

Progress Report 22

November 1954

*Communication
and the Adoption of
Recommended Farm Practices*

**Some Information from a Study in
Washington County, Kentucky, 1950**



**AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF KENTUCKY
LEXINGTON**

COMMUNICATION AND THE ADOPTION OF RECOMMENDED FARM PRACTICES
Some Information From A Study in Washington County, Kentucky, 1950

By C. Paul Marsh and A. Lee Coleman
Department of Rural Sociology

Increasing the efficiency of agriculture and raising the levels of living of rural people are important state and national goals that are shared by rural leaders everywhere. In the typical Kentucky county there are several organized programs designed to help attain these objectives. Workers in these programs recognize that the practices and plans they recommend often "take" unequally throughout the area they serve. But there is a lack of precise information as to how great the differences in acceptance are, what characteristics of the people are related to these differences in "take," and what some of the causes may be. How farmers get information about new farm matters would seem to be related to their acceptance or non-acceptance of practices, but information is lacking as to how many Kentucky farmers use each channel of communication and what differences there are in the use of the various channels.

In a survey of 393 Washington County farmers in 1950, an attempt was made to find some of the answers to these questions. All farm operators in 13 neighborhoods were interviewed. The neighborhoods were selected to represent the major areas or types of farming conditions in the county. The study was concentrated within a single county so that all of the farm operators would have been "exposed" to the same agricultural agencies, programs, and agency representatives.

Acceptance of Recommended Practices

For many of the practices recommended by the agricultural improvement agencies there is no definite way of determining when a farmer has "accepted" or "adopted" the practice. For example, with regard to the bluestone-lime treatment for tobacco beds a farmer may have (1) never used it, (2) used it some years but not in other years, (3) used it consistently year after year, as recommended. But if he builds terraces he is pretty much "committed" to farming with them for some time to come.

Agricultural Experiment Station

University of Kentucky

Lexington

It is generally agreed, however, that the biggest hurdle in gaining acceptance of new practices is getting the farmer to make the first trial. Because of this reason, for a number of practices, the definition of "adoption" of a practice used in the study was that the farmer had ever tried it. As for some other practices, though, there seemed to be good reasons for using a stricter definition of acceptance. The exact definitions used for each practice are listed below, and the figure after each definition gives the percentage who had met the stated definition (of those having the appropriate enterprises).

1. Artificial Breeding: had bred one or more cows artificially (14 percent).
2. Farm Records: keeps complete farm records - receipts, expenditures, inventory, and production (13 percent).
3. Terracing or Contouring: had any terraces or had ever cultivated any fields on the contour (20 percent).
4. Ladino Clover: had ever planted any ladino clover (25 percent).
5. Kentucky 31 Fescue: had ever planted any Kentucky 31 Fescue (25 percent).
6. Calf Vaccination: had ever vaccinated for Bang's disease (27 percent).
7. Chick Purchase: had purchased all chicks from a hatchery and from one in Kentucky in the year preceding the interview (57 percent).
8. All-pullet Flock: had kept all-pullet flock in the year preceding the interview (25 percent).
9. Bluestone-lime: had ever used the bluestone-lime treatment on tobacco beds (60 percent).
10. Tobacco Fertilization: had used 1,000 pounds or more of mixed fertilizer per acre on tobacco in the year preceding the interview (64 percent).
11. Soil Testing: had ever had any soil tested (23 percent)
12. Phenothiazine Drench: had drenched sheep with phenothiazine at least once in the year preceding the interview (60 percent).

13. Phenothiazine with salt: had given sheep phenothiazine with salt at least part of the time in the year preceding the interview (59 percent).

The purpose of Tables 1-6 is to show the differences among various groupings of farmers in the extent to which they had adopted each of the practices. For each group, the percentage of farmers in the group who had adopted each practice is presented. In Table 1, for example, the percentage of farmers of different educational levels who had adopted each practice is presented. For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies.

Thus, 132 farmers who had completed less than 7 grades of schooling had dairy cows; and of these, 8 farmers (6 percent) had adopted artificial breeding. (Table 1) This means, of course, that 124 (94 percent) farmers of this educational level had not adopted this practice. Similarly, 94 farmers who had finished more than 8 grades had dairy cows and 28 percent of these 94 farmers had adopted artificial breeding. (Table 1)

The keeping of farm records is, of course, a practice that applies to all farmers, regardless of which enterprises they follow. As is indicated in Table 1, however, only 3 percent of the 149 farmers with less than 7 grades of schooling were following this practice, while 29 percent of the 96 farmers with more than 8 grades of schooling had adopted it.

