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A study on knowledge about the recommended agricultural practices through ATMA by paddy growers in Budgam region of Kashmir

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Abstract
The study was conducted to know the knowledge level of paddy growers of Budgam district about various agricultural practices. The study was conducted in Budgam region comprising of 200 respondents (150 trained and 50 untrained). The majority of farmers covered under the ATMA programme were of middle age group, having middle standard qualification, medium family size (5-8 members) and medium experience in farming (16-25 years). There was significant relationship between age, education, experience in farming, sources of information with knowledge level of farmers. There has been considerable improvement in knowledge of new technologies and farm practices among the trained farmers. The services rendered by the Department of Agriculture were regular training programmes during cropping season (83.33%), supply of written material during training (82.22%), protection from exploitation of middlemen (65.56%) and conducting demonstrations on farmer's field (61.82%). The ATMAs are expected to support the state extension system by making it more broad-based and participatory for planning, implementing and monitoring the extension activities of a district. The purpose of this component was to test new approaches to technology transfer, new organizational arrangements, and operational procedures. For evaluation of field level impact of ATMA model, beneficiaries (target farmers) of both trained and un-trained were compared.

Keywords: Paddy production**,** Impact, ATMA, Knowledge, Technological interventions

Introduction
Although, scientific research in agriculture is moving fast and new techniques are being added continuously, so far only 20 per cent of the available technology has been adopted by the farmers that too only among 10 per cent of farming population. It is seen that productivity levels of different crops are very low so,in order to increase the crop yields, the level of adoption of improved farm practices has to be enhanced. Knowledge of the recommended technologies is a pre-requisite to the adoption process. The basic input for achieving higher productivity in the assimilation of technological knowledge is one of the important component of behaviour and as such it plays a major role in covert and overt behaviour of human beings. Knowledge of the technology is the basic requirement as it gives impetus to adopt technology. The adoption of any technologies depends on the individual development and acceptance of modern agricultural technology is the prime attention for increasing crop production. It is generally observed that all the farmers do not use recommended practices. It is the experience of the extension workers that many practices including plant protection measures in spite of their merits are not accepted widely by the farmers. Some technologies record very slow rate of adoption. It is therefore, a question as to why one practice is more readily adopted than the other. One of the possible answers is some innate characteristics of the practice, which may speed up or retard its rate of adoption. The differential rate of adoption of farm technologies by the farmers is generally attributed to some of the personal and socio-economic characteristics of farmers (Awotide *et al*, 2016) [1]. Convincing farmers about applicability of innovations under prevailing situation is an uphill task. Farmers like other people believe and are influenced by trainings conducted under different programmes. Trainings under ATMA programme thus plays an important role in convincing farmers on efficacy of new technologies. The trainings have been recognised as one of the important extension methods and occupy a very unique position in extension programmes in developing countries like India. So the present study was conducted with specific objective of the study was to analyze the extent of knowledge possessed and adopted by the paddy growers about agricultural practices.

Methodology

The present study was conducted in District Budgam of Jammu and Kashmir state to find out the Impact of Farmer's Training on Paddy production Technology under ATMA. District Budgam comprises of 8 blocks where the ATMA programme was launched in the year 2005-06. one blocks i.e., Block Budgam was selected purposively as having more number of Paddy growers and occupy more area under Paddy. Also more number of farmers have undergone different trainings under ATMA as compared to other blocks of the district.

