

FARMER'S KNOWLEDGE AND CORRELATES OF OILSEED PRODUCTION TECHNOLOGY

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ABSTRACT

The strategy under Technology Mission on Oilseeds (TMO) The increased production of the oilseeds resulting in "Yellow Revolution" in the country. The main objective was to demonstrate newly released crop production and protection technologies and its management practices in the farmer's field under different agro-climatic regions and farming situations with close supervision of scientist. However, this study regarding knowledge and correlation between various characteristics of oilseed growers found that big land holding farmers had high knowledge as compared to small and medium category of farmers. Knowledge of farmers about improved varieties, seed rate, spacing, fertilizer application, intercultural operations and harvesting was found to be sufficient but was poor in case of seed treatment and plant protection measures. Education, annual income, social participation, extension contact, extension participation, experience in oilseed growing and scientific orientation were found to be positively and significantly related with knowledge. There is need to step up extension efforts to motivate oilseed growers to adopt all the recommended practices.

INTRODUCTION

Oilseeds form the second largest agricultural commodity in India after cereals sharing 14 % of gross cropped area and accounting for nearly 3 % of the gross national product and 10% of value of all agricultural products. The country also occupies a distinct position in terms of diversity in annual oilseed crops. The prevailing agro-ecological conditions have been favourable for growing several important annual oilseed, including edible (namely Groundnut, Rapeseed-Mustard, Soybean, Sunflower, Safflower, Sesame and Niger) and non-edible oilseeds (namely Castor and Linseed).

The compound growth rates registered for nine oilseeds during 1951 to 2009 in respect of area, production and productivity being 1.59, 3.03 and 1.42 percent per annum, respectively. India, as the world's third largest consumer of vegetable oils after China and EU, has seen per capita consumption increase from about 4 kg per annum to 14 kg per annum in the past four decades, though much lower than most of the developed countries. The country's demand for vegetable oils is expected to increase from current

level of 16 million tonnes to 18.3 and 21.8 million tonnes by 2015 and 2020 respectively (Damodaran and Hegde, 2010). India rank first in castor, safflower and sesame production and the second largest producer of groundnut and third in rapeseed and mustard production. It ranks fourth, fifth and tenth in linseed, soya bean and sunflower, respectively. The sizeable increase in production of oilseeds over the years was possible through extension efforts of ICAR, SAU and State Department of Agriculture.

In Konkan Region of Maharashtra, efforts are being put in to boost the oilseed production and productivity. With this in mind a study was conducted with the following two objectives.

1. To determine the knowledge level of oilseed growers with respect to selected package of practices
2. To determine the relationship between background variables of respondents with their knowledge level about oilseed production technology

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RESEARCH METHODOLOGY

The present study was conducted in 25 villages from Konkan region of Maharashtra, where Krishi Vigyan Kendra of respective district has already done the work of technology transfer in oilseed crop production. For selection of respondents for this study, a total list of FLD farmers in the year 2008-09 was collected from four KVKs. By adopting systematic sampling design 250 respondents who had actually undertaken the demonstration with control trial were selected for the study. The data was collected one year after FLD programme through personal interview technique with the help of interview schedule developed for the study. Knowledge level of the farmers was studied by a teacher made knowledge test i.e. known and not known basis. Based on total scores obtained the knowledge index was worked out by using formula.

$$\text{Knowledge Index (KI)} = \frac{\text{Number of Correct responses}}{\text{Total number of knowledge items}} \times 100$$

RESULTS AND DISCUSSION

Overall knowledge

Overall knowledge of the demonstrator farmers was categorized into low, medium and high on the basis of knowledge index (Table 1).

Table 1: Distribution of the respondents according to their knowledge index

Category	Knowledge index	Freq-	Percent- age
Low	Up to 33.68	42	16.80
Medium	33.69 to 64.16	173	69.20
High	64.17 and above	35	14.00
(Average 51.32) Total		250	100.00

On the whole sample of oilseed growers, majority (69.20 per cent) of the respondents constituted the medium knowledge index. 'Low' and 'High' knowledge index was constituted by 16.80 per cent and 14.00 per cent respondents, respectively. The average knowledge index score was 51.32 which indicated that farmers were having good knowledge about the improved practices of oilseeds.

