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Study on knowledge about Organic Farming Practices in Soybean Crop under Agricultural Technology Management Agency (ATMA) programme in Guna District, of Madhya Pradesh

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Abstract:

The Agricultural Technology Management Agency (ATMA) is a society of key stock holders involved in agricultural activities for sustainable agricultural development in the district. It is focal point for integrating research and extension activities and decentralizing day to day management of the public agricultural technology system (ATS). Hence, the study was conducted with following specific objective and revealed that the data provides enough evidence the impact of ATMA programme on knowledge & adoption of adoption of organic farming practices in soybean crop. This clearly shows that as regard the adoption, there was a significant difference between beneficiaries and non-beneficiaries. The present study entitled 'Level of knowledge about Organic Farming Practices in Soybean Crop of farmers under Agricultural Technology Management Agency (ATMA) programme' of Guna District (Madhya Pradesh) covering Guna district, six purposively selected villages and 120 randomly selected respondents were selected to know impact of

ATMA on adoption as well as its associated correlates.

Keywords: ATMA Agricultural Technology Management Agency ATS Agricultural Technology System, Organic farming

Introduction

Madhya Pradesh is a leading state of India in terms of area and production of oilseeds and recognized as Soya State in the country. It alone contributes about 72 per cent and 65 per cent of the total area and total production of India respectively. It is popular cash crop giving pronounced yield and profit. Due to suitable agro-climatic condition and better price, soybean crop gets prominence in the cropping pattern of the cultivator of Madhya Pradesh.

In Madhya Pradesh, the state development of agriculture has launched a massive program to popularize the organic farming practices in cereals, pulses and oilseed crops. The major emphasis of agriculture development is on transfer of technology of organic farming to the farmers land and adopted by them. The knowledge and adoption of innovation involve the farmers' capacity to acquire and understand information about technologies and the abilities to translate this knowledge into action.

In real perspective, organic farming is an ancient are of Indian agriculture practices, which is relevant even in this modern era of chemical dominated agriculture. The art of organic aims at judicious and scientific use of natural phenomena and resources for not only immediate gain but also for preserving them for the posterity.

In Madhya Pradesh, organic farming is being implemented under the guidance of a team of experts consisting of scientists, environmentalists and food management personnel. Nutrients to the crops are

provided through green manuring, composts, phospho-composts and fermented preparations prepared from cow dung and urine. Pests are managed through the use of neem and cow urine based fermented preparations. Eight different ways of composting are recommended in Madhya Pradesh. Hence, present study was undertaken with the objectives of the study of the Study on knowledge about Organic Farming Practices in Soybean Crop under Agricultural Technology Management Agency (ATMA) programme and to study of the relationship between selected independent variables and dependent variables.

Objective

To determine the level of knowledge about the organic farming practices in soybean crop by beneficiary and non-beneficiary farmers under ATMA programme.

Material & Methods

Guna district of Madhya Pradesh was selected purposively for the present study. Guna district comprises of 5 blocks namely Guna, Aaron, Bamori, Raghogah and Chachora. Out of which three Guna, Aaron and Raghogah blocks was selected purposively for this study due to awareness and convenience of researcher. 6 villages will be selected through simple random sampling method for beneficiaries and for non-beneficiaries. 10 beneficiaries were selected from each of the village randomly. Similar numbers of non-beneficiaries were also selected randomly. The sample constituted 60 beneficiaries and 60 non-beneficiaries. Thus a total numbers of respondents for present study were 120.

Result & Discussion

Knowledge about scientific management of organic soybean cultivation on its beneficiaries and non-beneficiaries:

The data regarding knowledge of beneficiaries and non-beneficiaries regarding organic soybean farming under ATMA programme has been analyzed and resented in table-

Table 1: Distribution of Beneficiaries and Non-beneficiaries According to their Knowledge about Scientific Management of Organic Soybean Cultivation:

S. No	Practices	Beneficiaries			Non beneficiaries		
		FC	PC	IC	FC	PC	IC
A. Concept of Organic Farming							
1.	Do you have any knowledge about organic soybean farming practices?	42 (70.00)	18 (30.00)	0 (0.00)	6 (10.00)	24 (40.00)	30 (50.00)
2.	Do you know that organic soybean farming leads to more income and employment opportunity?	36 (60)	24 (40)	0 (0.00)	3 (5.00)	15 (25.00)	42 (70.00)
3.	Do you know organic food increase the longevity?	30 (50.00)	30 (50.00)	0 (0.00)	3 (5.00)	18 (30.00)	39 (65.00)
4.	Do you know organic soybean farming mitigates hazardous effects of chemicals?	36 (60.00)	24 (40.00)	0 (0.00)	6 (10.00)	24 (40.00)	30 (30.00)
B. Knowledge of Organic Manures And Crop Residues							
1.	What is the proper time and quantity of FYM required?	33 (55.00)	27 (45.00)	0 (0.00)	3 (5.00)	12 (20.00)	45 (75.00)
2.	What are the accurate method/procedure of FYM preparation?	36 (60.00)	24 (40.00)	0 (0.00)	6 (10.00)	12 (20.00)	42 (70.00)
3.	What is the way of crop residue	42	18	0	6	9	45

