

8-1-1965

Differential effectiveness of test-demonstration farmers

Kenneth P. Wilkinson

Wilfrid C. Bailey

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Differential Effectiveness Of Test-Demonstration Farmers

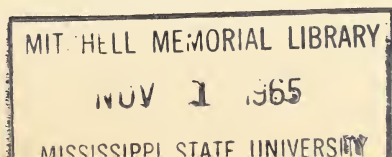
KENNETH P. WILKINSON and WILFRID C. BAILEY

Mississippi State University

AGRICULTURAL EXPERIMENT STATION

HENRY H. LEVECK, Director

STATE COLLEGE



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Differential Effectiveness of Test-Demonstration Farmers

Kenneth P. Wilkinson and Wilfrid C. Bailey¹

INTRODUCTION

In 1903, Seaman A. Knapp established a demonstration farm in Terrel County, Texas. Since that time, result demonstrations have become one of the educational techniques more widely used by agricultural workers all over the world. The assumption behind result demonstrations is that seeing is believing. If a farmer can be persuaded to use a new practice successfully, his neighbors will see it and try it. Since 1935, the Tennessee Valley Authority and the land-grant colleges have used test-demonstration farms as a means of introducing new fertilizers and improved fertilizer practices. The operators of test-demonstration farms receive fertilizer materials from TVA at incentive prices and managerial guidance from the cooperating extension services for a complete development of farm and home resources.

This project was a part of a Valley-wide approach by TVA and cooperating land-grant colleges to evaluate and intensify the over-all effectiveness of the test-demonstration program.² The initial steps in this project were a study of the development of the program in Mississippi,³ a survey of literature on result demonstrations,⁴ and development of techniques for the evaluation of the effectiveness of the program in Mississippi counties.⁵

Objectives

The objective of this phase of the research was the development of improved criteria for the selection of demonstrators.

This required (1) measurement of the extent to which demonstrators influence farmers and (2) delineation of social and social psychological factors which contributed to the degree of influence. Understanding of these factors will form the basis for selection of potentially more effective demonstrators in the future.

A demonstration program assumes that new practices and ideas can be diffused throughout a community if they are introduced by key farmers in the area. The change agent, in this case, the cooperative test-demonstration program between Mississippi State University and TVA, channels educational efforts through the demonstrator, rather than attempting to involve every farmer directly. Thus, the choice of demonstrators is crucial to program success.

The selection of an effective demonstrator may be based on criteria which are not always obvious to the casual observer. Random choice of individuals who appear to be outstanding and who are willing to participate has not proven completely adequate. Many times an apparently outstanding individual was an ineffective demonstrator, while often an unlikely prospect proved to have considerable influence upon his neighbors. A check list of

³Wilfrid C. Bailey and Andrew W. Baird, **Progress Report in Evaluation of the Test-Demonstration Program in Mississippi**, Preliminary Reports in Sociology and Rural Life No. 6, State College: Mississippi Agricultural Experiment Station, 1959; Wilfrid C. Bailey and Andrew W. Baird, **Evaluation of the Test-Demonstration Program in Mississippi: 1935-1958**, State College: Mississippi Agricultural Extension Service, 1959.

⁴Wilfrid C. Bailey and Andrew W. Baird, **Test-Demonstration and Related Areas: Review of Literature**, Preliminary Reports in Sociology and Rural Life No. 11, State College: Mississippi Agricultural Experiment Station, 1960.

⁵Wilfrid C. Bailey, "Effective Education: Methods and Procedures," **Proceedings of the Agricultural Economics and Rural Sociology Section of the Association of Southern Agricultural Workers**, Annual Meeting, Jackson, Mississippi, February 6-8, 1961. Vol. 1.

¹Department of Sociology and Rural Life, Mississippi Agricultural Experiment Station.

²This report is a part of a larger study, "Factors Related to the Selection of Farmers and Demonstrations to Carry Out the Objectives of the TVA Test-Demonstration Program in Mississippi," conducted by the Department of Sociology and Rural Life of the Mississippi Agricultural Experiment Station and the Division of Agricultural Development of the Tennessee Valley Authority in cooperation with the Mississippi Agricultural Extension Service.

personal traits and attributes which make for an influential demonstrator in all situations was needed.

