



Comparative Analysis of the Extent of adoption of Recommended ICM practices by the Participant and Non participant farmers of Rice FFSs

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ABSTRACT

The present investigation was carried out in Nellore district of Andhra Pradesh state during 2014-15 to compare the extent of adoption of ICM practices by the participant and non participant farmers of rice FFS. A total of 150 respondents were selected for the study out of which 75 farmers were participant farmers of rice FFS and the other 75 were non participants. The results of the study revealed that 42.67 per cent of the participant farmers were having medium level of adoption, followed by low (32.00%) and high (25.33%) levels. Whereas in case of non participant farmers majority (66.67%) of the respondents were having medium level of adoption, followed by high (21.33%) and low (12.00%) levels. Independent sample 't' test and Chi square tests were carried out to compare the extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFS. The Independent sample 't' test showed that there is significant (p value < 0.01) difference between participant and non participant farmers with regard to their extent of adoption of recommended ICM practices. The results of Chi square test revealed that there is significant association (p value < 0.01) between the 'participation in FFS' and the 'extent of adoption' of recommended ICM practices.

Key words: Extent of adoption, Farmer Field School, Integrated Crop Management.

The progress and prosperity of a nation to a very great extent depends on how far its agriculture sector is advanced and modernized. One of the main challenges that extension and research is currently confronting is effective transfer of agricultural technology. The Farmer Field School (FFS) is one of the most effective extension approaches ever developed. It is described as a platform and "School without walls" for improving decision making capacity of farming communities and stimulating local innovation for sustainable agriculture. The aim of the FFS is to build the capacity of farmers to analyze their production systems, identify problems, test possible solutions and eventually adopt the practices that is most suitable to their farming system. It is a season-long, field oriented and discovery-based learning opportunity. It comprises a group of 25 to 30 farmers who are facilitated by extension field staff in conducting various integrated crop management practices. The group of farmers who attend the field school weekly or fortnightly to learn through discoveries and simple experimentations. Simple experimentation helps farmers to improve their understanding of functional relationship for example pests-natural enemy population, dynamics and crop

damage yield relationship. In this clinical learning process, farmers develop the expertise that enables them to make their own crop management decisions. Special group activities encourage learning from peers, and strengthen communicative skills and group building.

Adoption of improved and innovative agricultural technologies by the majority of agriculturists is a pre-requisite to agricultural development in the developing countries like India where the economy is mainly based on agricultural sector. The special feature of FFS is field based learning and acts as a primary venue of learning and adoption by the farmers. So far a limited research was done on FFS programme and also the Department of Agriculture organized considerable number of farmer field schools on rice in Nellore district, hence an attempt was made to compare the extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFS.

MATERIAL AND METHODS

Nellore district of Andhra Pradesh was purposively selected as rice is extensively cultivated and also Farmer Field School on Integrated Crop

Management (ICM) was being successfully implemented in this district. Out of 46 mandals of Nellore district, 3 mandals were purposively selected based on the highest number of FFS on rice were conducted. Two villages i.e. one FFS village and another non FFS village were selected randomly from each selected mandal thus making a total of six villages of which three were FFS and three non FFS villages. From each FFS and non FFS selected villages, 25 respondents were selected by using simple random sampling procedure, thus making a total of 150 respondents for the study of which 75 farmers were FFS rice farmers and the other 75 were non FFS rice farmers. Independent sample 't' test and Chi square tests were carried out to compare the extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFS.

RESULTS AND DISCUSSION

Extent of adoption refers to measure how far a particular ICM practice was adopted by the individual correctly without any distortion of message. Hence an attempt was made to assess the extent of adoption of recommended ICM practices by the participant and non participant farmers in rice crop. The overall extent of adoption was studied and presented in Table 1.

Overall Extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFSs

In order to assess the overall extent of adoption of the recommended ICM practices by the participant and non participant rice FFS farmers, necessary data were collected and the respondents were categorized into three groups viz., low, medium and high by using mean and standard deviation and the results were presented in Table 1 and Fig.1.

An overview of Table 1 and Fig. 1 indicated that 42.67% of the participant farmers had medium level of adoption, followed by low (32.00%) and high (25.33%) levels. In case of non participant farmers majority (66.67%) of the respondents had medium level of adoption, followed by high (21.33%) and low (12.00%) levels.

