

Correlates of Knowledge of Mustard Production Technology

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ABSTRACT

This study was conducted to examine the relationship between characteristics of farmers with their knowledge in Ambah Sub-Division of Madhya Pradesh. It was revealed that the age of respondents showed significant correlation with knowledge, while, education landholding and caste existed significance in some important practices. Type of family and annual income showed their significance only in few practices. The multiple determination indicates that caste type of family, annual income and landholding together effected the knowledge of plant protection measures significantly to the extent of 78.88 per cent.

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INTRODUCTION

Although India has 20.8 per cent of the world's area under oilseeds, it accounts for less than 10 per cent of the world's production to meet the needs of about 16 per cent of the world's population. Oilseeds form the second largest agricultural community after cereals in India sharing 13 per cent of the country's gross cropped area and accounting for nearly five per cent of gross national product and 10 per cent of the value all agricultural products.

Knowledge is one of the important components of behaviour as it plays a major role in overt behaviour of human beings. Therefore, the knowledge of the innovations is the basic requirement leading to adoption. Hence, the present study was carried out with the specific objective 'To explore the

relationship between selected characteristics of the mustard growers with their knowledge'.

MATERIALS AND METHODS

The present study was conducted in northern Madhya Pradesh. The study was confined to one sub-division (Ambah). Out of 25 Rural Agricultural Extension Officers Circles in the sub-division, five were selected by random sampling. From each R.A.E.O., Circle, 25 farmers were selected by using random sampling. Thus, in all 125 mustard growers, formed the sample of study. The data were collected with the help of pretested structured schedule by personally interviewing the respondents. The simple correlation coefficient and standard partial regression coefficient were worked out with the method given by Johnson (1950). The important

TABLE 1
Simple.

Sr. No.	Practices	Independent Variables						
		Education		Type of Family (x4)	Annual Income (x5)	Land Holding (x5)	Extension Coefficient (x7)	
		Age (x2)	(x2)					
P1	Ploughing	0.25774**	0.16738	-0.28641**	-0.02120	-0.03587	-0.11823	
P2	Soil test	0.54059**	0.57526**	0.09321	-0.03553	0.57835**	0.27696**	
P3	Improved variety	0.80553**	0.28052**	0.01157	-0.28732**	0.56638**	0.21998*	
P4	Time of sowing	0.25588**	0.17408*	-0.18002*	-0.08333	-0.02901	-0.09623	
P5	Soil treatment	0.42767**	0.49237**	0.14548	-0.11785	0.13335	0.15309	
P6	Organic measures	0.49812**	0.11296	0.06675	-0.08111	0.29651**	-0.03122	
P7	Chemical fertilizer	0.75664**	0.24618**	-0.03637	0.0882	0.69752**	0.27217**	
P8	Seed rate	0.49237**	0.46057**	0.02916	-0.25198**	0.59216**	0.10002	
P9	Seed treatment	0.30241**	0.43519**	-0.15430	0.23748**	0.13056	0.19245*	
P10	Method of sowing	0.23028**	0.21541*	0.12729	-0.11785	0.27696**	0.27217**	
P11	Spacing	0.15262	-0.02196	-0.18604*	-0.44862**	0.37095**	0.13760	
P12	Weedicide	0.32904**	0.21357*	0.08909	0.07217	0.44808**	0.09651	
P13	Irrigation	0.63397**	0.24003**	-0.06675	0.08111	0.40947**	0.03122	
P14	Plant protection measures	0.30210**	0.14585	-0.23702**	0.23565**	0.84625**	0.36280**	

** = Significant at 0.01 level of probability.

* = Significant at 0.05 level of probability.

practices relating to mustard cultivation were included in this study.

RESULTS AND DISCUSSION

The fourteen important improved practices were selected for studying the knowledge of mustard growers. In order to examine the rate of dependance of farmers knowledge level upon the selected seven independent variables, simple correlation co-efficient were worked out. The data presented in table 1 reveal three simple correlation co-efficient of knowledge of various improved practices of mustard with independent variables.