Effectiveness of demonstrations may be analyzed in terms of social conditions and characteristics contingent with the demonstration situation. This technique requires less time than more precise psychometric testing of demonstration farmers' personalities and takes account of situational influences which are not the same at all times. Four groups of influences were investigated in the present study as correlates of effectiveness. These were (1) characteristics of the demonstrator, (2) characteristics of his audience, (3) characteristics of the demonstration, and (4) characteristics of the community in which the demonstration was located. Later in the study, principles for the selection of demonstrators were drawn from analysis of these factors.

Methodology

Interviews were obtained from active test-demonstration farmers in four Mississippi counties. They were selected by the project leader in consultation with TVA and Mississippi State University Extension staff members as representative of test-demonstration counties in Mississippi. They included Prentiss and Itawamba Counties within the Tennessee Valley and Forest and Copiah Counties outside. Active demonstrators were defined as those who had participated in the program⁶ for two or more years or those who had not been graduated from the program for more than two years. Twenty-nine demonstrators were interviewed. In addition to the demonstrators, a sample of audience farmers was also selected. Five farms were randomly chosen from all farms within two miles of each demonstrator. Each audience farm had 10 or more acres and annual gross sales of \$50 or more or had less than 10 acres and gross sales of \$250 or more. Usable interview schedules were obtained from 136 audience farmers.

Two types of interview schedules were used. Audience and demonstrator schedules included identical questions on demographic and socio-economic family characteristics and on adoption of recommended farm practices. In addition, audience farmers were asked a series of questions designed to measure the influence of the demonstration program upon their adoption of specific farm practices. The demonstrators were questioned on their knowledge of and involvement in the test-demonstration program.

Characteristics of the Respondents

Demonstrations are normally directed at delineated audiences. From past experience, the young aggressive demonstrator is expected to have little influence upon the practices of his older more established neighbors. Similarly the wealthy planter is seldom affected crucially if his neighbors at a lower socio-economic level adopt a new technique. The flow of communication within a community involves persons who interact as relative equals. The problem for the person who selects the demonstrator is to identify factors which establish or limit equality of interaction.⁷

Gabriel Tarde and other sociologist have maintained that the flow of communication, particularly that bearing new information, is from higher to lower socio-economic echelons.⁸ This may be accepted with one qualification. The flow of information within a locality group is from persons of higher status to persons of lower status *within* a group of relative equals. Serious questions may be raised to the proposition that the very wealthy

⁶The usual participation period for a farmer in the test-demonstration program is five years.

⁷For pertinent literature on communication of agricultural practices, see Bailey and Baird, 1960, *op. cit.*; Herbert F. Lionberger, *Adoption of New Ideas and Practices*, Ames: The Iowa State University Press, 1960; and Everett M. Rogers, *Diffusion of Innovations*, New York: The Free Press of Glencoe, 1962.

⁸Gabriel Tarde, *The Laws of Imitation*, New York: Henry Holt, 1903.

transmit new ideas directly to the very poor. This applies to attitudinal differences, as well as to socio-economic differences. The highly progressive farmer or innovator influences the moderately progressive farmer, who in turn influences his more conservative neighbor, and so on to the highly conservative farmer or laggard. In each case, the flow is from higher to lower, more to less, but always between persons or groups who are more alike than different.

The demonstration program uses a two step flow of communication. The first step is the direct formal dissemination of information from the land-grant college to the demonstration farmer. This is interaction between dissimilar communicants. Since communication moves most freely between similar communicants, it must be reckoned that the demonstrator's acceptance and adoption of recommendations through the test-demonstration program is motivated by factors other than a recognition of similarities or a personal relationship. The relationship is formal, and therefore it is unnecessary that the communicants be similar in either personal characteristics, motives, or attitudes.

The second step in the flow of information is informal. This is the interchange between the demonstrator and his neighbors or audience. At this point, similar motives, attitudes, and personal characteristics become crucial. The demonstrator and his audience must possess sufficient social characteristics in common so that communication is easily accomplished and relatively free of formality. Such a relationship is not necessarily based upon conscious recognition of ties, such as kinship for instance, although this may be desirable. Rather, interaction is facilitated if the demonstrator and his audience are similar in age, education, social background, and economic standing.

