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COMPARATIVE ANALYSIS OF THE PROFILE AND EXTENT OF ADOPTION OF THE USE PRACTICES OF PLANT PROTECTION APPLIANCES BY OWNER AND HIRER FARMERS

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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. The respondents were post stratified as 30 'owner farmers' those who owned sprayer and 50 'hirer farmers-those who did not own the sprayer. Data were collected with the help of structured interview schedule. The owner farmers differed significantly from hirer farmers in their profile with more score for owner farmers. There was significant difference in the extent of adoption of use adopters of use practices than the hirer farmers.

KEY WORDS: Owner farmer, Hirer farmers, Plant protection appliances, Profile, Adoption of use practices.

One of the main conclusions of the Indian Famine Commission in 1945 was that crop protection is an important factor in increasing production. It is estimated that the judicious use of pesticides can increase the production of most crop by 25-35 per cent (Bhavani and Anbarasu, 1992).

Patel (1991) reported that none of the farmers used the gas mask during application of pesticides. The adoption for protection high yielding varieties necessitated the precise adoption of plant protection practices. But there is a prima-facie evidence to question the use of plant protection appliances by farmers. Pest researchers also indicate that there is no systematic research on the use and maintenance of plant protection appliances in rice farming system. Hence, this pioneer attempt was made with the following specific objectives.

1. To study the characteristics of paddy growers using plant protection appliances and
2. To study their extent of adoption of use practices of plant protection appliances.

MATERIALS AND METHODS

V.O. Chidambaranar district (TamilNadu) with maximum achievement under sprayer distribution target was selected for the study. Maximum area under rice and maximum sprayer distribution was set as criteria for the selection of agricultural division. Based on the criteria, Srivaikundam was selected. The same criteria was followed in the selection of block also. Accordingly, 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 AAO'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 proportionate random sampling procedure was adopted for the selection of respondents. This resulted in the selection of 80 respondents. The data were collected using a well structured interview schedule. Based on the discussion with Agricultural Engineering Scientists and Extension Scientists, 11 use practices were selected for the study namely use of plant protection appliances, use of quantity of water, use of quality water, before use cleaning, before use water

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draining,quantity of chemicals, using correct quantity of plant protection chemicals, extent of filtering and extent of correct use of plant protection appliances.

The proportion of 'Actual/Recommended' for each of the practices was calculated and multiplied by 100 to arrive at the extent of practice adoption score in percentage. Such practice adoption scores for all the selected use practices were summed up and divided by the number of selected use and maintenance practices, to arrive at the extent of adoption score. The extent of adoption for use practice was calculated by adding all the adoption scores and dividing by the number of use practices.

RESULTS AND DISCUSSION

A. Profile of Owner and Hirer farmers

The profile of the respondents were analyzed and the results are given in Table 1. The difference between the mean values of owner and hirer farmers were highly significant for 10 characteristics and non-significant for the other 5 characteristics. It may be stated that the owner farmers and hirer farmers were different in their farm size, extension contact, socio-economic status, facilitative possession, perception on precision, perception on clarity, perception on completeness,perception on understandability, perception on information management and knowledge about use and maintenance practices of plant protection appliances. While they were not different in their education, occupation, farming experience, social participation and scientific orientation.

Based on the significant mean scores, it may be stated that the owner farmers possessed larger farm, had more extension contact,belonged to higher socio-economic status, owned more facilitative possession,exhibited better perception on precision,clarity,completeness, understandability and information management and possessed more knowledge on use and maintenance practices of plant protection appliance.

The hirer farmers possessed small farm, had

Table 1. The mean score and 't' values of the characteristics variables of Owner and Hirer farmers

S.No.	Variables	Mean Score: Owner farmer (n=30)	Mean Score: Hirer farmer (n=50)	Difference between the means	't' value	
1.	Education	5.067	5.160	-0.093	0.3837	NS
2.	Occupation	14.766	13.633	1.133	1.3858	NS
3.	Farm size	5.500	2.040	3.460	6.2766	**
4.	Farming experience	29.433	27.520	1.913	1.1322	NS
5.	Extension contact	74.567	49.180	25.387	7.0436	**
6.	Social participation	4.600	3.960	0.640	1.4669	NS
7.	Socio-economic status	60.476	48.773	11.703	4.3652	**
8.	Scientific orientation	27.100	27.200	-0.100	0.1373	NS
9.	Facilitative possession	31.667	22.820	8.847	4.6649	**
10.	Perception on precision	43.282	38.101	5.181	5.2923	**
11.	Perception on clarity	43.144	38.674	4.470	4.5151	**
12.	Perception on completeness	42.944	37.600	5.344	5.5847	**
13.	Perception on understandability	41.445	37.600	3.845	3.8135	**
14.	Perception on information management	42.443	37.965	4.478	4.9608	**
15.	Knowledge about use and maintenance practices of plant protection appliances	35.967	31.580	4.387	-8.8393	**

** Significant at 0.01 level of probability

NS Non-significant

less extension contact,belonged to low socio-economic status,owned less facilitative possession, exhibited less perception on precision,clarity,completeness, understandability and information management and possessed low knowledge on use and maintenance practices of plant protection appliances. Both the categories of the respondents were moderately educated, had medium level occupational status, belonged to higher farming experience and possessed low social participation.