The co-efficient of correlation between the age and knowledge of all the practices except spacing was found to be positive and significant at 0.01 level of significance. This can be attributed to the reason that as the age increases, there might be more exposure and more experience. This finding is an agreement with that Reddy & Swaroop (1995). The relationship between the education and knowledge level of soil test, improved variety, soil treatment, chemical fertilizer, seed rate, seed treatment and irrigation was found to be significant at 0.01 level, whereas, time of sowing, method of sowing and weedicide use were found significant at 0.05 level of significance. It is known fact the formal education widens the horizons of knowledge of an individual. As educated farmers can gather information by referring to various information sources. This finding is in line with the finding of Rai *et al.* (1987) and Sakharkar *et al.* (1992). The caste of respondents showed significant correlation with the practices like soil test, improved variety, time of sowing, soil treatment, seed treatment irrigation and plant protection measures. It is due to the fact that the respondents belong to upper caste strata have better contact with extension personnels. Thus, getting more opportunities in comparison with lower caste group of respondents. This finding are confirmed by Kumari & Sinha (1995), Reddy

& Iqbal (1993). The correlation coefficient between type of family and knowledge of ploughing, time of sowing and spacing were negatively significant. It can, thus be concluded that type of family had significantly inverse impact over the knowledge of three improved practices. These results are in conformity with the result of Kumari & Sinha (1995).

The correlation co-efficient between annual income and knowledge of improved variety, seed rate and spacing was negatively significant at 0.01 level of significance. This might be due to the fact that the above three practices require less amount to purchase and the poor farmers are very anxious to increase his production by applying low input technology in their fields. The seed treatment and plant protection measures showed significant correlation. It is bare fact the use of these two improved practices is a matter of comparatively heavy investment and only good income receivers can use the same, they are motivated to secure the knowledge necessary for its correct application. This finding is supported by Reddy & Swaroop (1995), Deshmukh *et al.* (1995). The land holding of respondents were found to be positive and significantly correlated with their knowledge of improved practices viz., soil test, improved variety, organic manure, chemical fertilizers, seed rate, method of sowing, spacing, weedicide, irrigation and plant protection measures at 0.01 level of probability. It could be interpreted as the farm size is important asset of big farmers. These farmers may inclined to get more profit from agriculture by carrying out scientific farming. They may consider farming as a business and take benefits of new agricultural technology. They may have more entrepreneurial skill to manage the farm more efficiently. This finding gets support from the study conducted by Reddy & Swaroop (1995) Reddy & Iqbal (1993).

TABLE 2

Standard partial regression coefficient (B-values) of knowledge with independent variables.

Sr. No.	Practices	Independent Variables							R ²	F
		Education		Caste (x3)	Type of Family (x4)	Annual Income (x5)	Land Holding (x6)	Extension Contact (x7)		
		Age (x1)	(x2)							
P1	Ploughing	-0.2660**	0.2624*	-0.00279	-0.074**	0.1343	0.1353	0.2263*	0.19360	4.01273
P2	Soil test	0.1869**	0.6215**	-0.0027	-0.1740**	0.0715	0.1895*	0.2955**	0.63072	28.54781**
P3	Improved variety	0.8061**	-0.0846	0.0988	0.233	-0.3110**	0.0464	0.0459	0.77860	58.77831**
P4	Time of sowing	0.3968**	0.3216**	-0.0403	-0.4285**	-0.0476	-0.3330**	-0.0451	0.24435	5.40494
P5	Soil treatment	0.4350**	0.5269**	-0.1431	-0.1373	-0.2065**	-0.2890**	-0.0039	0.37807	10.16079**
P6	Organic masure	0.5274**	-0.2884**	0.0451	0.0716	-0.0919	0.2264	-0.2808**	0.32130	7.91260
P7	Chemical fertilizer	0.6014**	0.0028	-0.1071	-0.1802**	0.0903	0.4368**	-0.0765	0.75012	50.17451**
P8	Seed rate	0.2918**	0.4714**	-0.2571**	-0.1506	-0.2413**	-0.2352**	0.0030	0.54885	20.33389**
P9	Seed treatment	0.1355*	0.7130**	-0.2453**	-0.5049**	0.1963**	-0.2769**	0.3914**	0.58832	23.88634**
P10	Method of sowing	0.0729	-0.3035**	0.2221*	0.1281	0.0071	0.6104**	-0.5872**	0.32405	8.01275
P11	Spacing	0.0643	-0.2871*	0.1636	0.0503	-0.3360**	0.4089**	-0.1251	0.31465	7.67579
P12	Weedcide	0.1065	0.0837	-0.0917	-0.0002	0.1380	0.4232**	-0.0557	0.25313	5.66485
P13	Irrigation	0.4716**	-0.2694**	0.4746**	-0.2311**	0.3666**	0.5080**	-0.3520**	0.64289	30.09017**
P14	Plant protection measures	-0.0996	-0.0927	-0.1655**	0.1997**	-0.1398**	0.8978**	-0.0166	0.78884	62.43939**