The importance of similarity in informal interaction has been demonstrated by studies dealing with sources of farm information.⁹ Friends and neighbors are

consistently named as important sources for one another. Complete dependence upon friends and neighbors for information, however, is correlated with the tendency to make few actual changes in farm practices. In such cases, the flow of communication is circular; the communicants rely upon one another, and outside sources are neither recognized nor exploited. The demonstration program attempts to break the chain, so to speak, by interjecting new information into the circle of communication through the demonstrator.

Three prerequisites to success at this stage of the communication process are (1) that a strong motivational tie exist between the change agent and the demonstrator, (2) that the demonstrator be adequately instructed with respect to new information, and (3) that a basis for the communication of new information between the demonstrator and his audience exists potentially. The third requirement, which is the central focus of this study, may be met when two conditions exist. First, the demonstrator must be an accepted participant in the local communication cycle, and second, the demonstrator must be slightly atypical of the group. His atypicality must not, however, be so marked as to isolate him from the cycle of informal communication.

The demonstrators interviewed differed considerably as a group from the sample of audience farmers. Table 1 shows important differences on a series of personal and economic characteristics. For instance, a greater percentage of demonstrators lived on hard-surface roads in houses rated by the interviewer as being in good condition. A greater percentage of demonstrator families had preschool children, children in school, and other children at home. The median household size of the demonstrator group was longer, with the heads and homemakers of the households being younger and more highly educated.

With the exception of median nonfarm

⁹Rogers, *op. cit.*, pp. 208-253.

income, the demonstrators scored higher on all measures of family financial status, especially with respect to gross farm income. Differences in livestock sales primarily accounted for the higher farm income. Demonstrators had a median annual income of \$4,856 from livestock sales while audience farmers had \$681. Demonstrators had medians of 74 acres in cropland, 73 acres in pasture, 49 acres in woodland, and 259 total acres. Audience farmers had medians of 34 acres in cropland, 21 acres in pasture, 21 acres in woodland, and 238 total acres. Farm size differed only slightly, but the demonstrators had considerably more crop and pasture land. In total net family income, the demonstrators ranked much higher.

Demonstration families' higher incomes and larger crop and pasture land holdings were reflected in higher material levels of living. Level of living was measured by a scale of 14 consumption items devised through trace line (item) analysis. The items in the scale included automobile and pickup, telephone, three-speed record player, television set, home freezer, air conditioner, vacuum cleaner, electric sewing machine, automatic washer, radio, piped water, kitchen sink, daily or weekly newspaper, and magazine subscription. The median number of these items possessed by demonstrator families was 10.2; while audience families had a median of

only 8.1 items. Such a difference, in light of the relatively small number of items in the scale, indicated a distinct variation in level of living between the two groups.

Formal social participation was also different for the two groups. Demonstrators and their wives were more likely to be active in both religious and secular organizations. Over two-thirds of the demonstrators and one-half of their wives were active in religious and secular activities as compared with one-third of the audience farmers and one-fourth of their wives. Participation in religious and secular organizations was one of several characteristics including lower age, higher education, and higher economic status which distinguished demonstrators from their neighbors.

These comparisons indicate that as a group demonstrators differed from audience farmers. Since communication is fostered by similarity one might question the potential effectiveness of the demonstrators as transmitters of information to their dissimilar neighbors. The comparisons, however, have been between groups, rather than between individuals or families. In the second section of this report, the effectiveness of each demonstrator in influencing his audience is evaluated. In the third section the relationship between the demonstrator and his specific audience is investigated.

Table 1. Selected Characteristics of Audience and Demonstrator Families.

Characteristics	Audience (N=136)	Family Demonstrator (N=29)
House exterior in good condition (percentage)	34	48
Residence on hard-surface road (percentage)	29	45
Consists of married couple (percentage)	92	97
Family head fully able to work (percentage)	88	100
Have preschool children (percentage)	15	24
Have children in school (percentage)	40	76
Have other children in home (percentage)	35	48
Number of persons in household (median)	3.4	5.3
Age of household head in years (median)	56.4	43.9
Age of homemaker in years (median)	50.9	42.0
Education of head in years (median)	9.4	11.9
Education of homemaker in years (median)	9.2	11.9
Land holdings in acres, 1960 (median)	238	259
Non farm income* (median)	\$2,778	\$2,600
Gross farm income (median)	3,302	9,249
Total net family income**	2,306	4,112

*Includes only families (81) with some nonfarm income. Among these are 44 percent of the audience farmers and 62 percent of the demonstrators.

