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Knowledge of ATMA farm school beneficiaries on integrated crop management (ICM) technologies in maize

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ABSTRACT

ATMA farm School is powerful instrument for participatory research and knowledge management. The present study was conducted in Periyanayakkanpalayam block of Coimbatore district of Tamil Nadu to measure the knowledge level of ATMA farm school participants about integrated crop management technologies of maize. A total of 55 respondents were surveyed. Nearly 60.00 per cent of the respondents had medium level of overall knowledge on integrated crop management (ICM) technologies of maize. Out of 22 technologies on ICM in maize, more than fifty per cent of respondents had correct knowledge on the time of second top dressing of N, depth of sowing, total number of irrigations, chemicals used to control shoot fly, spacing for maize crop, size of ridges and furrows, number of ploughing, quantity of application of FYM (tons/ha), pre-emergence herbicide, insect causing the dead heart symptom and the quantity of micronutrient mixture formulated by state department of agriculture. Educational status (X_1) had significant and positive relationship at 1 per cent level of probability with overall knowledge of respondents on ICM technologies in maize.

Keywords: ATMA; farm school; beneficiaries; maize; ICM technologies

INTRODUCTION

Promotion of farmer to farmer extension, the most effective and fastest in transfer of any agricultural technology, is the idea of opening farm schools at the farm and village level under the extension reforms policy. Farm school is a powerful instrument for participatory research and knowledge management. These will serve as a mechanism for farmer-farmer extension at 3 to 5 focal points in every block. Also the farm schools provide the vital link between the progressive or achiever farmers and others in a village, organizing user or producer groups, linking farmers to markets, engaging in research planning and technology selection, enabling changes in

policies and linking producers to a range of other support and service networks (Sulaiman and Hall 2004, Rivera and Sulaiman 2009).

ATMA has been provided financial and operational flexibilities so that the extension agenda moves on the demand-driven lines in a given agro-ecological situation. This block level extension apparatus has been re-organized accordingly by establishing farm information and advisory centres (FIACs). This provides an inter-disciplinary advisory mechanism at this level. The farm advisory committees (FACs) consisting of the farmers in turn would provide their suggestions and feedback to these centers for making the extension programmes farmer accountable. Keeping this in view the present study was undertaken to analyze the knowledge of ATMA farm school beneficiaries on integrated crop management (ICM) technologies in maize.

MATERIAL and METHODS

The present study was conducted in Periyanayakkanpalayam block of Coimbatore district of Tamil Nadu. A total of 55 respondents were surveyed. A teacher made knowledge test was developed to measure the knowledge level of ATMA farm school participants about integrated crop management technologies of maize. The score of all the individual items were summed to get knowledge score of respondents. Based on the total score the respondents were classified into three categories namely, 'low', 'medium' and 'high' knowledge level using mean (X) and standard deviation (SD) as a measure of check.

All the important ICM technologies in maize were listed. The responses elicited from the respondents were quantified as full adoption (FA), partial adoption (PA) and non-adoption (NA) of the recommended technologies. A score of three for full adoption, two for partial adoption and one for non-adoption was given. The partial adoption was arrived at taking into account any deviation from the adoption of recommended technology. The respondents were grouped into 3 adopter categories as 'low', 'medium' and 'high' based on mean (X) and standard deviation (SD). The statistical tools viz percentage analysis, mean and standard deviation and simple correlation co-efficient were employed to analyze the data.

RESULTS and DISCUSSION

Distribution of ATMA farm school beneficiaries according to their overall knowledge on integrated crop management technologies in maize

It is evident from Table 1 that 58.18 per cent of the respondents had medium level of knowledge followed by 21.82 and 20.00 per cent having low and high level of knowledge respectively. Their low to

Table 1. Distribution of maize ATMA farm school beneficiaries according to their overall knowledge on integrated crop management technologies in maize (n= 55)