Table 1 is designed to show the differences in the extent to which farmers of different educational levels had adopted each of the practices. Tables 2 to 6 are set up in a similar manner to show the differences among other groupings of farmers.

Do farmers of different educational levels adopt recommended practices to the same extent?

Table 1. Percentage of Farmers of Different Educational Levels Who Had Adopted Certain Recommended Practices*

Practice	Years of Schooling Completed		
	Less than 7	7- 8	More than 8
	%	%	%
Artificial Breeding	6	13	28
Farm Records	3	13	29
Terracing or Contouring	4	17	48
Ladino Clover	13	23	47
Kentucky 31 Fescue	15	23	42
Calg Vaccination	18	27	43
Chick Purchase	51	53	76
All Pullet Flock	13	27	38
Bluestone-Lime	46	60	82
Tobacco Fertilization	50	68	81
Soil Testing	11	19	46
Phenothiazine Drench	37	63	76
Phenothiazine with Salt	44	54	76

*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

The better educated a farmer is the more likely he is to adopt recommended practices. For each practices, the higher the educational level, the greater the percentage of farmers adopting the practice.

Do operators of small farms adopt recommended practices to the same extent as operators of large farms?

Table 2. Percentage of Farmers Having Different Gross Sales Who Had Adopted Certain Recommended Practices*

Practice	Annual Value of Crops and Products Sold			
	Under \$1,000	\$1,000-2,499	\$2,500-3,999	\$4,000 or More
	%	%	%	%
Artificial Breeding	3	7	21	33
Farm Records	1	10	17	27
Terracing or Contouring	2	6	41	46
Ladino Clover	9	16	36	56
Kentucky 31 Fescue	12	16	33	55
Calf Vaccination	16	20	38	48
Chick Purchase	42	53	64	76
Pullet Flock	11	22	42	28
Bluestone-Lime	35	56	78	76
Tobacco Fertilization	55	58	75	76
Soil Testing	9	14	35	48
Phenothiazine Drench	**	41	76	78
Phenothiazine with Salt	**	39	71	75

*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

**Percentage not presented since practice applies to less than 35 farmers in this group.

The larger the farm operation (as indicated by value of crops and products sold) the more likely the farm operator is to adopt recommended practices. For all practices studied, the percentage of farmers adopting the practice increased as the value of crops and products sold increased.

Do more of the farmers who have personal contact with agricultural agency representatives adopt practices than farmers who do not have such personal contact?

Table 3. Percentage of Farmers Who Had Adopted Certain Recommended Practices, Classified According to Whether or Not They Had Talked with an Agricultural Agency Representative in the Two Years Preceding the Interview*

Practice	Contact With Agricultural Agency Representatives**	
	Had Not Talked With	Had Talked With Representative
	%	%
Artificial Breeding	2	22
Farm Records	5	19
Terracing or Contouring	2	33
Ladino Clover	10	37
Kentucky 31 Fescue	14	34
Calf Vaccination	17	35
Chick Purchase	47	65
Pullet Flock	16	31
Bluestone-Lime	44	72
Tobacco Fertilization	54	72
Soil Testing	23	33
Phenothiazine Drench	45	66
Phenothiazine with Salt	40	67

*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

**County Agent, Soil Conservation Service Technician, Farmer's Home Administration Representative, or Production Credit Association Representative.

As was expected, more of the farmers who had talked with representatives of the agricultural agencies had adopted recommended practices than had those who had not experienced this contact. This was true for all practices.

Are Farm Bureau members ahead in the adoption of recommended practices?