	incorporation in soil?	(70.00)	(30.00)	(0.00)	(10.00)	(15.00)	(75.00)
4.	What is organic/solid waste management?	45 (75.00)	15 (25.00)	0 (0.00)	6 (10.00)	12 (20.00)	42 (70.00)
5.	Which crop should be selected for green manuring and what is the sowing time?	51 (85.00)	9 (15.00)	0 (0.00)	3 (5.00)	9 (15.00)	48 (80.00)
6.	At which stage green crop should be incorporate in field?	36 (60.00)	24 (40.00)	0 (0.00)	6 (10.00)	24 (40.00)	30 (30.00)
C. Knowledge of Bio fertilizers							
1.	Do you know bio fertilizers by name?	39 (65.00)	21 (35.00)	0 (0.00)	3 (5.00)	18 (30.00)	39 (65.00)
2.	Do you know that bio fertilizers increase the crop yield?	42 (70.00)	18 (30.00)	0 (0.00)	6 (10.00)	15 (25.00)	39 (65.00)
3.	Do you know that bio fertilizers are cheaper than chemical fertilizer?	36 (60.00)	24 (40.00)	0 (0.00)	3 (5.00)	18 (30.00)	39 (65.00)
4.	Do you know that bio fertilizers help in fixing 'N' and change 'P' into soluble form which improve the crop yield?	42 (70.00)	18 (30.00)	0 (0.00)	3 (5.00)	21 (35.00)	36 (40.00)
5.	Do you know that bio fertilizers are useful for all types of soil?	39 (65.00)	21 (35.00)	0 (0.00)	6 (10.00)	21 (35.00)	33 (55.00)
6.	Do you know that bio fertilizers reduce the consumption of chemical fertilizer?	39 (65.00)	21 (35.00)	0 (0.00)	6 (10.00)	21 (35.00)	33 (55.00)
7.	Do you know that bio fertilizers are pollution free fertilizers?	36 (60.00)	24 (40.00)	0 (0.00)	6 (10.00)	12 (20.00)	42 (70.00)
8.	Do you know that bio fertilizers decrease the insect pest & disease infestation?	42 (70.00)	18 (30.00)	0 (0.00)	6 (10.00)	15 (25.00)	39 (65.00)
9.	Do you know that bio fertilizers improve soil fertility?	48 (80.00)	12 (20.00)	0 (0.00)	3 (5.00)	18 (30.00)	39 (65.00)
10.	Do you know that bio fertilizers remain in the soil for longer period and it has good effect on next crop also?	45 (75.00)	15 (25.00)	0 (0.00)	3 (5.00)	21 (35.00)	36 (60.00)
11.	Do you know that bio fertilizers become useless after its expiry date?	39 (65.00)	21 (35.00)	0 (0.00)	9 (15.00)	18 (30.00)	33 (55.00)
12.	Knowledge about recommended time of application of bio fertilizers?	48 (80.00)	12 (20.00)	0 (0.00)	3 (5.00)	15 (25.00)	42 (70.00)

(Figures in parenthesis indicate) **FC**- Fully correct, **PC**- Partially Correct, **IC**- Incorrect

The data in the table revealed the knowledge level of various respondents'. Considering knowledge of concept of organic farming, 70 % of beneficiaries had full knowledge of about organic soybean farming practices while only 10 % of beneficiaries had full knowledge of organic soybean farming practices. Considering aspect of knowledge of organic manures and crop residues 60 % of beneficiaries had full knowledge while a large share of non-beneficiaries did not had knowledge about right method of FYM

application. Further 60 % of beneficiaries had full knowledge as to in which stage green crop is to be incorporated in field while only 10 % of non-beneficiaries had full knowledge of it. Similar finding Bhole and Borkar (2002) revealed that majority of the farmers (84.00%) were having moderate level of knowledge and one tenth of them were adequately equipped with the knowledge about bio-fertilizers and appeared in high knowledge category.

Considering the aspect of knowledge of bio fertilizers 65% of beneficiaries had full knowledge of bio fertilizers while 30% of non-beneficiaries had partial knowledge of bio fertilizers .80% of beneficiaries had full knowledge of recommendation of application of bio fertilizers while a mere 5% of non-beneficiary processed full knowledge of recommendation of application of bio fertilizers.

