

Knowledge and Attitude of Hill Farmers towards Improved Agricultural Practices

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ABSTRACT

Green revolution in India has bypassed the remote places like hills. Farmers are struggling for survival under unfavourable conditions like hills requiring attention of scientists. The present study was conducted in Uttarkashi district of Uttarakhand with 120 respondents, selected from 12 villages, using random sampling technique. The results of the study revealed that majority of the respondents had high attitude and medium level of knowledge towards improved agricultural practices. The factors like caste, education, land holding, farming experience, sources of information utilization, annual income, scientific orientation and economic motivation had significant relationship with knowledge and attitude of the respondents. If these factors are taken care of by implementing agencies of the extension programmes, it would certainly increase the adoption rate of improved agricultural technology in hills. Selective exposure of the mass media may help in shaping their attitude in desired direction.

Key words: Agricultural knowledge, Attitude, Improved agricultural practices.

INTRODUCTION

In hills of Uttarakhand, adoption of improved agricultural practices is the need of hour. The literatures indicated that attitude, knowledge and support are the major factors responsible for the acceptance of technologies. In fact, knowledge is an essential component of any kind of development. It can be referred to as organized or processed information or data, and is crucial in any innovation process. Attitude is closely linked to knowledge and influences each other. Farmers' attitudes have an impact on the acceptance of improved agriculture as a new technique to cultivate crops and rear livestock. Allport (1935) defined attitude as a mental readiness, ordered through long experience, and also stimulate in one direction or dynamics influence upon the individual's response to all objects with which it is related. Thus, the attitude of farmers depends on their mental readiness and experience in the agriculture sector. An attitude (*a*) refers to object, person, institution, or event; (*b*) has evaluative, positive or negative elements; (*c*) is based on cognitive beliefs towards the attitude object; and (*d*) has concerns for behaviour when confronted with the attitude object (Bergevoet *et al.*, 2004). It has been experienced that knowledge and favourable attitude of agrarian community of advanced agricultural states has transformed the shape of agriculture. However, this has not been realized in marginal areas like hill state of Uttarakhand. A study on hill farmers of the state revealed that knowledge gap (73.60 %) existed with respect to improved agricultural practices (Chandra and Pandey, 2006). Various studies (Subhashini and Thyagarajan, 2000; Singh *et al.*, 2002; Vaish *et al.*, 2003; Singh *et al.*, 2003) have revealed that socio-psychological

characteristics of farming communities also influence the adoption behaviour of farmers. In view of above facts the present study was farmers and find out its relationship with selected socio-psychological characteristics of selected hill farmers.

METHODOLOGY

The present study was conducted during 2008-09 in Uttarkashi district of Uttarakhand. Uttarkashi district has six development blocks, namely Naugaon, Purola, Mori, Bhatwari, Dunda and Chinyalisaur. A list of villages from each development block with maximum area under crop cultivation was prepared. From this list, two villages from each development block were selected randomly. Ten farmers were selected randomly from each selected villages. Thus, 120 farmers of 12 villages of Uttarkashi district constituted the sample size. The data were collected with the help of interview schedule by using personal interview technique. These data were analysed and tabulated using frequency, percentage and coefficient of correlation.

A three-point continuum scale was used to measure level of knowledge and attitude of the respondents. A knowledge test contained 10 items. It was related to cultural practices of cereals, cultural practices of vegetables, wasteland management for fodder production, protected cultivation, natural resource management and plant-protection practices. These dimensions were identified after a thorough review of literature and consultation with scientists and other experts in the field. Knowledge was assessed in terms of no knowledge, awareness and complete knowledge by assigning the scores 0, 1 and 2. The total score of

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knowledge for each respondent was calculated by adding up the scores of 12 dimensions. The knowledge was classified in three categories, *i.e.* low (0-14.4), medium (14.5-28.8) and high (28.9-36) on the basis of mean \pm Standard Deviation (S.D.). A scale (Chandra and Kumar, 2007) was used to determine the attitude of the respondents towards improved agricultural practices. The scale had 20 statements. Responses were recorded on a two-point scale of 'agree' and 'disagree'. A respondent could get maximum score of 117 and minimum 0. Thus based on the scores of respondent category of attitude was classified into low (50-75), medium (76-100) and high (101-125) on the basis of mean \pm S.D. The independent variable like age, caste, education, family size, land holding, farming experience, source of information utilization, annual income, scientific orientation and economic motivation were taken up for the study.

RESULTS AND DISCUSSION

Majority of the respondents were 31-45 years old having education of higher secondary (Table 1). Most of them had less than one hectare of land with family members six to nine. Family members were major source of labour to carry out field-based agricultural operations. Majority of the respondents had 21- 30 years farming experience which is expected to have positive influence on knowledge and attitude towards scientific innovations. Regarding sources of information utilization, 59.16 per cent respondents had medium exposure with annual income of ₹ 50,000/through agricultural occupation.

Table 1: Socio psychological profile of the respondents n=120

Attribute	Category	Frequency (percentages)
Age	Young (up to 30 years)	17 (14.16)
	Middle (31-45 years)	88 (73.33)
	Old (46 years and above)	15 (12.50)
Education	Illiterate	16 (13.33)
	Primary	3 (02.50)
	Middle	33 (27.50)
	Higher secondary Graduate and above	43 (35.83) 25 (20.83)
Family size	Less than 5 members	38 (31.66)
	6-9 members	43 (35.83)
	10 members and above	39 (32.50)
Land holding	Marginal (Below 1 ha)	77 (85.83)
	Small (1.01-2 ha)	18 (05.83)
	Semi marginal (2.01- 4 ha)	10 (08.33)
	Medium (4.01-10 ha)	5 (4.16)
Farming experience	1-10 years	14 (11.66)
	11-20 years	35 (29.16)
	21-30 years	47 (39.16)
	Above 30 (in years)	24(20.00)
Sources of information utilization	Low (<8.30)	22 (18.33)
	Medium (8.30-14.95)	71 (59.16)
	High (>14.95)	27 (22.50)
Annual income	Low (up to ₹. 50,000)	100 (83.33)
	Medium (₹ 50,001 - 1,00,000)	12 (10.00)
	High (More than 1,00,000)	08 (6.66)

Figures in parentheses indicate percentage

Knowledge of hill farmers about improved agricultural practices was analysed on 10 dimensions. It is clear from Table 2 that majority of the respondents (more than 70 %) had knowledge (awareness) about profitable crop rotation, fodder protection, plant protection. It was followed by protected cultivation (69%).