Adoption level of participant farmers was more when compared to non participant farmers due to

FFS approach where own knowledge and experience expressed through group experimentation and discussion. Further, it was due to the observation of the results in experimental plot during FFS programme. Hence, the participant farmers might have got confidence on the new innovations of rice cultivation and by adopting the same in their fields. Besides, the continuous interaction of participant farmers with FFS officials and experts or subject matter specialists during the season long field study resulted in gaining knowledge and skills about rice cultivation might have also contributed to higher adoption of the improved practices. This finding was in tune with the findings of Natarajan (2004), Rajendrakumar *et al.* (2005).

Difference in the extent of adoption of participant and non participant farmers

Independent sample 't' test was carried out to assess the significant mean difference between participant and non participant farmers with regard to their extent of adoption of recommended ICM practices.

Null hypothesis (H_0)

There is no significant difference between the extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFS.

Empirical hypothesis (H_1)

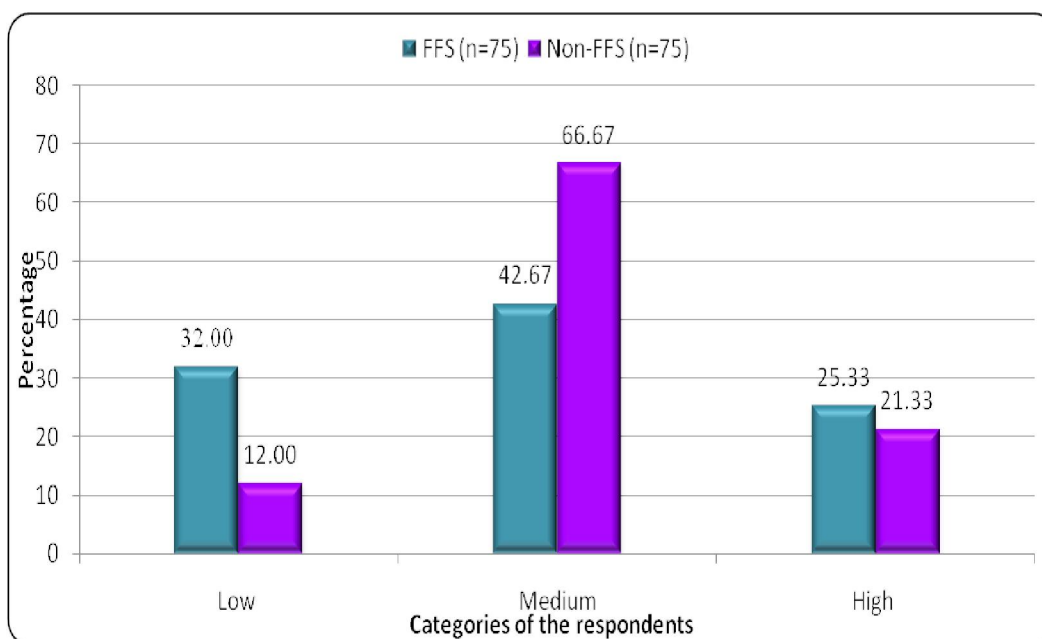
There is a significant difference between the extent of adoption of recommended ICM practices by the participant and non participant farmers of rice FFS.

It is clear from the Table 2 and Fig. 2 that the average extent of adoption of participant farmers was 117.25 with standard deviation 8.405 whereas the average extent of adoption of non participant farmers was 84.52 with standard deviation 10.965 and the 't' value was 20.518. The above results indicated that (p value < 0.01) there was significant mean difference between the participant and non participant farmers with regard to their extent of adoption at 1% level.

It might be due to the fact that after observing the results in experimental plots during FFS programme, the participant farmers might have got confidence on the new innovations of rice cultivation and hence adopted the same in their

Table 1. Distribution of respondents according to their overall level of extent of adoption.

