Madras Agric J., 87(4-6): 200 - 202 April - June 2000
https://doi.org/10.29321/MAJ.10.A00443

Factors influencing the farmers' adoption of the maintenance practices of plant protection appliances

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Abstract : The Study was carried out in a randomly selected four Assistant Agricultural Officers (AAO) segments in V.O.Chidambaranar district. A sample of 30 owner farmers, those who owned sprayer were selected randomly. Data were collected through well structured interview schedule. Five maintenance practices and fifteen factors were selected through judges opinion. Results indicate that majority of the owner farmers had low level of adoption of maintenance practices. There was negative and highly significant relationship of knowledge of owner farmers with their extent of adoption of maintenance practices of plant protection appliances. (*Key Words : Owner farmers, Practices, Plant protection appliances, Factors, Adoption of maintenance).*

Plant protection appliances are essential to carry out the plant protection measures. Singh (1995) reported that promotion of engineering inputs in agriculture and training of farmers to handle them go a long way in modernising our agriculture. Patel (1991) observed that only some of the respondents used dry cloth and oil to clean the equipment. Moreover differential adoption of the maintenance practices were also reported. The option for intensive high yielding varieties necessitated the precise adoption of plant protection practices. Various factors were also found to influence the adoption. Past researchers also indicate that there is no systematic research on the maintenance of plant protection appliances in rice famring system. Realising this gap in research and accumulated felt needs at the grass-root level, the present study was formulated with the following specific objectives.

1.To study the extent of adoption of maintenance practice of plant protection appliances and

2. To find out the factors influencing the adoption.

Materials and methods

Based on the objective of this study it was required to select a district where the farmers using sprayers were maximum. Accordingly, V.O. Chidambaranar district with maximum achievement under sprayer distribution target was selected for the study. Maximum area under rice and maximum sprayers distribution were set as criteria for the selection of agricultural division. Based on the criteria, Srivaikundam was selectd. The same criteria was followed in the selection of block also. Accordingly, Srivaikundam block was selected for the study. Of the two Agricultural Officer's range in the selected block, viz., Srivaikundam and Eral, the former Agricultural Officer's range was chosen randomly for the study purpose. By adopting simple random sampling procedure, twenty five per cent of AAO groups i.e., two were selected. Each Assisant Agricultural Officer's group comprised of eight segments. They were arranged alphabetically and twenty five per cent of the segments i.e., two were selected from each group following simple random sampling procedure. As per the study objectives, the paddy growing farmers were required to be selected. Considering the in-depth nature of the study, a sample size of 80 paddy growing farmers were considered as optimum. The propotionate random sampling procedure was adopted for the selection of respondents. This resulted in the selection of 80 respondents.

After the data collection, the respondents were post stratified as 'Owners' meaning those who own sprayers and as 'Hirers' to indicate those who do not own the sprayer. For this study, the sample of 30 owner farmers alone were considered.

Based on the discussion with Agricultural Engineering Scientists and Extension Scientists, five maintenance practices were selected viz., cleaning of spark plug, removing of carbon, use of fuel and oil ratio, after use cleaning of sprayer and draining water used for cleaning after use. Based on the relevancy scores of judges, 15 variables were selected for the study. The extent of adoption for maintenance practice was calculated by adding all the adoption scores of maintenance practices and dividing the number of maintenance practices. Pearson corrleation coefficient was used to find out the related factors influencing adoption.

