

do test demonstration farms work?

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For decades, Extension agents have used test demonstration farms to help inform farmers of new technology. However, according to Rogers and Havens, there's a need to learn more about the effectiveness of demonstrations in securing adoption and in changing farmers' attitudes.¹ Hartman and Brown² report an influence of 17 demonstration farms on surrounding farmers. The largest variance was explained by personal characteristics of the farmers, their relationship with other individuals and organizations, and the technological level of the farms. Other studies over the years do show that the test demonstration farm is an effective teaching tool.

Unanswered Questions

Although the test demonstration farm is a well-accepted teaching method for Extension personnel, many questions remain unanswered. How effective are such farms in the diffusion process? What characteristics of the farm or farmers make some demonstrations more successful than others in helping with the diffusion process? How can this teaching method be made more effective in its present use? Simeral³ built his study on the work of Hartman and Brown using a specific kind of test demonstration farm in Ohio.

To help find answers to these and other questions, the Ohio Agriculture Research and Development Center sponsored a study to evaluate the effectiveness of the Ohio Rapid Adjustment Farms (test demonstration farms). During the past several years, the Ohio Cooperative Extension Service, in cooperation with the Tennessee Valley Authority and local supporting agencies, has sponsored a Rapid Adjustment Farm program in southeastern Ohio.

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Purposes of Program

The purposes of the Rapid Adjustment Farm programs are manifold and much broader than just the rapid adjustment of the farm enterprise of the farm family involved. The seven major purposes are:

1. To help selected young farm cooperators in setting family goals and to help them expand their farm operations.
2. To increase crop yields through improved soil fertility and cultural practices. This includes increased use of recommended amounts of fertilizer, lime, seeds, and chemicals.
3. To improve livestock production by selecting quality breeding stock and adopting sound management practices.
4. To determine and use available farm resources that will return maximum income.
5. To help Extension, teaching, and research faculty members keep abreast of on-the-farm problems.
6. To demonstrate to neighboring farms, as well as business, industry, and political and civic leaders, that applying modern technology to farming pays dividends.
7. To increase the wealth from farming in local communities and to stimulate the growth of the communities.

The Rapid Adjustment Farm may be thought of as a large-scale demonstration program. The total farm enterprise is involved.

Study's Concern

This study was primarily concerned with the relative effectiveness of the Rapid Adjustment Farm in southeastern Ohio as a means or device for transferring technology and management practices to other farmers in the community and to identify the variables related to this transfer.

Diffusion Variables

From related literature, it was thought that if diffusion was occurring it might be affected by some of the following variables:⁴

1. The ease with which the farm may be viewed from a community-traveled highway.
2. The farmer being an opinion leader in the community (as seen by other farmers).
3. The amount of mass media coverage of the demonstration farm and the number of tours and educational events held there.

4. Proximity of respondent to the demonstration farm.
5. Respondent having been on the demonstration farm.
6. Number of community groups to which respondent and demonstration farmer both belong.
7. Respondent being a personal friend of demonstration farmer.
8. Size and scope of respondent farm.

In this study, 30 dairy farmers were interviewed in each of 3 counties where a dairy Rapid Adjustment Farm had been operating for 5 years. Dairy farmers were selected because there were three dairy Rapid Adjustment farms in three counties in the same geographical area of the state. The 30 dairy farmers were selected randomly from a list of all dairymen (55, 150, and 158) in the 3 counties where the dairy Rapid Adjustment Farms were located.

Other Variables

Beside the variables mentioned above, we were interested in whether: practices were being adopted that were being demonstrated on the Rapid Adjustment Farms, if ideas had been secured from the Rapid Adjustment Farm, and if ideas being demonstrated were viewed by other farmers as practical.

Findings

The average dairy farm in this study had adopted less than half (7 of 17) the practices conducted on the dairy Rapid Adjustment Farm and none of the respondents had adopted all 17 practices that were included in the study. Three had adopted 14 practices, while 6 farmers hadn't adopted any.

Farmers were more likely to think the practices demonstrated were practical for their own farms when:

Table 1. Relationship of practicality and visiting the farm.

	Total N	Viewing practices as:			Total %
		Not practical %	Maybe practical %	Practical %	
Respondent having been on farm	34	5.9%	26.5%	67.6%	100%
Respondent not having been on farm	17	23.5	47.1	29.4	100
Total	51				

Chi-square 7.45.
Statistically significant at .02 level.
Cramer's V=0.29 (degree of relationship).

(1) they were personal friends of the demonstration farmer or (2) they'd visited the demonstration farm.

As can be seen in Tables 1 and 2, nearly 68% of the farmers who had been on the Rapid Adjustment Farm and 70% of those who were friends of the demonstration farmer thought that the practices carried out were practical. This is compared to 30% of the farmers who hadn't been on the farm and 28% of those who weren't a friend of the farmer who felt practices were practical.