Table 4. Percentage of Farmers Who Had Adopted Certain Recommended Practices, Classified According to the Extent of their Participation in the Farm Bureau*

Practice	Extent of Participation in the Farm Bureau		
	Not a Member	Member, Does Not Attend	Member and Attends
	%	%	%
Artificial Breeding	5	15	33
Farm Records	7	10	52
Terracing or Contouring	3	25	48
Ladino Clover	13	30	48
Kentucky 31 Fescue	17	27	40
Calf Vaccination	19	32	38
Chick Purchase	45	59	86
Pullet Flock	14	27	46
Bluestone Lime	41	63	88
Tobacco Fertilization	52	68	85
Soil Testing	11	25	49
Phenothiazine Drench	45	62	72
Phenothiazine with Salt	40	61	78

*For each practice the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

In general, the more active a farmer is in the Farm Bureau the more likely he is to adopt recommended practices. Among the farmers interviewed, those who were active members of the Farm Bureau were far ahead of other farmers in the adoption of all practices.

(The Farm Bureau was the only active farm organization in the county at the time of the interviewing).

Do more of the younger farmers adopt recommended practices than of the older farmers?

Table 5. Percentage of Farmers of Different Ages Who Had Adopted Certain Recommended Practices*

Practice	Age				
	Under 35	35-44	45-54	55-64	65 or Over
	%	%	%	%	%
Artificial Breeding	23	14	15	3	9
Farm Records	35	8	7	6	5
Terracing or Contouring	36	27	14	8	6
Ladino Clover	27	35	19	16	27
Kentucky 31 Fescue	27	29	20	22	25
Calf Vaccination	28	38	20	19	29
Chick Purchase	59	57	65	40	63
All Pullet Flock	36	25	29	15	12
Bluestone Lime	65	61	54	58	61
Tobacco Fertilization	72	81	53	58	46
Soil Testing	29	23	22	27	14
Phenothiazine Drench	**	71	47	**	**
Phenothiazine with Salt	**	44	53	**	**

*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

**Percentage not presented since the practice applies to fewer than 35 farmers in this group.

The relationship between age and adoption of recommended practices is not at all clear-cut. Relatively more of the younger farmers had adopted artificial breeding, farm records, and terracing or contouring, but for most practices there appears to be little relationship between adoption and age. The relatively high proportion of farmers under 35 who were keeping complete records can be partly explained by their participation in the Veterans On-the-farm Training Program.

Do Recommended farm practices "take" at the same rate in all areas of a county?

Table 6. Percentage of Farmers Who Had Adopted Certain Recommended Practices, Classified According to the Type of Neighborhood in which they lived*

Practice	Type of Neighborhood		
	"Low Adoption" Neighborhoods	"Medium Adoption" Neighborhoods	"High Adoption" Neighborhoods
	%	%	%
Artificial Breeding	3	14	31
Farm Records	7	14	20
Terracing or Contouring	1	17	53
Ladino Clover	9	25	52
Kentucky 31 Fescue	17	21	43
Calf Vaccination	13	33	43
Chick Purchase	42	68	80
Pullet Flock	12	32	35
Bluestone Lime	41	70	76
Tobacco Fertilization	51	67	80
Soil Testing	10	25	42
Phenothiazine Drench	36	68	73
Phenothiazine with Salt	34	63	76

*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies. (See pages 2-3.)

Extension workers have long recognized that recommendations "take" more quickly and more completely in some communities than in others, as is clearly the case here. Farmers in certain neighborhoods were so consistently high in adoption of practices and farmers in other neighborhoods so consistently low that it was possible to group the neighborhoods as "low," "medium," and "high" in adoption.

The neighborhoods that were low in adoption were located in the hill section of the county. The farms were small, the educational level

Contact with Channels of Communication

Each of the farm operators interviewed was asked the questions listed below. After each question is given the percentage of all farmers who reported contact with that channel.

1. During the past 2 years, have you read any farm papers or magazines? (77 percent)
2. Do you read any newspapers? Do you get farming information, ideas, or help of any kind from the newspapers you read? (Only a "yes" answer to the second of these questions was counted as a "contact".) (67 percent)
3. During the past 2 years, have you listened to any farm programs on the radio? (86 percent)
4. During the past 2 years, have you attended any farm meetings of the county agent, Soil Conservation Service, AAA, agriculture teachers, or other agricultural agencies? (33 percent)
5. During the past 2 years, have you talked personally to any of the representatives of the agricultural agencies such as the county agent, Soil Conservation man, Farmers Home (Farm Security) man, Production Credit man, etc. about farming problems, to get their advice and suggestions? (56 percent)
6. During the past 2 years, have you read any of the letters which the County Agent sends out from time to time, which include advice and suggestions about various farming matters? (76 percent)
7. During the past 2 years, have you read or referred to any of the farm bulletins put out by agricultural agencies, Experiment Station, or federal government? (46 percent)
8. During the past 2 years, have you gotten any farming information, advice or suggestions from salemen, dealers, storekeepers, bankers, businessmen or co-ops? (33 percent)
9. During the past 2 years, have you gotten any farming information, advice, or suggestions from neighbors, friends or relatives or by watching how they farm or new things they are trying? (88 percent)