Table 1. Respondents categories on the extent of adoption of maintenance practices

S.No.	Category	Owner farmers Number (n=30)	Per cent
1	Low	12	40.00
2	Medium	9	30.00
3	High	9	30.00
	Total	30	100.00

Table 2. Correlation coefficient of characters with extent of adoption of maintenance practices of plant protection appliances of owner farmers

S.No.	Variables	Correlation co-efficient values of Owner farmers (n=30)
1	Education	0.043 NS
2	Occupation	-0.201 NS
3	Farm size	0.010 NS
4	Farming experience	-0.037 NS
5	Extension contact	-0.061 NS
6	Social participation	0.097 NS
7	Socio-economic status	0.137 NS
8	Scientific orientation	0.200 NS
9	Facilitative possession	0.023 NS
10	Perception on precision	-0.197 NS
11	Perception on clarity	-0.175 NS
12	Perception on completeness	-0.319 NS
13	Perception on understandability	-0.250 NS
14	Perception on information management	-0.331 NS
15	Knowledge about use and maintenance practices of plant protection appliances	-0.486**

** Significant at 0.01 level of probability, *Significant at 0.05 level of probability, NS Non-significant

Results and Discussion

A. Extent of adoption of maintenance practices

From the table 1, it may be inferred that majority (40.00%) of the owner farmers belonged to low adoption category and only (30.00%) of the respondents belonged to each of medium and high adoption categories. From this it may be concluded that owner farmers in general were low in the adoption of maintenance practices.

The reason for majority of respondents in low adopter category may be of the fact that most of the respondents would not have known about the maintenance aspects of sprayer.

B. Factors related to adoption of maintenance practices

It is seen from Table 2 that the correlation value of only one variable of owner farmers namely, knowledge about use and maintenance practices of plant protection appliances was negatively and highly significantly related with their extent of adoption of maintenance practices of plant protection appliances. It may be stated that the extent of adoption of maintenance practice of owner farmers was the function of their knowledge about use and maintenance practices of plant protection appliances only and independent of othe characteristics.

It may be concluded that lower the knowledge about use and maintenance practice of plant protection appliances of owner farmers higher would be their extent of adoption of maintenance practices irrespective of their education, occupation, farm size, farming experience, extension contact, social participation, socio-economic status, scientific

orientation, facilitative possession, perception on completeness, perception on understandability and perception on information management.

As there was positive and significant inter-correlation between knowledge about use and maintenance practices of plant protection appliances and extenstion contact, it may be stated that more knowledge about use and maintenance practices of plant protection appliances of owner farmers might be due to the extension contact. Such high extension contact would have consumed more time as reported by Anandarao (1988) who stated that more time wasted on extension contact was the undesirable indirect consequences for the desirable direct consequences of more extension contact. Hence those having less extension contact would find more time to procure facilities required for better adoption of maintenance practices. So naturally those who had higher extent of adoption of maintenance practices would be low in their knowledge about use and maintenance practices of plant protection appliances. This is how the negative influence of knowledge about use and maintenance practices of plant protection with extent of adoption may be explained.

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(Received : August 1998 ; Revised : September 1999)

Madras Agric. J., 87(4-6): 202 - 206 April - June 2000

Foliar application of nutrient on the seed yield and quality characters of nonaged and aged seeds of cotton CV. MCU 5

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Abstract : Seed cotton yield and seed yield were improved by DAP 2% foliar spray twice at 75 and 90 days after sowing. The per cent germination and root length of resultant seeds was also increased by DAP 2% spray. But boron 0.5% increased the shoot length of resultant seeds. The response of the resultant seed in stroage through accelerated ageing was also found to be similar. Where, the germination improvement was upto 15.5% in DAP spray seeds than control seeds. *(Key Words : MCU 5, Nutrient spray, Ageing, Seed cotton yield, Seed yield and Quality characters).*

Studies on the field performance of old seeds on their yield and quality characters of resultant seeds and their management practice is important asany seed has to be stored atleast for a period of nine months under ambient conditions under the certification programme. The individual seeds in a lot might be undergoing differential ageing depending upon its previous production histroy, structural soundness and viability at the time of harvest.

All the places where the seeds are produced may not have suitable storage environment. Hence, the seeds inevitably stored in these places will be deteriorating at a faster rate. When these stored seeds are sown in the field in the next season the differentially aged individual seeds though given a