

## ADOPTION OF RECOMMENDED WHEAT AND COTTON PRODUCTION TECHNOLOGIES BY ATMA BENEFICIARY FARMERS

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### ABSTRACT

*The present study was under taken in Gandhinagar district of Gujarat state to know the adoption of recommended wheat and cotton production technologies by ATMA beneficiary farmers. The sample of study was 200 ATMA beneficiary farmers. The findings revealed that majority of respondents had medium level of adoption regarding wheat and cotton crop production technology. Age had negative and significant relationship with overall adoption of respondents. The variables viz; education, size of land holding, irrigation facilities, cropping intensity, sources of information, linkage with other development agencies, risk preference, cosmopolitaness, and knowledge had established positive and significant influence on adoption of recommended technologies among ATMA beneficiaries.*

**Keywords :** wheat production technology, cotton production technology, beneficiary farmers

### INTRODUCTION

The National Agricultural Technology Project (NATP) has framed for pilot testing new institutional arrangements for technology dissemination at district level and below, through establishment of Agricultural Technology Management Agency (ATMA) as an autonomous organisation providing flexible working environment. In Gujarat State, all districts have been selected for ATMA project as a part of the Innovations in Technology Dissemination (ITD) component of the project. The present study was conducted in Gandhinagar district of Gujarat state.

### OBJECTIVES

- (a) To measure the adoption level of ATMA beneficiary farmers regarding recommended wheat and cotton production technologies
- (b) To ascertain relationship between profile of ATMA beneficiary farmers and their adoption level regarding recommended wheat and cotton production technologies

### METHODOLOGY

The present investigation was conducted in Gandhinagar district. The present study was confined to ex-post facto research design as the independent variables

were already operated in study area. Gandhinagar district consist of four talukas and all four talukas were selected for the study. The major crops of the districts were cotton, wheat, castor, bajara and paddy of which cotton was at top followed by wheat. Five villages were randomly selected from each taluka. Thus, total twenty villages were selected. The list of ATMA beneficiaries cultivating cotton and wheat crop for last three years from each selected village was obtained from concerned Block Technology Manager and ten ATMA beneficiaries were selected from each village randomly. In all, 200 ATMA beneficiaries cultivating cotton and wheat were selected for the study purpose. The tool used for study was personal interview schedule. The data were collected through pre tested, well structured Gujarati version interview schedule through personal interview. The data were then compiled, tabulated and analysed with appropriate scale and techniques to get proper answer for the specific objectives of the study.

### RESULTS AND DISCUSSION

#### Adoption level of ATMA beneficiaries regarding wheat cultivation technologies

Adoption level of the ATMA beneficiaries regarding wheat cultivation technologies was ascertaining by asking questions pertaining to different package of practices of

wheat crop. Total 50 practices were included in study. The answers given by the ATMA beneficiaries for particular item were noted in schedule, A score of “one” was assigned to fully adoption and “zero” to partial/non adoption. Total in Table 1.

**Table 1 : Distribution of ATMA beneficiary farmers according to their level of adoption regarding wheat cultivation technologies** n = 200

Sr. No.	Level of adoption	Frequency	Percent
1	Low (Below 47 quotient)	36	18.00
2	Medium (47 to 71 quotient)	144	72.00
3	High (Above 71 quotient)	20	10.00
Mean = 59.00			S.D. = 11.78

A perusal of Table 1 reveal that vast majority (72.00 per cent) of the ATMA beneficiaries had medium adoption level regarding wheat cultivation technology followed by low and high with 18.00 per cent and 10.00 per cent, respectively.

#### Adoption level of ATMA beneficiaries regarding cotton cultivation technologies

To measure adoption level of ATMA beneficiaries about recommended cotton cultivation technology, farmers were asked 50 questions pertaining to cotton cultivation technology. On the basis of total adoption score obtained by the cotton growers, the adoption quotient was calculated. Mean and standard deviation of adoption quotient were worked out and on that basis, ATMA beneficiaries were grouped into three categories as mentioned in Table 2.

**Table 2 : Distribution of ATMA beneficiary farmers according to their level of adoption regarding cotton cultivation technologies** n = 200

Sr. No.	Level of adoption	Frequency	Percent
1	Low (Below 42 quotient)	44	22.00
2	Medium (42 to 62 quotient)	124	62.00
3	High (Above 62 quotient)	32	16.00
Mean = 52.08			S.D.= 10.36

The data depicted in Table 2 reveal that nearly three-fifth (62.00 per cent) of the ATMA beneficiaries had medium adoption level pertaining to cotton cultivation technology followed by 22.00 per cent and 16.00 per cent with low and high adoption, respectively.

score for each beneficiary was calculated and on the basis of that the ATMA beneficiaries were categorized into three groups viz., (1) low, (2) medium and (3) high using mean and standard deviation. The data in this respect are presented

#### Overall adoption level of ATMA beneficiaries

It is stated that recommended package of practices developed by scientists are an instrument for making agriculture a better and more profitable enterprise. In the present study, overall adoption refer to a decision to continue full use of such different wheat and cotton cultivation related recommended technologies combined together adopted by the ATMA beneficiaries. Total 100 questions related to wheat and cotton cultivation technology were included in schedule. Overall adoption score was worked out and using mean and standard deviation, ATMA beneficiaries were categorised in to three groups viz., (1) low, (2) medium and (3) high. The data regarding overall adoption level are given in Table 3.