The data were further analyzed to know the

Knowledge level of recommended practices of oilseeds among different category of farmers (Table 2).

Table 2. Knowledge level of recommended practices of oilseeds among different category of demonstrator farmers.

Category of the farmers	Knowledge level					
	Low		Medium		High	
	No.	%	No.	%	No.	%
Small farmers (81)	15	18.52	60	74.07	06	7.41
Medium farmers (126)	19	15.08	97	76.98	10	7.94
Big farmers (43)	08	18.60	16	37.21	19	44.19
Total (250)	42	16.80	173	69.20	35	14.00

Table 2 reveals that, the knowledge level of the big land holding (2.01 to 4.00 ha) category farmers had high knowledge as compared to small (Up to 1.0 ha) and medium (1.01 to 2.00 ha) category of farmers. However, small and medium land holding category farmers had medium knowledge about oilseed production technology. This might be due to medium level of extension contact and extension participation of demonstrator farmers observed though the front line demonstration plots conducted on their own fields. Similar finding has also been reported in studies such as Patil(1993) and Govindgowda *et al.*(2000).

Practice wise knowledge level of demonstrator farmers about recommended practices of oilseeds

The data presented in Table 3 indicates that overall 76.40 per cent demonstrator farmers had knowledge regarding recommended improved variety/ hybrid in which the percentage of groundnut growers was observed maximum (90.00 per cent). In case of seed rate 53.00 per cent demonstrator farmers had correct knowledge about seed rate. Regarding spacing majority (60.00 per cent) of groundnut growers had correct knowledge and the overall knowledge level was observed to the extent of 57.20 per cent. In case of seed treatment 40.00 per cent farmers had correct knowledge. Maximum (70.00 per cent) number of niger growers were not having knowledge about seed treatment. With respect to application of FYM it was observed that more than half (54.80 per cent) numbers of farmers were aware

about correct quantity of FYM. Similar results are seen in case of application of fertilizers in which 54.40 per cent respondents had correct knowledge. Further, it is seen that groundnut growers had better knowledge than niger growers regarding FYM and fertilizer application. In case of intercultural opera-

tions overall 58.80 per cent farmers had correct knowledge, whereas, 39.60 per cent farmers had knowledge about plant protection measures. Regarding weed/water management and harvesting & threshing, 50.00 per cent and 60.40 per cent respondents had correct knowledge, respectively.

Table 3: Extent of knowledge level of demonstrator farmers about recommended practices of oilseeds

Sr. No.	Practices	Selected oilseeds										
		Kharif groundnut (n=50)		Rabi-summer Groundnut (n=50)		Niger (n=50)		Sunflower (n=50)		Total oilseeds (n=250)		
		f	%	f	%	f	%	f	%	f	%	
1	2	3	4	5	6	7	8	9	10	11	12	
1.	Improved Variety /Hybrid											
	Known	45	90.00	90	90.00	30	60.00	26	52.00	191	76.40	
	Not-Known	05	10.00	10	10.00	20	40.00	24	48.00	59	23.60	
2.	Seed rate											
	Known	28	56.00	65	65.00	21	42.00	20	40.00	134	46.40	
	Not-Known	20	20.00	35	35.00	29	58.00	30	60.00	116	46.40	
3.	Spacing											
	Known	32	64.00	54	54.00	30	60.00	27	54.00	143	57.20	
	Not-Known	18	36.00	26	26.00	20	40.00	23	46.00	107	42.80	
4.	Seed treatment											
	Known	26	52.00	42	42.00	15	30.00	17	34.00	100	40.00	
	Not-Known	24	48.00	58	58.00	35	70.00	33	66.00	150	60.00	
5.	Application of FYM											
	Known	24	48.00	43	43.00	38	76.00	28	56.00	131	45.20	
	Not-Known	24	48.00	43	43.00	38	76.00	28	56.00	131	45.20	
6.	Fertilizer application											
	Known	25	50.00	44	44.00	38	76.00	29	58.00	136	45.60	
	Not-Known	25	50.00	44	44.00	38	76.00	29	58.00	136	45.60	
7.	Intercultural operations											
	Known	27	54.00	62	62.00	17	34.00	20	40.00	120	58.80	
	Not-Known	23	46.00	38	38.00	33	66.00	30	60.00	130	41.20	
8.	Plant protection measures											
	Known	22	44.00	45	45.00	07	14.00	12	24.00	86	39.60	
	Not-Known	28	56.00	55	55.00	43	86.00	38	76.00	164	60.40	
9.	Weed/Water management											
	Known	28	56.00	52	52.00	25	50.00	22	44.00	125	50.00	
	Not-Known	22	44.00	48	48.00	25	50.00	28	56.00	125	50.00	
10.	Harvesting and Threshing											
	Known	30	60.00	54	64.00	50	100.00	17	34.00	151	60.40	
	Not-Known	20	40.00	46	36.00	-	-	33	66.00	99	39.60	