** = Significant at 0.01 level of probability.

* = Significant at 0.05 level of probability.

The correlation coefficient between extension contact and knowledge of soil test, improved variety, chemical fertilizer, seed treatment, method of sowing and plant protection measures showed positive and significant relationship. The most obvious reason for such a finding is the contact with the extension personnel helps an individual to seek correct, scientific information and advice. It assists to clear the doubts about an innovation. It is felt that those who have more extension contacts, they might seek more agricultural information for use in farming. The study conducted by Reddy & Swaroop (1995) confirm this finding.

Relative contribution of independent variables to knowledge of improved practices :

It is evident from the table 2 that the significant partial regression coefficient of age, education, type of family and extension contact had influence on the knowledge of recommended ploughing. It indicate that these four variable exerted their influence on knowledge of farmers regarding recommended ploughing. The value of coefficient of multiple determination (R^2) indicates that all these four variables could explain only 19.36 variation in the knowledge of ploughing. The order of contribution of these variables from highest to lowest was type of family, age, education and extension contact. Out of seven independent variables five variables namely age, education, type of family, land holding and extension contact were found to have considerable significance at 't' level. The (R^2) value (0.63072) indicates that 63.07 per cent variability in farmers knowledge of soil test could be explained by these four variables. As per their relative importance in predicting the knowledge education was the first extension contact was second, land holding was third age was fourth and type of family was fifth. Only two independent variables i.e. age and annual income had their influence on knowledge of improved variety of mustard. These two independent variables together

effected the knowledge in dependent variable (P3) significantly to the extent of 77.86 per cent. From the standard partial regression coefficients, it was clear that the ranks were first to age and second to annual income.

It was observed that out of seven independent variables, four variables namely age, education, type of family and land holding together affected the knowledge of time of sowing to the extent of 24.43 per cent. The age, education, annual income and landholding had significant influence on knowledge of soil treatment. The R^2 value showed that 37 per cent of variation was explained by these four variables. The value of regression co-efficient of age, education and extension contact had significant influence on knowledge of organic manures. The R^2 value indicated 32 per cent of the variation by these three variables. It is clear from the table that age, type of family and landholding together affected the knowledge of chemical fertilizers to the extent of 75 per cent. As per their relative importance in predicting the knowledge, age was the first followed by land holding and type of family respectively. The age, education, caste, annual income and landholding had significant effect on knowledge of seedrate. The value of multiple determination explained 54.88 per cent variation by these four variables. The co-efficient of multiple determination (R^2) showed 58.83 per cent variation in knowledge of seed treatment and 64.28 per cent of irrigation was explained by all these seven independent variables. The knowledge of weedicide affected only by landholding significantly to the extent of 31.46 per cent. Four variables namely caste, type of family, annual income and landholding were accounted for influencing the knowledge of plant protection measures. These variables together effected the knowledge of plant protection measures significantly to the extent of 78.8 per cent. From the standard partial regression coefficients, it was clear that the ranks were first to landholding, second to type of family, third to caste and fourth to annual income.

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