**Based upon respondents' estimates of net income.

EFFECTIVENESS OF THE DEMONSTRATORS

Effectiveness refers operationally to the influence a demonstrator has upon his immediate audience. Two measures of effectiveness are (1) the actual adoption by audience farmers of demonstrated practices and (2) recognition by audience farmers of the demonstration as an influence upon their decision to try a new practice. These are limited measures of effectiveness, since audience farmers may be at different stages of the adoption process. Some have an awareness of a new idea, others have evaluated it, others have tried it, and others have adopted it. Further, audience farmers may be influenced by a demonstration without formally recognizing the demonstrator as a source of information. Results from these measures were not adjusted for such factors as the difficulty of adoption of the practice, difficulty to observe results of the demonstration, appropriateness of the practice for adoption on audience farms, and the attitudes of the audience toward the particular change.

Sixty-five percent of the audience farmers had adopted the demonstrated practices. Fifty-six percent of these said they learned about the practice from their own experiments, and seventy-two percent said

the promise of better yield influenced them to try it. Only nine farmers reported having learned about the practice from a demonstration. The relatively high rate of actual adoption indicates that the influence of demonstrations could have been more important than recognized by the audience farmers.

The most straight-forward indicator of a demonstrator's effectiveness is whether or not his neighbors have adopted practices he is demonstrating. In 10 cases all the audience farmers interviewed had adopted the demonstrator's practice; in 10 cases more than sixty-one percent of the demonstrator's neighbors had adopted his practice; and in 9 cases fewer than sixty-one percent of the demonstrator's neighbors had adopted his practice. The three groups of demonstrators were ranked as high, intermediate, and low, respectively, in rate of practice dissemination.

Demonstrators ranking high, intermediate, and low in rate of practice dissemination were expected to differ in significant ways. The remainder of the report deals with these differences. From the analyses of differences, principles for improved selection of demonstrators have been developed.

FACTORS RELATED TO RATE OF PRACTICE DISSEMINATION

The criteria for selecting an effective demonstrator must include consideration of his personal attributes, characteristics of his audience, the nature of the demonstration, and characteristics of his community. Each of these is investigated in this section. With the objective of defining causes for differential levels of effectiveness, demonstrators ranked high, intermediate, and low in rate of practice dissemination are compared as are audience farmers who have and who have not adopted demonstrated practices.

The Demonstrators

The demonstrator with a high rate of dissemination differed from the less effective one in several ways. Personal attributes, such as age, education, and economic success gave him greater status in the eyes of his audience. More subtle factors, such as his knowledge of the test-demonstration program and his motivation to fulfill its objectives affected the way he responded as a source of information for other farmers.

Demonstrators with a high rate of prac-

Table 2. Comparison of Demonstrators and Audience Farmers at Three Rates of Practice Dissemination.

Characteristics	Rate of Practice Dissemination					
	High		Intermediate		Low	
	Demonstrator (N=10)	Audience (N=50)	Demonstrator (N=10)	Audience (N=50)	Demonstrator (N=9)	Audience (N=44)
Median Age in Years	44	54	47	53	41	58
Median Education in Years	11	9.3	11	9.4	Over 12	9.4
Median Total Family Income	\$3,999	\$1,499	\$3,199	\$2,739	\$4,750	\$2,812
Median Level of Living Score	9.8	7.0	11.5	9.1	11.4	9.3

tice dissemination were similar to their neighbors in age and education but not so similar as were demonstrators with intermediate rates. Demonstrators rated low were much younger and more highly educated than their neighbors. Table 2 shows a curvilinear pattern of effectiveness for these two characteristics.

Demonstrators with high rates of dissemination had a median total family income higher than those with intermediate rates but lower than those demonstrators who ranked low on practice dissemination. Level of living scores for the demonstrators with high rates of dissemination were lower than for the other two groups of demonstrators, and audience families living near demonstrators with high rates tended to have lower level of living scores. Demonstrators with high rates of dissemination were more like their neighbors than were those rated low.

Demonstrators rated high were neither the most similar to their neighbors nor the most different. They were between these—more like their neighbors than different, but not so much like their neighbors as to be typical of them. This supports the earlier stated contention that effective demonstrators are so similar to their neighbors as to be accepted associates but still are slightly atypical.