The result showed that the groundnut growers had more knowledge than niger and sunflower growers. The reason may be that the groundnut growers attended various extension programmes like training, demonstrations, field visit, etc. conducted by KVK and also they may be in regular touch with Subject Matter Specialist of KVK. The other possible reason might be higher level of scientific orientation of the groundnut growers.

Relationship between knowledge level and various characteristics of the demonstrator farmers

Table 4: Correlation between selected characteristics of the respondents and knowledge level of oilseed growers

Sl.No.	Variable	Correlation coefficient ('r' value)
1	Age	-0.183*
2	Education	0.474*
3	Family Size	-0.173*
4	Social Participation	0.336*
5	Experience in oilseed growing	0.452**
6	Extension Contact	0.431*
7	Extension Participation	0.367*
8	Scientific orientation	0.364*
9	Risk Orientation	0.019 ^{NS}
10	Land Holding	-0.083 ^{NS}
11	Annual income	0.284*

*Significant at 5 % level, ** Significant at 1 % level, NS- Non Significant

During data collection it was noted that many of the farmers were not aware of the names of insecticides and their application procedure. High knowledge in case of improved variety fertilizers and agronomic practices was due to simplicity of technology. This suggests that extension workers must give more emphasis to educate and motivate farmers about seed treatment and plant protection measures which are very crucial for getting higher production.

It may be observed from Table 4, that knowledge of the respondents is significantly associated with education, annual income, social participation, extension contact, extension participation, experience

in oilseed growing and scientific orientation of demonstrator farmers. It implies that knowledge level of the respondents increase with increase in their education, annual income, social participation, extension contact, extension participation, experience in oilseed growing and scientific orientation.

However, age and size of family of respondents had a significant but negative relation with the knowledge level of oilseed growers, while no relationship was found between knowledge and land holding as well as knowledge and risk orientation. These findings are also in line with the findings of Tambade(2007).

CONCLUSION

Overall oilseed growing farmers were having satisfactory knowledge about the improved practices of oilseeds. Knowledge of farmers about improved varieties, seed rate, spacing, fertilizer application, intercultural operations and harvesting was found to be sufficient but was poor in case of seed treatment and plant protection measures.

Education, annual income, social participation, extension contact, extension participation, experience in oilseed growing and scientific orientation were found to be positively and significantly related with knowledge. However, age and size of family had negative and significant association with knowledge, while land holding and risk orientation was not found to be associated.

The findings of the study have brought out certain action implication for local extension agencies and field personnel who should acquire knowledge on oilseed production technology and in turn give training to farmers, which would help them to acquire more knowledge about these practices, with more emphasis on seed treatment and plant protection measures. There is need to step up extension efforts to motivate them to adopt all the recommended practices. Steps may also be taken to overcome the constraints faced by the farmers in the adoption of oilseed production technology.

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