Agri. Res. J, Kerala, 1973, 11 (2) *150—154*

A STUDY ON THE TECHNOLOGICAL CHANGES IN AGRICULTURE AND THE FACTORS AFFECTING THE ADOPTION OF IMPROVED PRACTICES

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The introduction of technological changes is the most important factor influencing the structure of Indian Agriculture. The tradition bound farmers hesitate in adopting all the recommended practices. A recent study conducted by the Bureau of Economics and Statistics has brought out that only one-fourth of the cultivators in Kerala had adopted one or more of the improved agricultural practices (Anon. 1971). Hence the present study was taken up to assess the extent of adoption of selected improved agricultural practices, the sources providing information to farmers and their efficacy in inducing the farmers to adopt new technology and the reasons for non-acceptance of the selected improved techniques.

Materials and Methods

The study was taken up during the year 1972 in two selected villages in the neighbourhood of the College of Agriculture, in Trivandrum District. Selection of holdnig was done at random from among the farmers and the required data were collected by interviewing them individually. In total 50 farmers were interviewed. 25 from each of the two villages. Pre–tested proformae were used to record the details. Information on the size of cultivable lands, crops raised and area under each crop, soil conservation practices, use of improved implements, seeds, fertilizers, green manures, insecticides, maintenance of cattle and poultry, details regarding association with co–operative societies, economic status of the farmers and their educational position were collected. The data were analysed statistically.

Results and Discussion

The main crops grown in the Villages surveyed were paddy, coconut and tapioca. The size of holdings ranged from 0.0648 ha. to 13.8 ha, the average being 0.8 ha. A higher acreage was noticed in only one among the 50 holdings and he owned 10.9 ha, of Kayal lands, 60 per cent of the farmers grew paddy and coconut, 30 per cent paddy alone and 4 per cent paddy and tapioca. A good percentage of the farmers utilised the available land to raise food crops and cash crops. Some farmers grew paddy alone presumably because cash crops could not be grown in these lands.

Sixty per cent of the holdings alone was irrigated while the remaining could not be irrigated due to lack of facilities despite the willingness of the farmers.

Of the total holdings surveyed 90 per cent of land holders knew the importance of soil conservation, 2 per cent had no faith in it and the rest had no idea of the same. Soil erosion problems were prevalent only in 6 per cent of the holdings surveyed. Contour bunding was the usual method of soil conservation adopted and it was successful.

Table 1

Size of holdings and Crops grown

Size groups	No. of holdings	No. of holdings under each crop		
		Paddy	Coconut	Tapioca
Below 10 are	4	15	4	1
From 10 to 19 are	1	24	7	1
From 20 to 29 are	8	3	4	3
From 30 to 39 are	2	1	10	3
40 are and above	35	7	20	9
Total	50	50	45	17

Seventyfour per cent of the total population surveyed had sufficient knowledge of improved implements, whereas the remaining 26 per cent had either limited or no information about the same. Even those who had the required knowledge of improved implements were not using the same regularly. The reasons attributed were smallness in the size of holdings, lack of money and non availability or difficulties in maintaining the improved implements. Similar reasons were also recorded by Savele (1966).

Ninetysix percent of farmers was satisfied with the improved seeds made available to them by the Department of Agriculture or through Blocks. The use of improved seeds was particularly high since the use of local strains was not profitable. I. R. 8, Annapurna and Jaya were the improved paddy strains commonly used. In tapioca M4, H226 and H165 were the popular varieties. In coconut ordinary West Coast Tall was most common. Limited number of T × D variety was also grown in some holdings. Four per cent of the farmers believed in the superiority of local varieties for consumption. They were also suspicious about the suitability and superiority of the recommended varieties for the locality.

Further they felt that the supply of improved seeds was inadequate and untimely. Regarding seed treatments only 8 per cent of the farmers treat the seeds before sowing though all of them were aware of the benefits of the same. This was due to non availability of seed treating chemicals and equipment at the required time.