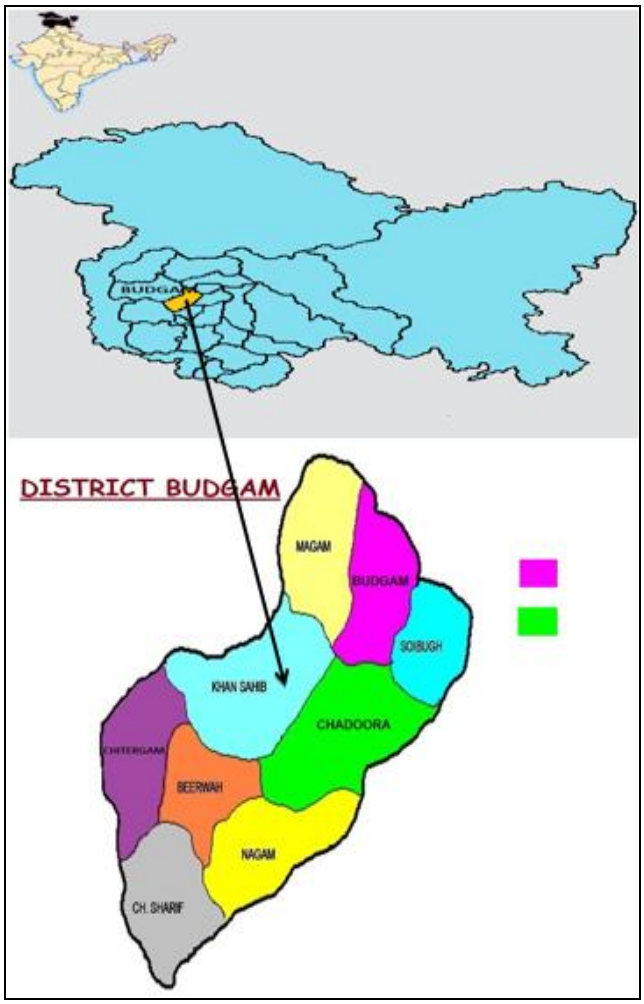

Fig 1: Map showing the study area

There were 340 farmers in block Budgam who had attended trainings under ATMA. Out of these farmers a sample of 68 farmers from Budgam were randomly selected on the basis of proportional allocation. In addition to this, a list of un-trained farmers from the same villages was prepared and a sample of 50 farmers was selected randomly.

An Interview Schedule was constructed based upon the objectives, variables and available literature on the topic. The schedule was prepared in English language. While preparing the schedule, due care was taken to avoid questions with dual meaning and contradictory statements. The language used for the questions was simple for easy understanding. In this way the research schedule was constructed to collect the necessary information.

The author personally interviewed the respondents included in the sample. The help of concerned Sub-Divisional Agricultural Officers (SDAOs) was sought for obtaining the list of trained farmers. The importance and objectives of the study were clearly explained to all the member farmers. They were assured that all the information furnished by them will be kept confidential and would be used for the research study only.

The qualitative data was quantified by using various statistical tools and working out different scores in order to find out the nature of association between dependent and independent variables

Independent Variables

Age

It is one of the basic characteristic of an individual linked with his maturity, physical fitness and productivity. At the time of interview, chronological age was considered. The respondents according to age were classified into three categories.

1. 44 years and below - Low (Young)
2. 45 to 62 years - Medium (Middle Age)
3. 63 years and above - High (Old Age)

Education

The level of formal education attained by an individual tends to influence the extent to which an individual is exposed to new ideas and outer world. According to formal education, the respondents were classified into following categories.

a. Illiterate
b. Middle
c. Matric
d. 10+2
e. Graduate
f. Graduate and above

Family Size

The size of family refers to the number of members in the family. Considering the number of members in the family, the respondents were classified into three categories.

a. 4 members and below - Low
b. 5 to 8 members - Medium
c. 9 and above members - High

Annual Income

This includes the annual income of the member farmers from Agriculture and all other sources. According to their level of income, the member farmers were classified into three categories.

a. Rs 60,000 and below - Low
b. Rs 60,001 to Rs 1,20,000 - Medium
c. Above Rs 1,20,000 - High

Land Holding

The land holding refers to the total land possessed by an individual farmer. According to the extent of land possessed by them, the member farmers were classified into three categories.

a. 2 hectares and below - Low
b. 2.1 to 4 hectares - Medium
c. Above 4 hectare - High

Experience in farming

Experience in farming means the number of years for which the member farmer has been practicing farming. As per their experience in farming the member farmers were classified into three categories.

a. 15 years and below - Low
b. 16 to 25 years - Medium
c. 25 years and above - High

Sources of Information

The source of information refers to the use of different sources by the member farmer for obtaining information regarding Paddy Production Practices. The score was worked out by assigning score one to each of the source used by the member farmer. The total score of each farmer was worked out and the member farmers were grouped into three categories.

1 Score 2 and below - Low
2 Score 2 to 4 - Medium
3 Score 4 and above - High

Social Participation

Social participation refers to the participation of a member farmer in various formal and informal organizations. The score was worked out by assigning one score to each member farmer having ordinary membership in one social organization score two was assigned to office bearer and zero score was assigned to the no member. The total score of each farmer was calculated and according to the score they were classified into three categories.

a. Score 2 and below - Low
b. Score 2 to 4 - Medium
c. Score 4 and above - High

Economic Motivation

The economic motivation refers to the motivation of an individual in all aspects leading to his development. The score was worked out by assigning score two to statement agree, score one to undecided and zero score to disagree. The total score was calculated by summing up scores of all statements and on the basis of the total score obtained by each member farmer, they were classified into three categories.

a. Score 2 and below - Low
b. Score 2 to 4 - Medium
c. Score 4 and above - High

State of Modernization

The state of modernization here refers to the recommended paddy production practices possessed by the member farmers. Each of the recommended paddy production practice possessed by the farmer was assigned one score. The total score was worked out and on the basis of the total score gained by each member farmer, they were classified into three categories.

a. Score 2 and below - Low
b. Score 2 to 4 - Medium
c. Score 4 and above - High

Dependent Variables

Knowledge

Knowledge refers to the farmer's understanding of different recommended Paddy Production Practices or it refers to the body of information understood and retained by the farmers about recommended Paddy Production Practices. In this study, all the important Paddy Production Practices were listed in consultation with the experts in the field. A total number of 22 common recommended Paddy Production Practices were selected based on the judgement of specialists. The relevant answers for these items were obtained with the help of package of practices and cereal crop experts of the Sher-e-Kashmir University of Agricultural Sciences and Technology, Kashmir. The knowledge level of the member farmers was worked out by assigning score two for complete knowledge, score one for partial knowledge and zero for no knowledge.

a. Score 7 and below - Low
b. Score 8 to 15 - Medium
c. Score 16 and above - High

Statistical Analysis

The data collected was processed, quantified, categorized and tabulated. The established parameters like mean, frequency, percentage and Karl Pearson's product movement correlation coefficient were calculated.

