

TECHNOLOGICAL KNOWLEDGE OF ONION GROWERS

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ABSTRACT

The study to determine the growers' knowledge regarding onion production technology and factors influencing to it was undertaken in Madhya Pradesh. Among the fourteen practices, the level of knowledge was higher in the case of field preparation, time of sowing, intercropping and recommended spacing. The lower level of knowledge was found in the case of seed treatment and plant protection. The education, experience in onion cultivation, attitude toward farm practices, economic motivation and market orientation need manipulation to improve the knowledge level of the onion growers.

INTRODUCTION

Onion is an important commercial vegetable crop commonly grown all over the country under wide range of climatic conditions. It occupies a premier position among vegetable crops due to its regular demand. It also plays an important role in economy of our country because of its export value. India ranks first in area (4.8 lakh hectare) and produce 5.47 million tonnes of onion.

In Madhya Pradesh, it is commercially grown in about 25 thousand hectare with total production of 0.33 million tonnes. The productivity of onion in the state is very low (13.2 tonnes /ha). The knowledge of onion production technology is an important component for increasing the productivity. Keeping this in view, the study has been undertaken to determine the growers' knowledge regarding onion production technology and factors influencing to it.

RESEARCH METHODOLOGY

The present study was conducted in Sehore district of Madhya Pradesh. Out of total 410 onion growers in the district, 25 per cent

(103) respondents were selected by using proportional random sampling method.

The data were collected with the help of pre-tested interview schedule. For studying knowledge, the interview schedule included fourteen recommended practices of onion cultivation. The total score obtained by the respondent was the knowledge score of individual respondent. The knowledge possessed by individual respondent was measured by computing knowledge index. The data were analyzed by applying mean, multiple correlation and regression analysis.

RESULTS AND DISCUSSION

LEVEL OF KNOWLEDGE

The level of knowledge of the onion growers regarding selected recommended package of practices of onion cultivation was measured. On the basis of knowledge index, they were distributed as presented in Table-1.

It is obvious from the data that majority of the respondents possessed full knowledge about recommended field preparation

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Table 1. Distribution of Onion growers according to their extent of knowledge regarding onion production technology (n=103)

Practices	Extent of knowledge		
	Full knowledge	Partial knowledge	No knowledge
1. Field preparation	88(85.4)	15(14.6)	00(00.0)
2. Improved varieties	37(35.9)	54(52.4)	12(11.7)
3. Time of sowing	63(61.2)	40(38.8)	00(00.0)
4. Seed treatment	22(21.3)	46(44.7)	35(34.0)
5. Seed rate	41(39.8)	54(52.4)	8(7.8)
6. Nursery management	45(43.7)	58(56.3)	00(00.0)
7. Spacing	56(54.4)	47(45.6)	00(00.0)
8. Irrigation management	42(40.8)	61(59.2)	00(00.0)
9. Recommended dose of chemical fertilizers	27(26.2)	65(63.1)	11(10.7)
10. Weed management	35(34.0)	68(66.0)	00(00.0)
11. Plant protection	22(21.4)	47(45.6)	34(33.0)
12. Crop duration	44(42.7)	59(57.3)	00(00.0)
13. Inter-cropping	62(60.2)	41(39.8)	00(00.0)
14. Storage	40(38.8)	63(61.2)	00(00.0)

practices (85.4%), time of sowing (61.2%), inter-cropping (60.2%) and spacing (54.4%). However, practical knowledge was observed in majority of the respondents about weed management (66%), recommended dose of chemical fertilizers (63%), storage (61.2%), irrigation management (59.2%), crop duration (57.3%), nursery management (56.3%), seed rate (52.4%) and improved varieties. Conversely, about 33 per cent of the respondents had no knowledge about seed treatment and plant protection measures in onion cultivation.