All the cultivators were using the locally available green leaves as green manures. A few among them grew green manure plants like Glyricidia, Sannhemp etc. for the purpose. It was seen that the cultivators in the villages surveyed were fertilizer conscious. Fertilizer recommendations of the Department of Agriculture were adopted by 96 per cent of the farmers. Fertilizers like urea, ammonium sulphate, paddy mixture and coconut mixture were commonly used. The required fertilizers were obtained from Co–operative Society or from the FACT. Depots.

Only 2 out of the 50 farmers owned sprayers. Others get their required plant protection equipment from the Panchayat or the Co-operative Society. Some of them expressed difficulties of timely availability of chemicals and appliances for their use.

Amoung the 50 land holders surveyed 50 per cent owned one cow each, 12 per cent 2 cows each, 2 per cent 3 cows and another 2 per cent 4 cows. The rest did not own any. A good percentage of the cows was improved breeds mainly Jersey. Only 4 per cent pos sessed working bullocks. Others depended on hired bullocks for field operations. Buffaloes were maintained by 28 per cent of the land holders among them 18 per cent owned only one buffaloe each. Seventy four per cent of the farmers had small poultry units the number of birds in each unit ranged between 2 and 13. Most of them were improved breeds. Majority of the farmers were of the opinion that maintaining improved animals were profitable though the cost of maintenance was relatively high. Artificial insemination was being practiced by 82 per cent of the farmers who owned cows.

Fifty per cent of the farmers surveyed was members of Co-operative Societies. The rest of the farmers had no faith in socicties. Members of the societies persuaded others to be: ome members.

According to the survey conducted it was found that 66 per cent of the farmers got the information about the recent technological developments in Agriculture from News papers, pamphlets and booklets. The remaining personss got the information mainly from Akashavani, filmshows, demonstrations, exhibition and from friends.

Table 2.

Income details of Farmers

Annual income	Percentage of Farmers in each group
Below Rs 500/-	6
From Rs. 500 to Rs 999	10
From Rs. 1000 to **Ps.** 1499	10
From Rs. 1500 to Rs. 1999	14
From Rs 2000 to Rs 2499	6
From **Rs.** 2500 to Rs. 2999	12
From Rs. 3000 to Rs. 3999	10
From Rs. 4000 to Rs 4999	12
Ps. 5000 and above.	20

The income details of the farmers are given in Table 2. It is the gross income from both farm and non-farm sources. The total annual income of the individual holdings varied from Rs. 150 to Rs. 22,000/-. There were only 3 holdings with an annual income of less than Rs. 500/-. whereas the number of holdings whose annual income was Rs. 5000/- or above was iO, It was seen that the main source of income for the farmers was from farming and other sources were cattle, poultry, government or private jobs. Eighty four per cent of the farmers got their income from more than one source while 16 per cent got it from farming alone.

About 66 per cent of the farmers was literate. The educational standard varied from primary school to college level. • The quick and ready realisation of benefits of adopting improved technologies in agriculture could be attributed to the high level of literacy among the farmers.

The survey revealed that 84 per cent of the farmers was interested in adopting scientific agricultural practices. They were readily willing for the adoption of new methods. The remaining 16 per cent was not interested in scientific agriculture because in their view the traditional methods were simpler and less expensive. However some of them felt that the smallness in the size of holdings did not permit them to follow the new techniques.

Summary

With the object of evaluating technological changes adopted in the field of agriculture, in the Thiruvallam and Nemom Villages of Trivandrum District, an agro-socio-economic survey was conducted during the year 1972. In general the farmers were willing to adopt the new techniques in farming. But the extent of adoption was low. The reasons for the non-adoption of the newer and better technologies were the smallness in the size of area under each crop, financial inadequacy, non-availability or untimely nature of supplies of the required inputs and lack of proper demonstration. Availability of the requird inputs to the farmer is of great importance in inducing the farmers to adopt new technology.

Acknowledgements

The authors are grateful to the Dean, College of Agriculture, Vellayani for providing the required facilities to conduct the study.

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(M. S. *received: 18-10-1972*)