some Major Disease. In; Rapeseed-Mustard Research in India (Edited by Arvind Kumar and N.B. Singh). National Research Centre on Rapeseed-Mustard, Bharatpur, Pp 175-176
4. **Dasgupta D. and Acharjee S.K. (2002).** Participatory Rural Appraisal (PRA) and Participatory Learning Action (PLA): Techniques and Methodology. Reading Material for winter school on "Recent Advances in Participatory Extension Methodology in Agriculture and Rural Development" from December 2-31, 2001.
5. **Jha, S.K. and Sharma, A.K.(2003).** Problem identification in rapeseed-mustard. Sarson News. NRCRM. Pp7
6. **Ray G. L.(1996).** Extension Communication and Management. Naya Prokash, Calcutta.
7. **Sandhu A.S. 1994.** Extension programme planning, Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
8. **Vital Agriculture Statistics. (1996-97).** Directorate of Agriculture, Rajasthan, Jaipur.

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