The intermediately rated demonstrators were most like their neighbors. Information was collected on the adoption of four recommended practices which were being promoted in the general extension program. These were (1) thick spacing of corn (13" to 18" apart to a drill) on better land, (2) use of hybrid seed corn, (3) use of certified cotton seed no more than two years removed from the

breeder, and (4) having soil tested at least once every five years. Demonstrators with high rates of dissemination had adopted an average of 3.2 of these four practices; intermediate demonstrators averaged 2.9 adoptions; while those rated low had adopted 3.2 practices. Average audience adoptions at these three levels were 2.3, 2.2, and 2.0, respectively. The greatest similarity was between intermediately effective demonstrators and their audience; the greatest difference was between those rated low and their audience. Demonstrators with high rates of dissemination were intermediate in similarity to their audience.

A majority of the demonstrators with high rates of dissemination had farm holdings ranging from 150 to 400 acres. Seldom were they on farms larger than 400 acres. One-third of the demonstrators ranked low had holdings of 400 acres or more as compared with only one-tenth of the highly rated demonstrators. Only one demonstrator with a high rate of dissemination had fewer than 150 acres.

Demonstrators were apparently most effective during their fourth year of participation in the program. The median length of participation for demonstrators with high rates of dissemination was 4.3 years. Demonstrators rated intermediate had participated longer (median — 4.5 years) and those rated low had been in the program for a shorter period (median — 3.8 years). The median length of participation for all demonstrators was 4.3 years.

Demonstrators with the highest rates of dissemination tended to give less specific reasons for their selection in the program. Those giving no specific reason

included 70 percent of the highly rated demonstrators and sixty percent of the intermediately rated. Seventy-eight percent of the demonstrators with low rates of adoption listed a reason for their selection, with over half saying willingness to try new practices was the most important reason. Willingness to try new practices is a distinguishing characteristic of the innovator. Verbalization of this trait as a primary reason for being selected for program participation likely accounts for the low rate of practice dissemination from these farms. None with high rates of dissemination indicated that willingness to try new practices was a factor in their selection.

Willingness to change, of course, is a necessary prerequisite to becoming a demonstrator, or even an adopter. The individual whose personality is almost completely centered around this trait, however, makes a relatively uninfluential demonstrator. Apparently the most influential demonstrator is willing to change but not particularly eager to do so. One hypothesis for future study is that the farmer who volunteers to be a demonstrator is less likely to be effective than one who shows no reluctance but must be enticed.

Few differences on measures of personal involvement in the test-demonstration program exist between high, intermediate, and low levels of practice dissemination. All the demonstrators knew who was in charge of the program, but only four gave an accurate estimate of the number of demonstrations in their counties. Seventy-nine percent listed county wide improvements which had resulted from the program; seventy-two percent had specific goals or objectives for their farms; and ninety percent reported keeping records of demonstration activities. Twenty-six demonstrators listed advantages of being a demonstrator and only seven listed any disadvantages. These indices of involvement were unrelated to effectiveness, although more than half the highly effective demonstrators listed no objectives and

more than half of those who were low in effectiveness listed increased income as a specific goal.

The foregoing analysis revealed a persistent pattern which should be of value in choosing demonstrators. The most rapid spread of practices was from demonstrators who were more like their neighbors than those with the slowest spread of practices. Demonstrators who were intermediate in rate of spread of practices were even more like their neighbors. Apparently, similarity to neighbors contributes to rapid spread of practices to a certain point and then its contribution diminishes. This is explained by communications theory. Information flows most easily within a homogeneous group, and most effectively between an outstanding group member and the other group members. As stated earlier, the demonstrator must be an accepted group member, but he must also be outstanding.

Audience Farmers

The rate of spread of practices from demonstrations is affected by characteristics of audience farmers. While characteristics of demonstrators and the similarity of a demonstrator to his audience are important, the audience farmers themselves remain as the final link in the dissemination and adoption process. In this section audience farmers who had adopted demonstrated practices are compared with those who had not.