Knowledge level	#	Percentage
Low	12	21.82
Medium	32	58.18
High	11	20.00
Total	55	100.00

medium level of extension agency contact and medium level mass media exposure could be the reasons for the observed medium knowledge level on ICM technologies. The low knowledge level could be due to the conduct of only six classes during the entire crop season with respect to integrated crop management technologies and only one ATMA farm school per block. Hence more number of farm school classes with respect to ICM technologies with more ATMA farm schools per block should be there. This finding is in line with that of David and Asamoah (2011). Saravanan (2003) stated that majority (84.33%) of the respondents had knowledge on ploughing followed by quantity of seed rate (90.36%) and spacing adopted in maize crop (84.33%) and use of chemical control of aphids (78.71%). Jayanthi (2013) also found that majority of the respondents (70.83%) had medium level knowledge on management technologies in maize and this was due to the fact that majority of them were functionally literate and had school level education with medium level scientific orientation and extension agency contact.

Integrated crop management technology-wise knowledge among maize ATMA farm school beneficiaries

It can be seen in Table 2 that more than 90 per cent of respondents had correct knowledge on specifying the time of second top dressing of N (96.36%) and depth of sowing (92.73%) followed by total number of irrigations (81.82%). Out of 22 technologies on ICM technologies in maize, more than fifty per cent of respondents had correct knowledge of the time of second top dressing of N, depth of sowing, total number of irrigations, chemicals used to control shoot fly, spacing, size of ridges and furrows, number of ploughings, quantity of FYM (tons/ha), pre-emergence herbicide, insect causing the dead heart symptom and quantity of micronutrient mixture formulated by state department of agriculture.

Relationship of the profile characteristics of the beneficiaries of Maize ATMA farm school with their overall knowledge level

It can be observed from Table 3 that out of nine variables, educational status (X_1) had significant and positive relationship at 1 per cent level of probability with overall knowledge of respondents on ICM technologies in maize. This might be due to the reason that 50.00 per cent of the respondents had middle to collegiate level of

Table 2. Distribution of maize ATMA farm school beneficiaries according to their technology-wise knowledge on integrated crop management in maize (n= 55)

ICM technology in maize	Respondents	
	Frequency (#)	Percentage
Quantity of application of FYM (tons/ha)	36	65.45
Quantity of application of *Azospirillum* (packets/ha)	25	45.45
# ploughings done in the field	38	69.09
Size of ridges and furrows	40	72.73
Size of beds	22	40.00
Quantity of NPK (kg/ha)	21	38.18
Quantity of nitrogen to be applied before sowing basally	22	40.00
Seed rate/ha	21	38.18
Chemical for seed treatment to control stem borer	24	43.64
Spacing for maize crop	43	78.18
Depth of sowing	51	92.73
Quantity of micronutrient mixture formulated by State Department of Agriculture	29	52.73
Quantity of micronutrient mixture of TNAU	10	18.18
Name of the pre-emergence herbicide	35	63.64
Quantity of pre-emergence herbicide	16	29.09
Time of second top dressing of N	53	96.36
Total number of irrigations	45	81.82
Chemical used to control shoot fly	43	78.18
Name of the insect causing the dead heart symptom	29	52.73
Release of egg parasitoid *Trichogramma chilonis* to control stem borer	9	16.36
Chemical used to control the leaf blight disease	26	47.27
Chemical used to control the downy mildew disease	27	49.09

Table 3. Simple correlation coefficient of profile characteristics of the beneficiaries of maize ATMA farm school with their overall knowledge on integrated crop management technologies in maize (n= 55)

S/N	Variable	Correlation coefficient
X_1	Educational status	0.379**
X_2	Family type	-0.110^{NS}
X_3	Farming experience	-0.317*
X_4	Farming experience in maize	-0.183^{NS}
X_5	Farm size	0.134^{NS}
X_6	Area under maize	-0.085^{NS}
X_7	Occupational status	0.045^{NS}
X_8	Extension agency contact	0.161^{NS}
X_9	Mass media exposure	0.239^{NS}

**Significant at 1% level, *Significant at 5% level, NS= Non-significant

education. This would have helped them to realize, appreciate and understand the technologies imparted to them and might have contributed to their knowledge level. This study is in line with the findings of Naik (2008). Farming experience (X_3) had significant but negative relationship at 5 per cent level of probability with overall knowledge of respondents. This might be due to the reason that more than 80.00 per cent (83.64%) of the respondents had high level of farming experience and possessed traditional beliefs.

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