**Table 3 : Distribution of the ATMA beneficiary farmers according to their overall adoption level** n = 200

Sr. No.	Level of adoption	Frequency	Percent
1	Low (Below 46 quotient)	42	21.00
2	Medium (46 to 65 quotient)	128	64.00
3	High (Above 65 quotient)	30	15.00
Mean = 55.54			S.D.=9.79

The data presented in Table 3 portray that majority of the ATMA beneficiaries (64.00 per cent) were found with medium level of adoption about recommended wheat and cotton cultivation technology in pooled while, 21.00 per cent and 15.00 per cent of ATMA beneficiaries had high and low level of adoption, respectively.

#### Relationship between profile of ATMA beneficiary farmers and their adoption level

An attempt was made in this investigation to ascertain the relationship between selected characteristics of

ATMA beneficiaries viz; age, education, land holding, annual income, occupation, farming experience, irrigation facilities, cropping intensity, sources of information, linkage with other development agencies, mass media exposure, social relationship skill, risk preference and cosmopolitaness with their overall adoption level. A statistical method; correlation coefficient was used to calculate relationship between the characteristics of beneficiaries and their adoption. The result is presented in Table 4.

**Table 4 : Relationship between characteristics of ATMA beneficiary farmers and their adoption level  
n = 200**

Sr. No.	Independent Variables	Coefficient of Correlation('r')
X <sub>1</sub>	Age	-0.204*
X <sub>2</sub>	Education	0.603**
X <sub>3</sub>	Land holding	0.229**
X <sub>4</sub>	Annual income	0.067 <sup>NS</sup>
X <sub>5</sub>	Occupation	0.003 <sup>NS</sup>
X <sub>6</sub>	Farming experience	0.023 <sup>NS</sup>
X <sub>7</sub>	Irrigation facilities	0.333**
X <sub>8</sub>	Cropping intensity	0.283**
X <sub>9</sub>	Sources of information	0.460**
X <sub>10</sub>	Linkage with other development agencies	0.559*
X <sub>11</sub>	Mass media exposure	0.06 <sup>NS</sup>
X <sub>12</sub>	Social relationship skill	0.070 <sup>NS</sup>
X <sub>13</sub>	Risk preference	0.505**
X <sub>14</sub>	Cosmopolitaness	0.238**

\*\* Significant at 0.01 level of significance

\* Significant at 0.05 level of significance

It is apparent from the data presented in the Table 4 that age of the ATMA beneficiaries had negative and significant correlation with their adoption. To epitomise the results of the study, it can be stated that young and middle aged farmers were more result oriented and having pragmatic decision making ability.

The adoption level of the ATMA beneficiaries regarding recommended technology had positive and significant correlation with their level of education as 'r' value (0.603) was positively significant at 0.01 level. Thus, it can be said that education is an important variable

which influence the adoption level of ATMA beneficiaries. Land holding of respondents had positive and significant correlation (r = 0.229) with their adoption level. This result implies that adoption level was higher among large farmer as compared to small and marginal farmers as large farmers can expend more money as they had better resources. The annual income, farming experience and occupation had no significant correlation with adoption. The irrigation facilities had positive and significant correlation with adoption. From the finding, it can be summarised that farmers having better irrigation facilitates had lower risk as water is critical input for crop production and risk is the basic factor upon which other motives and drives are built. The cropping intensity, source of information and linkage with other development agencies had positive and significant correlation with adoption level of ATMA beneficiaries. The mass media exposure and social relationship skill had no significant correlation with adoption level. The 'r' value (0.505) was found to be positively significant at 0.01 levels indicating positive and significant correlation between risk preference and adoption. The cosmopolitaness of ATMA beneficiaries had positive and significant correlation (r = 0.238) with their adoption level.

**CONCLUSION**

Majority of ATMA beneficiary farmers had medium level of adoption regarding wheat and cotton cultivation technology. In pooled analysis, majority of respondents were found with medium level of overall adoption. The independent variables viz., education, size of land holding, irrigation facilities, cropping intensity, sources of information, linkage with other development agencies, risk preference, cosmopolitaness, and knowledge had established positive and significant influence on adoption of recommended technologies among ATMA beneficiaries. Age had established negatively significant co-relationship. However, annual income, occupation, farming experience, mass media exposure and social relationship skills were failed to establish their effect on adoption behaviour.

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