Careful selection of audience groupings is equally as important to a successful demonstration program as is selection of demonstrators. The typical audience farmer is likely to be influenced by someone who slightly outranks him in socio-economic standing. Two extreme groupings of audience farmers do not react according to this generalization. The innovator, at one extreme is so eager to try new things that he is influenced despite dissimilarities between himself and the demonstrator. At the other extreme, the lag-

gard is resistant to even the most carefully devised demonstration program. Identification of these two groups is an important consideration in choosing sites for demonstrations.

Audience farmers who had adopted practices demonstrated on test-demonstration farms had also adopted other generally recommended practices. Table 3 illustrates this for four recommended practices. Eighty-four percent of those adopting demonstrated practices had adopted more than one other recommended practice. New information is introduced most effectively when audience farmers are accustomed to the adoption of recommended practices. Demonstrations are most immediately effective if located in areas where receptiveness to new ideas has been proven.

Farmers who had adopted demonstrated practices had a lower median age, higher education, and slightly higher level of living—indicating that they had somewhat higher socio-economic standing than farmers who had not adopted demonstrated practices. This finding, shown in Table 4, has been corroborated by studies dealing explicitly with the adoption process and needs little elaboration here.¹⁰

Although the two groups differed only slightly, adopters of demonstrated practices were more likely to go beyond friends and neighbors for authoritative sources of farm information. Table 5 shows that mass media, such as newspaper, radio, and television were used as sources of information more by adopters than nonadopters and that nonadopters tended to rely slightly more on friends and neighbors. A larger percentage of nonadopters named county extension agents as primary sources of information. All who listed extension or experiment station bulletins as primary sources of information had adopted the demonstrated practices. This indicates that more attention needs to be placed on transferring results of demon-

strations through bulletins and methods other than personal contact.

Most audience farmers agreed that the idea of demonstrations was a good one, but few indicated that they were influenced by the demonstrations being conducted. Table 6 indicated nonadopters had more knowledge than adopters on eight measures of contact with the program. Both groups indicated a low general level of knowledge of the program. When names of all the demonstrators in the county were read to the audience farmers, sixty-two percent failed to identify any as demonstration farmers. The demonstrators were known as farmers and

Table 3. Adoption of Other Recommended Practices by Adopters and Nonadopters of Demonstrated Practices Among Audience Farmers.

Number of Recommended Practices Adopted*	Adoption of Demonstrated Practices	
	Adopted (N=94)	Not Adopted (N=42)
0-1	16%	34%
2-3	69	64
4	15	2

*The practices are thick spacing of corn, use of hybrid seed corn, use of certified cotton seed, and having soil tested every five years or less.

Table 4. Selected Characteristics of Adopters and Nonadopters of Demonstrated Practices Among Audience Farmers.

Characteristics	Adoption of Demonstrated Practices	
	Adopted (N=94)	Not Adopted (N=42)
Median Age in Years	53.1	57.8
Median Education in Years	9.5	8.9
Median Level of Living Score*	9.1	8.9
Median Family Income	\$2,162	\$2,857

*Median number of possessions of 14 consumption items.

Table 5. Primary Sources of Farm Information for Adopters and Nonadopters for Demonstrated Practices Among Audience Farmers.

Source of Information	Adoption of Demonstrated Practices	
	Adopted (N=94)	Not Adopted (N=42)
Mass Media	26%	24%
County Extension Agent	21	26
Neighbors and Friends	19	22
Agricultural Bulletins	6	0
Other	28	28
Total	100	100

¹⁰Lionberger, op. cit., pp. 96-104.

often as good farmers, but they were seldom recognized as test-demonstration farmers.¹¹ Adopters and non-adopters shared this characteristic.

The evidence indicates that farmers who adopt demonstrated practices are likely: (1) to have adopted other recommended practices, (2) to be younger, more highly educated, and have higher levels of living than their neighbors, (3) to go beyond friends and neighbors in seeking farm information, and (4) to read written reports and listen to mass media. Neither adopters nor nonadopters had had extensive contact with the demonstration program, but nonadopters had most contact. Similarity between audience member and demonstrator remained as the most crucial factor in whether or not information was disseminated effectively although audience characteristics, per se, were important. Even though nonadopters

were more familiar with demonstrators and the test-demonstration program than adopters, they had not been motivated to adopt by either demonstrations or other methods.