The higher perception on precision,clarity, completeness and understandability on information by owner farmers might be due to their higher extension contact, whereas the low extension contact of hirer farmers would not have enabled them to develop such a perception on information management was the total effect of the perception on precision,clarity,completeness and understandability, the owner farmers who were more in all the above dimension would also be more in their perception on information management as reported. Such a differential perception on information management among the two categories of respondents was reported by Thangaraj (1995).

More knowledge about use and maintenance practices of plant protection appliances among owner farmers is understandable. Since such a knowledge would have been acquired by the owner farmers because of their more extension contact and also due to their higher perception on information management. The hirer farmers being low in all these characteristics naturally would have devoid of such facilities to acquire knowledge and hence they would have turned to be low in their knowledge.

B. Extent of adoption of use practices

As the sprayer was the only plant protection appliance available among the respondents its use was studied. The frequency distribution of owner and hirer farmers on their extent of adoption of use practices are given in Table 2.

When majority of the owner farmers (36.37per cent) were with medium level of adoption, it was so in high level of adoption (44.00 per cent)among hirer farmers. One- third of owner farmers were in the low adoption category,while about half of the hirer farmers (42.00 per cent) were found in this category. The mean of owner farmers was more than that of hirer farmers. The difference between the means was highly significant. This thereby indicates that the extent of adoption of use of practices by owner farmers was significantly different than that of hirer farmers. Based on the mean scores, it may be concluded that the owner farmers were better adopters of use practices than the hirer farmers.

Higher adoption of use practices by owner farmers than the hirer farmers may be explained as follows. The more adoption of use practices like safe use of pesticides, use of optimum spray fluid etc. This requires more facilities which involve cost. The higher socio-economic status of the owner farmers would have enabled them to go in for precise adoption. On the other hand, the hirer

Table 2. Respondents categories on the extent of adoption of use practices

S.No.	Category	Owner farmers		Hirer farmers	
		Number (n=30)	Per cent	Number (n=50)	Per cent
1.	Low	10	33.33	21	42.00
2.	Medium	11	36.67	7	14.00
3.	High	9	30.00	22	44.00
	Total	30	100.00	50	100.00
Mean		59.5517		49.8928	
Mean difference				9.6589	
't' value				5.94778**	

** Significant at 0.01 level of probability

farmers who were low in these characteristics (vide Table-1) naturally would be low in their extent of adoption of use practices. This is how the difference between the two types of respondents in their extent of adoption of use practices as seen would have been emerged. This finding derives support from that of Thangaraj (1995).

REFERENCES

BHAVAN, K.J., and ANBARASU, K. (1992). Standardization of crop Protection Equipments. Pest Management and Pesticides : Indian Scenario. Namrutha publications, Bombay.

PATEL, K.G. (1991). Safety Measures for Plant Protection in Mango Orchards. **Agril. Extn. Review,** March-April 9-13.

THANGARAJ, V.G. (1995). Comparative Analysis of Adoption of Population Maintenance Practices among Contact and other Farmers Growing Rice in erstwhile Tirunelveli District. M.Sc. (Ag.) Thesis; Tamil Nadu Agricultural University, Coimbatore.

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REASONS FOR NON-ADOPTION OF LOW COST TECHNOLOGIES IN PADDY

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ABSTRACT

A study was conducted with a sample of 100 farmers selected randomly from Trichy district. Farmers extent of adoption and reasons for non-adoption of Low Cost technologies (LCTs) in paddy were studies.The results indicated that majority of the farmers had medium level of adoption of LCT in paddy and the major reasons for non-adoption were non-availability of resources, lack of awareness, lack of knowledge on LCTs and non-availability of skilled labour.

KEY WORDS: Low cost technologies,Extent of adoption, Reasons for non-adoption, paddy growers.

The development agriculture is primarily due to the application of science and technology and making the best use of available resources. Several attempts have been made in this direction to increase the yield of food crops in India. But only after 1966, a new era had begun in Indian agriculture with significant advance in technology such as cost reduction (or) non-monetary inputs (or) cost technology.

Rice is the staple food for more than 75 per cent of the people in Asia. In Tamil Nadu, rice was grown in 23.38 lakh ha.with a production of 75.06 lakh m.ton. during 1994-95. The rice farmers increased the rice production steadly by adopting new and improved technologies. Any technology which involves cost reduction in the application of input are called are Low Cost technologies (LCTs). Though the LCTs are being recommended for increasing production at reduced cost, it is not known whether the same has reached all the categories of farmers, accepted and adopted as part of their farming. Hence the present study was taken up with the following objectives. 1. To find out the extent of adoption of LCTs by farmers in paddy. 2. To find out the reasons for non-adoption of LCTs in paddy.

Table 1. Distribution of respondents based on the extent of adoption of LCTs in rice cultivation

(n=100)

Sl.No.	Category	Number	Percent
1.	Low	23	23.00
2.	Medium	65	65.00
3.	High	12	12.00