Farmers were more likely to get ideas from the Rapid Adjustment Farm when they: (1) viewed the Rapid Adjustment farmer as an opinion leader, (2) had been on the Rapid Adjustment Farm, or (3) were in a similar community group with the Rapid Adjustment farmer.

Table 2. Relationship of practicality and being farmer's friend.

	Total N	Viewing practices as:			Total %
		Not practical %	Maybe practical %	Practical %	
Friend of Rapid Adjustment farmer	33	3.0%	27.3%	69.7%	100%
Not friend of Rapid Adjustment farmer	<u>18</u>	27.8	44.4	27.8	100
Total	51				

Chi-square 10.82.
Statistically significant at .01 level.
Cramer's V=.46 (degree of relationship).

The percentage getting ideas from the farms were greatly influenced by these factors. Table 3 shows that 77% of those who viewed the Rapid Adjustment farmer as an opinion leader got ideas from him compared to 40% who didn't view the farmer as an opinion leader. As seen in Table 4, two-thirds of those having been on the Rapid Adjustment Farm got ideas to use, while only 22% of those who hadn't been on the farm said they got ideas from the Rapid Adjustment farmer.

Table 3. Relationship of learning and considering the farmer an opinion leader.

	Total N	Got ideas from Rapid Adjustment Farm	
		Yes %	No %
Respondent views Rapid Adjustment farmer as an opinion leader	17	76.5%	33.5%
Respondent doesn't view Rapid Adjustment farmer as opinion leader	35	40.0	60.0
Total	52		

Chi-square 4.72.
Statistically significant at .03 level.
Cramer's V=0.23 (degree of relationship).

Table 4. Relationship of learning and visiting the farm.

	Total N	Got ideas from Rapid Adjustment Farm	
		Yes %	No %
On farm	34	67.6%	32.4%
Not on farm	18	22.2	77.8
Total	52		

Chi-square 4.59.
Statistically significant at 0.03 level.
Cramer's V=.38 (degree of relationship).

The data in Table 5 are based on only 1 county since the Rapid Adjustment farmers in the other 2 counties weren't in many organizations. All of the farmers interviewed who were in similar groups with the Rapid Adjustment farmer said they got ideas from the Rapid Adjustment farmer. Of the six who didn't, only one was in any group with the Rapid Adjustment farmer.

Summary

A primary conclusion that can be drawn from the study is that the Rapid Adjustment Farm is effective in helping diffusion occur if there's a great deal of interaction between the demonstration farmer and other farmers in the community

Table 5. Relationship of learning and being in similar groups.

	Getting ideas from Rapid Adjustment farmer	
	Yes N	No N
Not in group	0	5
In one group with Rapid Adjustment farmer	3	0
In two or more groups with Rapid Adjustment farmer	9	1
Total	12	6

Chi-square 13.95.

Statistically significant at .001 level.

Cramers V=0.88 (degree of relationship).

The personal characteristics of the Rapid Adjustment farmer and his relationship with other individuals and organizations, plus the fact that other farmers have visited the test farm, are the primary factors influencing the rate of diffusion. These conclusions are supported by the Hartman and Brown study in Pennsylvania.

Some variables that previous research and literature suggested would affect the amount of diffusion didn't prove important in this study. These variables were: (1) age of respondent farmer, (2) distance of respondent from test farm, (3) observability of test farm, and (4) adoption level of respondent farmer.

Although the test demonstration farm is a well-accepted teaching method for Extension personnel, many questions remain unanswered. . . .

Implications

Some implications for Extension include:

1. When establishing test demonstration farms, remember certain characteristics of the farmer enhance diffusion of technology. The farmer should be a man who makes friends easily, is active in community groups, and is looked to for advice.
2. All possible means should be used to encourage other farmers to visit the test demonstration farm.

If the proper demonstration farmer can be found and the other farmers have an opportunity to see the farm personally, the test demonstration farm can be effective in helping diffuse new technology among other farmers in the community

Footnotes

1. Everett M. Rogers and A. Eugene Havens, *The Impact of Demonstrations on Farmers' Attitude Toward Fertilizer*, Research Bulletin 896 (Wooster: Ohio Agricultural Experiment Station, December, 1961).
2. Joel A. Hartman and Emory J. Brown, *Evaluation of a Five-Year Program in Two Pennsylvania Counties*, Extension Studies No. 43 (College Park: The Pennsylvania State University, College of Agriculture, Extension Service, 1970).
3. Kenneth D. Simeral, "The Rapid Adjustment Farm Program's Influence on Other Farms in the Community" (Master's thesis, The Ohio State University, Department of Agriculture Education, Columbus, 1974).
4. Everett M. Rogers and F. Floyd Shoemaker, *Communication of Innovation* (New York: The Free Press, 1971).