On the basis of level of knowledge of individual onion growers for individual practice, the overall knowledge level was calculated. On account of the overall knowledge level, the onion growers were distributed in three groups as depicted in

Table 2. Distribution of the respondents according their overall knowledge regarding onion production technology

Knowledge level	Frequency (n=103)	Percentage
Low (42.88)	18	17.47
Medium (42.28 to 72.88)	65	63.11
High (> 72.88)	20	19.42
Mean=57.58	S.D.=15.30	

Table-2. The data in Table-2 revealed that majority (70.87%) of the onion growers possessed medium level of knowledge followed by low (16.5%) and high (12.63%), level of knowledge respectively.

DETERMINANTS OF KNOWLEDGE

In order to identify the factors that determine the knowledge about recommended onion production technology possessed by onion growers, a multiple regression analysis was carried out and the data in that regard have been presented in Table-3.

The correlation coefficients indicate that, out of the selected thirteen independent variables, the variables viz. education; experience of onion cultivation; extension participation; information seeking

Table 3. Correlation and regression coefficient of technological knowledge with selected independent variables

Independent Variables	Correlation coefficient (r)	Regression coefficient (b)	calculated "t" value
X1 Education	0.654 **	5.355 **	8.681
X2 Caste status	0.096	2.694	0.968
X3 Area under onion crop	0.077	6.308	0.782
X4 Onion cultivation experience	0.565 **	2.060 **	6.892
X5 Extension participation	0.197 **	0.219 **	2.027
X6 Information seeking behaviour	0.499 **	1.974 **	5.791
X7 Attitude towards improved farm practices	0.350 **	1.572 **	3.756
X8 Cosmopolitaness	0.527 **	6.102 **	6.233
X9 Risk preferences	0.478 **	1.963 **	5.475
X10 Economic motivations	0.528 **	2.744 **	6.246
X11 Mass-media exposure	0.385 **	1.145 **	4.187
X12 Credit orientations	0.261 **	2.530 **	2.716
X13 Market orientations	0.491 **	2.273 **	5.676

R² = 0.635, R = 0.796 F value for R = 11.94 ** d.f. (13 and 89)

** Significant at 0.01 level of probability

behaviour; attitude towards improved farm practices; cosmopolitaness; risk preference; economic motivation; mass media exposure; credit orientation; and market orientation had positive and significant relationship with knowledge score of the onion growers. Contrarily, caste status and area under onion crop did not show any relationship with knowledge. The regression coefficients of all these variables were found significant except for caste status and area under onion crop.

It could also be noted from Table-3 that all

the selected variables gave highest coefficient of determination (0.635) which was significant at 0.01 level of probability. This indicated that selected thirteen factors contributed 63.5 per cent of variation in knowledge about onion production technology. In this, the factors caste status and area under onion crop did not contribute significantly in variation of knowledge.

For arriving at optimum model, step down multiple regression analysis were carried out and presented in Table-4. In this model the factors namely education, onion cultivation

Table 4. Optimum model of multiple regression analysis of five characters with knowledge

Independent variables	Regression of (b)	Standard error "t" value	Computed (byx)
X1 Education	-1.38	13.61	0.101
X4 Onion cultivation experience	2.93 **	0.66	4.429
X7 Attitude towards improved farm practices	1.39 **	0.25	5.474
X10 Economic motivation	0.39 NS	0.33	1.179
X13 Market orientation	1.25 **	0.39	3.192

R² 0.6216, R = 0.7884 F value for R = 31.87 ** d.f. (5 and 97)

** Significant at 0.01 level of probability

experience, attitude towards improved farm practices, economic motivation and market orientation were included and other factors were deleted from regression analysis on the basis of their low "t" value. The coefficient of determination 0.6216 was significant at 0.01 level of probability. It shows that the five factors included in the model produced 62.16 per cent of variation in knowledge level of the onion growers.

CONCLUSION

Among the fourteen practices, the level of knowledge was higher in the case of field preparation, time of sowing, intercropping and recommended spacing. The lower level of knowledge was found in the case of seed treatment and plant protection.

Out of thirteen selected factors, five factors viz. education, onion cultivation experience, attitude toward farm practices, economic motivation and market orientation were relatively more important because these five factors produce near about equal percentage of variation (0.6216) to that of thirteen factors (0.635). As such, these five variables need manipulation to improve the knowledge level of the onion growers.

REFERENCE

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