S. No.	Category	Participant farmers (n ₁ =75)		Non participant farmers (n ₂ =75)	
		Frequency	Percentage	Frequency	Percentage
1.	Low adoption level	24	32.00	9	12.00
2.	Medium adoption level	32	42.67	50	66.67
3.	High adoption level	19	25.33	16	21.33
	Total	75	100.00	75	100.00
	Mean	76.63	55.24		
	SD	5.49	7.16		

**Fig. 1. Distribution of respondents according to their overall level of extent of adoption.**

fields. The continuous interaction of participant farmers with FFS officials and experts or subject matter specialists during the season long field study resulted in gaining knowledge and skills about rice cultivation might have also contributed to adoption of the same. Lack of technical guidance, lack of contact with extension personnel, low mass media exposure and extension participation might be the reasons for lower adoption of rice ICM practices by the non participant farmers. The findings were similar to that of Raghuvanshi *et al.* (2012), Rao *et al.* (2012a), Shabnam (2011) and Sreenivasulu (2011).

Association between participation in FFS and the extent of adoption

Chi square test was carried out to know the significant association between the extent of adoption of recommended ICM practices and participation of farmers in FFS.

It was evident from Table 3 that there was significant association between the extent of adoption of recommended ICM practices and participation of farmers in FFS at 1 % level since p value (0.004<0.01) for the corresponding chi square value 11.027, which means that there is significant influence of participation of farmers in FFS on the extent of adoption.

Table 2. Difference in the extent of adoption of participant and non participant farmers.

Dependent variable	Type of farmer	N	Mean	Std. deviation	t values	P value
Adoption	Participant farmers	75	117.25	8.405	20.518**	0.000
	Non participant farmers	75	84.52	10.965		

** : Significant at 0.01 level of probability

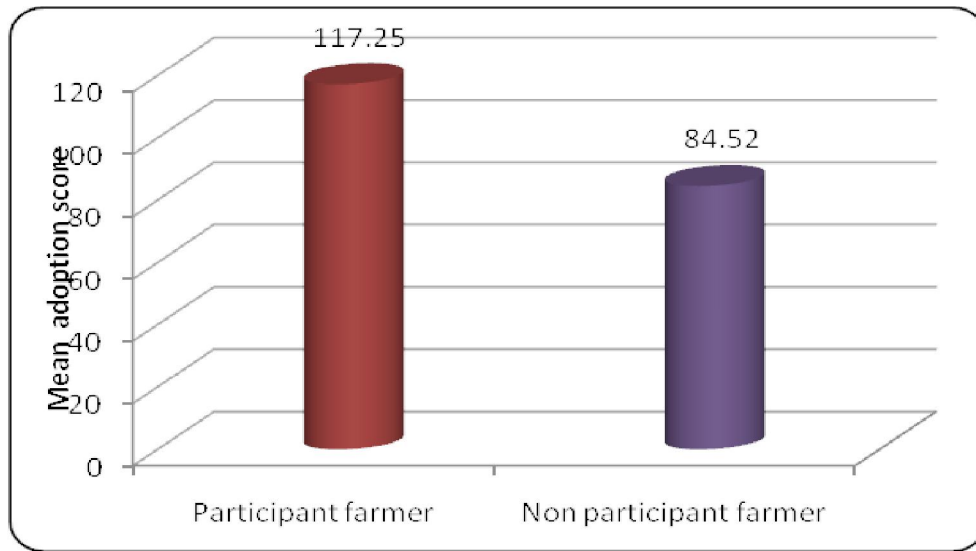


Fig. 2. Difference in the extent of adoption of participant and non participant farmers.

Table 3. Association between participation in FFS and the extent of adoption.

Participation in FFS	Extent of adoption			Total	Chi – square value	P value
	Low	Medium	High			
Participant farmers	2432.0%	3242.7%	1925.3%	75100.0%	11.027**	0.004
Non participant farmer	912.0%	5066.7%	1621.3%	75100%		
Total	3322.0%	8254.7%	3523.3%	150100.0%		

** : Significant at 0.01 level of probability

The figures mentioned in parenthesis indicate percentage

CONCLUSION

The department of agriculture has brought a positive change in the behavior and position of the farmers of the study area through FFS approach. It has increased extent of adoption of recommended ICM practices by the rice farmers through FFS approach. The investigation showed that there is significant difference in adoption of recommended ICM practices by the participant and non participant farmers of rice FFS. It was concluded that FFS

methodology is an effective extension tool to enhance adoption of recommended Integrated Crop Management (ICM) practices in rice crop.

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