Overall level of knowledge about scientific management of organic soybean cultivation by its beneficiaries and non-beneficiaries:

About overall knowledge, all the beneficiaries and non-beneficiaries were grouped into three categories viz., i) low ii) medium and iii) high. The data are presented in Table-

Table2 - Distribution of Overall Level of Knowledge about Scientific Management of Organic Soybean Cultivation by its Beneficiaries and Non-beneficiaries:

Attribute	Categories	beneficiaries		Non beneficiaries	
		Frequency	Percentage	Frequency	Percentage
Level of knowledge	Low	0	0.00	36	60.00
	Medium	15	25.00	20	33.33
	High	45	75.00	4	6.67
	Total	60	100.00	60	100.00

The data present in table showed that majority of the beneficiaries' 75.00 per cent found to pertaining high knowledge regarding various components of scientific management of organic soybean cultivation under ATMA programme followed by medium knowledge 25.00 per cent and low knowledge 0.00 per cent respectively. Munir Hussain Naik *et al.* (2009) revealed that 46.25 per cent of farmers had high knowledge about organic farming practices and 38.75 per cent were having low level of knowledge and only 15.00 per cent of them had low level of knowledge. Thus, it can be concluded that in study area, most of the beneficiaries found to pertaining high knowledge regarding various components of scientific management of organic soybean cultivation under ATMA programme followed by medium and low knowledge respectively.

On the other hand, data showed that majority of the non-beneficiaries 60.00 per cent found to pertaining low knowledge regarding various components of scientific management of organic soybean cultivation under ATMA programme followed by medium knowledge 33.33 per cent and high knowledge 6.67 per cent respectively.

Thus, it can be concluded that in study area, most of the non-beneficiaries found to pertaining low knowledge regarding various components of scientific management of organic soybean cultivation under ATMA programme followed by medium and high knowledge respectively.

The distribution of respondents according to their overall level of knowledge about scientific management of organic soybean cultivation reveal from Table that majority of the soybean growers (75.00%) were found in high level of knowledge followed by 25.00 per cent in high knowledge level, whereas meager percentage of soybean growers (0.00%) were found in low level of knowledge. Thus, it could be inferred that over half of soybean growers had high level of knowledge about organic farming practices in soybean crop. These findings were in line with the finding of Shiraj (2001) and Munir Hussain Naik *et al.* (2009).

The information about correlation between independent variables and level of knowledge is in **Table 3- Correlation between personal profile and knowledge of respondents about scientific management of organic soybean cultivation**

S. No	Independent variables	Coefficient of correlation (<i>r</i>)	
		Beneficiaries	Non beneficiaries
1.	Age	0.0493 ^{NS}	0.3628**
2.	Education	0.4226**	0.5050**
3.	Family size	0.0399 ^{NS}	0.0511 ^{NS}
4.	Land holding	0.3086*	0.3003*
5.	Annual income	0.0947 ^{NS}	0.0447 ^{NS}
6.	Innovativeness	0.2552*	0.2920*
7.	Extension contact	0.3427**	-0.1773 ^{NS}
8.	Social participation	0.3164*	0.0127 ^{NS}
9.	Mass Media exposure	0.3097*	0.3062*
10.	Economic motivation	0.3090*	0.3774**
11.	Risk preference	0.3042*	0.1450 ^{NS}

Significance Levels 0.01 (1 %) **

Significance Levels 0.05 (5 %)*

NS – Non Significant

The data manifested in Table- 4.4.1 revealed that the Education, extension contact of beneficiaries showed positive and significant relationship at 0.01 level of probability, whereas land holding, social participation, mass media exposure and risk preference showed positive and Significant relationship at 0.05 level of probability with their knowledge about scientific management. The remaining four variables namely age, family size, occupation and annual income did not establish any significant relationship with their knowledge about scientific management. Jagannathan et al. (2012) revealed medium level of knowledge. Innovativeness, education, mass media exposure, risk orientation, economic motivation in organic farming had a significant and positive relationship with knowledge level at 1 per cent level.

However, Age and education of non-beneficiaries showed positive and significant relationship at 0.01 level of probability, whereas land holding and mass media exposure showed positive and significant relationship at 0.05 level of probability with their knowledge about scientific management. The remaining six variables namely family size, occupation, annual income, extension contact, social participation, risk preference did not establish any significant relationship with their knowledge about scientific management.

Conclusion

Organic farming practices are new to the farmers and hence. It can be seen from the distribution in table, majority of the organic soybean beneficiaries had high level of knowledge about scientific management of organic soybean cultivation and the non-beneficiaries had low level of knowledge in most of the practices, the farmers need to be made well aware about the use of such practices so that he basic concept of organic farming and its application part could be made well known to the farmers.

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