The Demonstrations

Characteristics of the demonstration partially account for the rate of adoption of the practice. Planning, publicity, and skill in carrying out demonstrations bear heavily upon their results. The timeliness and appropriateness of the demonstration within the agricultural setting of the locality is also important. Moreover, there is evidence that demonstrations of certain practices are more likely to result in adoption than others. The selection of demonstrators should involve at least a recognition of the demonstration's effect upon the demonstrator's success.

Demonstrations of corn fertilization were more often followed by the audience than were demonstrations of pasture fertilization. The 10 corn fertilization demonstrations in the sample were carried out by seven demonstrators who ranked high in rate of practice dissemination and three who ranked intermediate. Table 7 shows that only one of the sixteen pasture fertilization demonstrations was on a farm of a demonstrator in the group ranked highest. Fertilization of oats and truck crops was adopted by all the farmers in the area where they were demonstrated. It may be hypothesized that fertilization of corn, oats, and truck crops fit the predominant pattern of agriculture in the sample counties more than does pasture fertilization. Pasture fertilization denotes a significant transition for many farmers from traditional crop cultivation to live-stock production. Thus, of the demonstrators who were copied, most demonstrated a practice which was in keeping with dominant current norms. Adopted practices were such that results were more easily demonstrated and adoption did not require complicated changes in the farming program. Practices such as corn ferti-

¹¹The same conclusion was drawn after interviewing 54 persons in agriculture-related businesses living in towns within the sample counties. All respondents recognized more than one-half the names as farmers, but only one person recognized more than one-fourth of the names as demonstrators.

Table 6. Knowledge of the Test-Demonstration Program by Adopters and Nonadopters of Demonstrated Practices Among Audience Farmers.

Item	Adoption of Demonstrated Practices	
	Adopted (N=94)	Not Adopted (N=42)
Said "Demonstrations Are Effective"	73%	76%
Knew of a Demonstration	36	36
Named a Demonstration	31	33
Named T-D Objectives	29	31
Named T-D Accomplishments	24	24
Name Qualifications of Demonstrators	16	17
Visited a T-D Farm	13	14
Visited a Demonstration	13	12

Table 7. Practices Demonstrated and Rate of Practice Dissemination of Demonstrators.

Practices Demonstrated	Rate of Practice Dissemination		
	High (N=10)	Intermediate (N=10)	Low (N=9)
Corn Fertilization	70%	30%	—
Pasture Fertilization	10	70	89%
Oats Fertilization	10	—	—
Truck Crop Fertilization	10	—	—
Corn Irrigation	—	—	11

lization involve minor changes and are thus accepted more readily.¹² Demonstrations are more often copied if they introduce practices which are slight modifications of accepted practices. Radical changes are often resisted rationally and irrationally.

The one obvious innovation in the sample was met with little acceptance. Irrigation of corn was adopted by none of five audience farmers in the area where it was demonstrated. Three of the farmers were acquainted with the demonstration program; four knew its objectives; and two were aware of the demonstrator's participation in the program. The nature of the demonstration in this case largely accounted for the absence of adoption by audience farmers.

Rate of adoption of a practice reflects both the difficulty of the practice and the effectiveness of the demonstration. No attempt was made to determine the rationality of adopting difficult practices.

The Communities

Community characteristics may influence the rate of adoption of demonstrated practices, since communication patterns often follow the network of interaction which structures a local society. A demonstration program may be more successful if it becomes intermeshed with the informal communication structure of the community. Then too, the ecological structure of the community—where people and economic centers are located spatially—influences whether or not a demonstration is seen often by audience farmers. Both of these factors should be considered in choosing demonstrators. Two types of data are available for evaluating the influence of community characteristics on demonstration effectiveness: (1) similarity of community identification between demonstrator and the

Table 8. Community Identification and Adoption of Demonstrated Practices Among Audience Farmers.

Community Named as Place of Residence	Adoption of Demonstrated Practices	
	Adopted (N=89*)	Not Adopted (N=39*)
Same as Demonstrator	62%	56%
Other than Demonstrator	38	44

*No information for five adopters and three non-adopters.

Table 9. Likelihood of Passing a Demonstration While Traveling to a Trade Center for Adopters and Nonadopters of Demonstrated Practices Among Audience Farmers.