Results and Discussion

As per the Table-1, about 35.37% of the respondents from block Budgam had medium level of knowledge about the paddy recommended practices. This was due to the fact that the farm mechanization was slowly increasing in this region and farmers of this reason still were not exposed to improved agriculture implements used in the paddy cultivation. The farmers have more knowledge because of the reason that they have attended various types of trainings an demonstrations conducted by the Department of Agriculture under ATMA. The trained farmers also have better extension contacts which increases their knowledge level. The findings were in conformity with the findings of Farid *et al*., 2015 [2].

Table 1: Overall knowledge level of the respondents about recommended paddy production practices.

Knowledge level	Frequency	Percentage
Low (upto 7)	16	19.51
Medium (8-15)	29	35.37
High (16 and above)	37	45.12

The knowledge levels of farmers about various farm practices in paddy cultivation were presented in Table-2. It revealed that majority of the farmers from block Budgam belonged to high knowledge category followed by trained farmers belong to the medium knowledge category. Knowledge of farmers depends upon their personal, socio-economic characteristics. **.**Statistically there was a significant relationship between education and knowledge.It indicates that farmers level of education, training status, communication score and land holdings have strong positive relation with adoption of improved farm practices. Similar results were obtained by Farid *et al*., 2015 [2]. Fifty per cent of the member farmers had middle level education .There was a significant relationship between education and knowledge (r=0.221). It seems that comparatively higher education level of member farmers must have enabled them to make use of relevant literature and might have better contacts with extension agency.

Table 2: Knowledge level of the respondents about recommended paddy production practices

		Knowledge level					
		frequency			percentage		
S. No	Practices	low	medium	high	low	medium	high
1.	Paddy varieties	7	20	55	08.54	24.39	67.07
2.	Type of soil	2	8	72	2.44	09.76	87.80
3.	Methods of sowing	7	9	66	8.54	10.98	80.48
4.	Time of sowing	9	10	63	10.98	12.19	76.83
5.	Nursery Preparation	2	8	62	02.44	09.76	75.60
6.	Soil Testing	9	3	60	10.97	15.85	73.18
7.	Fertilizer Dosage	12	17	53	14.63	20.73	64.64
8.	Fertilizer Application	18	22	42	21.95	26.83	51.22
9.	Seed Rate	5	6	71	06.10	07.32	86.58
10.	Spacing	6	4	72	07.32	04.88	87.80
11.	Time of transplanting	3	6	73	03.66	07.32	89.02
12.	Seedlings per Hill	10	12	60	12.20	14.63	73.17
13.	Weed management	61	12	9	74.39	14.63	10.98
14.	Water management	7	9	66	08.54	10.98	80.48
15.	Disease management	67	8	7	81.70	09.76	08.54
16.	Pest management	68	8	6	82.92	09.76	07.32
17.	Harvesting	8	8	66	09.76	09.76	80.48
18.	Storage	2	4	76	02.44	04.88	92.68

Table 3: Relationship between personal, socio-economic characteristics and Knowledge level of trained farmers

S. No	Characteristics	Correlation Coefficient (r)	p-value
1	Age	0.316	0.0000*
2	Education	0.221	0.0065*
3	Family Size	0.172	0.0353
4	Annual Income	0.153	0.0616
5	Land Holding	0.189	0.0205
6	Experience in farming	0.255	0.0016*
7	Sources of Information	0.268	0.0009*
8	Social Participation	0.132	0.1074
9	Economic Motivation	0.298	0.0002*
10	State of Modernization	0.103	0.2097
* Significant at 5% level of significance			

Conclusion

The study reveals vast scope for the Developmental Departments to intervene and improve the knowledge level of farmers about agricultural practices. It can be concluded from above findings that majority of the respondents belonged to medium level of knowledge regarding recommended agricultural practices in paddy cultivation. Though, the paddy is cultivated by all the farmers in the study area but their scientific knowledge about the recommended practices in paddy crop is still in infancy stage. Hence it is imperative that State Department of Agriculture, University of Agricultural Sciences and other NGOs should make integrated and concerted extension efforts to provide required knowledge about recommended Paddy Production Practices to the paddy growers.

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