

## Relative Effectiveness of Information Sources in the Adoption of Technological Change and Rate of Diffusion of Technological Changes in Agriculture

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The study revealed that block extension agency was the prime source of information on hybrid cumbu to adopters whereas other (progressive) farmers were the prime source of information on hybrid cumbu to non-adopters. The role of mass media was relatively less in both the groups whereas the research station did not play any effective role in extension as far as non-adopters were concerned. It was also revealed that different technological changes took different gestation periods to get diffused among the cultivators.

The sources or channels of supply of information on improved technology greatly influence its adoption by farmers. Study on the role of various agencies in promoting technological change in agriculture will help in policy making decisions. This study was undertaken to evaluate the relative role of various agencies in supplying information about a particular technological change (hybrid cumbu) to the cultivators and to find out the pattern of diffusion of technological changes in farms growing hybrid cumbu (adopters), and in farms not growing hybrid cumbu (non-adopters).

### MATERIALS AND METHODS

The study was carried out in ten villages in Coimbatore taluk selected at random. From the list of farmers who had grown hybrid cumbu and non-hybrid cumbu, 60 farmers who

were growing hybrid cumbu (adopters) and 40 farmers who were growing non-hybrid cumbu (non-adopters) were selected at random at the rate of six farmers in each village in the first category and four farmers in each village in the second category. The data were collected by survey method and related to the agricultural year 1966-67 (Fasli, 1376).

### RESULTS AND DISCUSSION

I. Relative effectiveness of information sources: Farmers received information about new techniques in agriculture through various sources. These sources were classified under four categories viz., extension agency in agriculture, other farmers, mass media like press, radio broadcasts etc., and research stations. The role of different agencies in the dissemination of information about hybrid

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cumbu was analysed and presented in Table I.

TABLE I. Relative role of various agencies regarding use of hybrid seeds by farmers.

Sources	Adopters (Number)	Non-adopters (Number)
Extension Agency	38	13
Other farmers	14	25
Mass Media	7	2
Research Stations	1	—
Total	60	40

The study indicated that 63.3 per cent of the adopters secured information about hybrid cumbu through 'extension agencies', whereas the corresponding percentage of non-adopters was only 32.5. The fact that only about two-thirds of the adopters and only about one-third of the non-adopters had heard about hybrid cumbu through this source indicated the probable selective nature of work done by extension agency. The extension agencies could locate the progressive farmers in the villages because of their long experience and hence they probably contacted a large number of these farmers for disseminating the information on hybrid cumbu also. The non-adoption of this technological change by 32.5 per cent of the non-adopters, even though they were made aware of this innovation by this source, might be due to the non-effectiveness of the contact of this agency with these farmers.

'Other farmers' generally included the progressive cultivators in the locality. This group had disseminated information about hybrid cumbu to 62.5 per cent of the non-adopters and

23.3 per cent of the adopters. The fact that not only a majority of the non-adopters but also nearly one-fourth of the adopters were benefitted by this source indicated not only the importance of this source in disseminating farm information but also the fact that if some progressive farmers in the locality were made to adopt an improved practice, they in turn would act as a source of information for others in that locality. This source formed the major source of information to non-adopters and the second best source of information to the adopters.

Mass media had played only a lesser role in the dissemination of information on hybrid cumbu in both these groups. The low level of literacy of our farmers and the possibility of non-personal contact of this source might be the reasons for this. Research Stations did not play any effective role in disseminating information about hybrid cumbu to non-adopters (Table I).

Thus the results revealed that all the non-adopters were aware of hybrid cumbu. Nearly 95.0 per cent of the non-adopters had heard about hybrid cumbu through their personal contact either with the Block Extension Agency or with other progressive farmers. But these non-adopters did not take up the cultivation of hybrid cumbu even after a lapse of two years, since its introduction. Hence the reasons for non-adoption of this technological change by these farmers were studied. The results are given in Table II.

TABLE II. Reasons for non-adoption of technological change

Reasons	Number of farmers
Due to small size of the holding	17
Lack of adequate irrigation facility	8
Lack of credit	5
Not specific	5
No belief and not convinced	4
Due to high cost of hybrid seeds	1

Among the reasons advanced by the non-adopters for not taking up the cultivation of hybrid cumbu even when they were aware of it, smallness of the holding ranked first followed by inadequate irrigation facility on the farm. Lack of credit in time, no specific reasons and not convinced were some other reasons. Only one farmer reported high cost of hybrid seeds as a reason for non-adoption.

The study indicated that non-adopters were under a false notion that because of the smallness of their holdings they could not take up hybrid cumbu cultivation. These farmers could cultivate hybrid instead of local cumbu instead of local cumbu in the same area and get more profit. The reason of inadequate irrigation facility on the farm also would not stand good. As both the crops were of the same duration with similar agro economic practices, the water requirements would also be the same. So also the farmers could be convinced that high cost of hybrid seeds would be more than compensated by the additional returns.

• II. Rate of diffusion of technological changes in agriculture: Shetty (1966) had divided the time-lag between 'first hearing' of the innova-

tion and 'date of adoption' into a set of equal intervals and found the percentage of farmers reporting within a given time-lag. In this study, two innovations, viz., use of chemical fertilizers and plant protection chemicals were considered. The results of the study are presented in Table III.

TABLE III. Distribution of the adopters and non-adopters to the time-interval between 'first hearing of the innovation and 'date of adoption'

Time-interval (in years)	Use of fertilizers		Use of plant protection chemicals	
	Adopters	Non-adopters	Adopters	Non-adopters
0- 2	22	10	27	9
3- 5	23	11	26	17
6- 8	6	4	4	6
9-11	7	10	3	6
12-14	2	2	—	1
15-17	—	1	—	1
18-20	—	2	—	—
Total	60	40	60	40

The study indicated that adopters and non-adopters had taken a maximum time-lag of 14 years and 20 years respectively for using the fertilizers from their first hearing of this innovation. Use of plant protection chemicals had taken a gestation period of 11 years and 17 years to get diffused among the adopters and non-adopters respectively. Within a period of 5 years of first hearing, 75.0 per cent of the adopters used fertilizers whereas only 52.5 per cent of the non-adopters used them within a period of 5 years from their first hearing whereas only 65.0 per cent of the non-adopters used them. Thus, it could be seen that more number of adopters were putting into

practice any innovation within a shorter period from their first hearing than non adopters.

Among the two technological changes considered, use of plant protection chemicals had taken a lesser gestation period to get diffused among the farmers than use of fertilizers in both the groups. This might have been due to the general prejudices that were prevalent against chemical fertilizers during the earlier days of its introduction. The comparatively quick adoption of plant protection chemicals by more number of cultivators in both the groups might have been due to their utter necessity in combating and controlling the pests and diseases that were affecting the crops.

This study was in general agreement with Desai and Sharma (1966) who observed that within the same village there was a time spread of nearly eight years between the years when the farmers in the sample first heard about fertilizers. The time spread between the years when the farmers in the same village began the actual use of fertilizers was still longer, nearly 12 years. This study was also in agreement with Shetty (1966) who observed

that there were substantial difference among the farms in the rate of diffusion. Hence from this study, it was concluded that different technological changes took different gestation periods to get diffused among the cultivators and that no uniformity could be ascribed in the adoption and diffusion of a given technological change.

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