Likelihood of Passing a Demonstration	Adoption of Demonstrated Practices	
	Adopted (N=94)	Not Adopted (N=42)
Probably Pass T-D Farm	33%	29%
Probably Not Pass T-D Farm	67	71

audience farmer and (2) ecological location of the demonstration farm.

Demonstrations were more effective in situations where audience farmers and demonstrators agreed on community identification. Table 8 shows that sixty-two percent of the audience adopters of demonstrated practices named the same community as the nearest demonstrator. Multiple names for rural neighborhoods notwithstanding, common identification with a single locality indicated increased communication between the demonstrator and his audience.

The effectiveness of a demonstration was directly related to its location. Farmers adopting demonstrated practices were more likely to pass demonstration farms en route to trade centers. Audience farmers were asked where they bought groceries, clothing, furniture, and farm supplies, where they sold farm products and where they banked. The town named the greatest number of times by each respondent was regarded as his major trade center. Judgments were made, using county highway maps, as to whether or not travel to the major trade center would take audience farmers by the demonstration farms. Table 9 shows that thirty-three percent of the adopters and twenty-nine percent

¹²Because the farmers were asked to name what they had demonstrated, it was not practical to determine the exact manner in which they had carried out the demonstration. This is a variable that needs investigation.

of the nonadopters probably passed a demonstration farm regularly. The closer to town the demonstrator lived, the more likely his farm would be observed by audi-

ence farmers. This presented the opportunity for more exposure of his demonstration to the audience.

SUMMARY

This is a study of the test-demonstration program in Mississippi. The objective is to develop more adequate criteria for the selection of effective demonstration farmers. The demonstration process is analyzed as a two step flow of communication—(1) from the land-grant colleges to the demonstrator and (2) from the demonstrator to his neighbors. The central concerns of the paper are factors which facilitate or impede the adoption of practices by the demonstrators' audience.

Twenty-nine demonstrators and 136 audience farmers were interviewed. The audience farmers were chosen randomly from within a two-mile radius of the demonstrators. As a group, the demonstrators were younger, more highly educated, had higher levels of living, and had more profitable farm operations than the audience sample.

Demonstrators were divided into three groups depending on the percent of audience farmers that had adopted the demonstrated practice; one hundred percent of the audience had adopted the demonstrated practice of 10 demonstrators; sixty-one to ninety-nine percent had adopted the practices of 10 farmers, and sixty percent or less of the audience had adopted practices of 9 of the farmers.

The demonstrator in the group where all practices demonstrated were adopted by the audience was similar to his audience, but not so similar as were demonstrators of intermediate effectiveness.

This was the finding with regard to age, education, level of living, and level of adoption. The highly effective demonstrator had a medium sized farm (150-400 acres) and had been a demonstrator for more than four years. He had a willingness for change and trying new practices, although this was not his dominant

personality trait. The effective demonstrator was enough like his neighbors to be accepted as an associate, but outstanding enough to serve as a reliable source of information.

Characteristics of audience farmers, demonstrations, and communities were found to contribute to rate of adoption of practices. The effective demonstrator influenced farmers who were most receptive to new ideas. Such farmers had lower ages, higher educations, and higher levels of living. They had adopted other recommended farm practices, and their eagerness to try new things tended to take them beyond friends and neighbors in search of information.

The nature of the demonstration contributed to the demonstrators' influence in disseminating practices to neighboring farms. Demonstrations of corn fertilization were adopted more frequently by audience farmers than the less accepted practices of pasture fertilization and corn irrigation. Finally, community identification of the demonstrator and audience farmer, as well as location of the demonstration were related to other farms, contributed to the rate of diffusion and adoption of practices.

Guidelines for the selection of demonstrators were drawn from the analysis. To have a successful program one should choose farmers who have the following characteristics:

1. Be willing to be selected as a demonstrator but not so anxious to be a demonstrator as to aggressively seek the position.
2. Be willing to accept new ideas from others but not be an innovator himself.

3. Be slightly younger than the audience.
4. Have slightly more education than the audience.
5. Have slightly higher farm income than the audience.
6. Have a slightly higher level of living than the audience.
7. Although outstanding, not be so different in characteristics as to be considered by the audience as different from them.
8. Be a recognized leader in religious and secular groups attended by his audience.
9. Be located so the audience frequently passes his farm.
10. Be located in areas where audience farmers are accustomed to adopting recommended ideas.