However, adequate knowledge about conservation of soil moisture followed by manure and fertilizer were possessed by 44 and 39 per cent respondents, respectively. It is also visible from the data that majority of the respondents had no knowledge about soil treatment (71 %) and critical stages of irrigation (59 %). It was followed by no knowledge about seed rate and seed treatment (23 %).

Table 2: Knowledge of the respondents about improved agricultural practices n=120

Practice	No Knowledge	knowledge	Adequate knowledge
High yielding varieties	0(0)	82(68)	38(32)
Conservation of soil moisture	22(18)	45(37)	53(44)
Plant protection	0(0)	92(76)	28(23)
Manure and fertilizer	13(11)	60(50)	47(39)
Fodder production	8(7)	90(75)	22(18)
Soil treatment	86(71)	21(18)	13(11)
Seed rate and seed treatment	28(23)	50(42)	42(35)
Protected cultivation	0(0)	83(69)	37(31)
Profitable crop rotation	0(0)	95(79)	25(21)
Critical stage of irrigation	47 (59)	42(35)	31(26)

Figures in parentheses are percentage of the total

Majority of farmers (78.33 %) had medium level of knowledge (Table 3). However, (15.83 %) were found to have low followed by high (5.83 %) level of knowledge about improved agricultural practices.

Table 3: Level of knowledge of the respondents towards improved agricultural practices n=120

Categories	Frequency	Percentage	Mean	S.D.
Low (0-14.4)	19	15.83	19.5	6.2
Medium (14.5-28.8)	94	78.33		
High (28.9-36)	7	5.83		
Total	120	100.00		

The level of attitude of an individual is responsible for measuring the favourableness and unfavourableness towards improved agricultural practices. The Table 4 indicated that majority of farmers (51.66 %) had high level of attitude. Only 45.83 per cent farmers possessed medium level of attitude towards improved agricultural practices.

Table 4: Level of attitude of the respondents towards improved agricultural practices

n=120				
Categories	Frequency	Percentage	Mean	S.D.
Low (50-75)	3	2.5	99.6	12.1
Medium(76-100)	55	45.83		
High(101-125)	62	51.66		
Total	120	100.00		

The total scores of knowledge and attitude about improved agricultural practices for each respondent were put to correlation analysis with socio-psychological attributes of the respondents. The socio-psychological variables, viz. education, land holding, farming experience, source of information utilization, annual income, scientific orientation and economic motivation, were positively and significantly related with knowledge and attitude towards improved agricultural practices (significant at 0.01 level of probability). The result has been presented in Table 5. It implies that knowledge and attitude of the farmers increases with increase in their education, land holding, farming experience, source of information utilization, annual income, scientific orientation and economic motivation. The strong association of source of information utilization, annual income, scientific orientation and economic motivation with knowledge and attitude indicate that resourceful farmers were able to use more number of information sources. It might have helped in cross checking of information. Their high annual income helped in spending more money for utilizing the latest crop production technologies. Their scientific orientation might have helped in forming rational decisions. Economic motivation for aspiring better living condition might have helped them to access information advantageous for them. Similarly, education might have helped in seeking information and processing it for the advantage of more production. Large farm size might have helped them in economizing the purchase and use of farm inputs, easy disposal of farm produce, distribution of family labour etc. Most of the respondents of the study area had experience of farming 21-30 years and they were exposed to agricultural innovations. Majority of the respondents belonged to general caste faced no bar in access of sources of information utilization in relation to farming. All these factors might have motivated a farmer in order to raise their production by economizing the resources.

The characteristics like age and family size were found having non-significant relationship with the level of knowledge and attitude of the respondents. The possible reason for this might be that majority of respondents were found to be in the middle age group and

old age. Advance in age might affect the learning capacity, this might be the reason for their low understanding of the technical message. In the study area family size of the interviewed respondents was five to six, mainly consisting of elder men/women and school-going children. They might have lesser involvement in farming due to their physical limitations.

Table 5: Association of socio-psychological characters with level of knowledge and attitude of the respondents towards improved agricultural practices

n=120		
Socio-psychological characteristics	Knowledge Correlation coefficient "r"	Attitude Correlation coefficient "r"
Age	0.063	0.032
Education	0.631**	0.345**
Family size	0.136	0.123
Land holding	0.437**	0.478**
Farming experience	0.467**	0.389**
Sources of information utilization	0.783**	0.678**
Annual income	0.643**	0.543**
Scientific orientation	0.538**	0.342**
Economic motivation	0.643**	0.569**

** 1% level of significance

CONCLUSION

The study showed that majority of hill farmers had high attitude with medium level of knowledge about improved agricultural practices. If these factors are taken care of by implementing agencies of the extension programmes, it would certainly increase the adoption rate of improved agricultural technology in hills particular. Selective exposure of the mass media may cause desirable effect in shaping their attitude in right direction. Further, it may also be accompanied with use of publications, radio and television, field demonstrations, along with using the local media *i.e.* opinion leader, Panchayat leaders, *etc.*

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