These questions were obviously designed to determine only if there was any contact at all with the various means of communication. Except for newspapers, "contact" refers to any contact at all for a 2-year period--or, more accurately, any contact that made enough of an impression to be remembered. This should be kept in mind when interpreting Tables 7, 9, and 11. Obviously, the frequency and type of contact varied widely among those reporting this minimum of contact.

Tables 7, 9, and 11 are designed to show the differences among different groupings of farmers in the extent to which they had obtained farming information from various channels of information. For example, as is shown in Table 7, 79 percent of the 149 farmers with less than 7 grades of schooling said they had listened to farm programs on the radio, while 88 percent of the 96 with more than 8 grades of schooling had listened to such programs. However, only 36 percent of the farmers with less than a seventh grade education had talked personally with an agricultural agency representative as compared with 85 percent of those with more than 8 grades of schooling.

Though little information was obtained as to how frequently farm operators were in contact with the various channels of information, the following question was asked in an attempt to determine which of the media each respondent regarded as most important to him personally:

"Of all the ways of getting information we have talked about-- farm papers, newspapers, radio, farm meetings, talking to the agricultural agency people, talking to dealers, and talking to friends, neighbors, and relatives--from what one or two sources do you usually get the most helpful information?"

Tables 8, 10, and 12 are based on the answers to that question. They are designed to show differences among the various groupings of farmers in the channels of information they consider most helpful. Thus, as may be seen in Table 8, 41 percent of the farmers with less than 7 grades of schooling reported radio as among the one or two channels they found most helpful; but only 18 percent of those with more than an eighth grade education considered radio a most helpful channel. On the other hand, only 11 percent of the farmers with less than 7 grades of schooling reported personal conversation with agricultural agency representatives as a most helpful channel as compared with 35 percent of those with more than 8 grades of schooling.

Do farmers of different educational levels get farming information in the same ways?

Table 7. Percentage of Farmers of Different Educational Levels Reporting Use of Various Channels for Farming Information

Channel of Communication	Years of Schooling Completed		
	Less than	7-8	More than
	7 (N = 149)	(N = 147)	8 (N = 96)
	%	%	%
Radio	79	91	88
Farm Magazines	71	86	94
Newspapers	49	73	86
Agricultural Agency Representatives	36	60	85
Farm Meetings	13	34	64
Farm Bulletins	26	43	83
Circular Letters from County Agent	63	82	88
Friends, Neighbors, or Relatives	84	89	94
Dealers and Salesmen	30	33	38

N = Number of farmers in each group.

The more education a farmer had, the more likely he had used each of the channels of communication. As the amount of education increased, the percentage of farmers who reported attending meetings, reading farm bulletins, and talking with agricultural agency representatives increased sharply. With increased education there was also a definite increase in the percentage of farmers reading farm magazines, circular letters from the county agent, and newspapers.

Most farmers of all educational levels got farming information from "friends, relatives, or neighbors," and listened to farm programs on the radio, so that the differences between groups were small. Relatively few reported getting information from dealers or salesmen, and here also the differences between educational levels were small.

Do farmers of different educational levels consider the same channels of information the most helpful?

Table 8. Percentage of Farmers of Different Educational Levels Reporting Various Channels as Among Those From Which They Get the Most Helpful Information

Channel of Communication	Years of Schooling Completed		
	Less Than	7 - 8	More Than
	7 (N = 149)	7 - 8 (N = 147)	8 (N = 96)
	%	%	%
Radio	41	37	18
Farm Magazines	8	17	27
Newspapers	6	2	5
Agricultural Agency Representatives	11	23	35
Farm Meetings	1	5	18
Farm Bulletins	5	5	4
Circular Letters from County Agent	1	6	13
Friends, Neighbors, or Relatives	37	27	21
Dealers and Salesmen	3	2	1
None Helpful	5	1	0

N = Number of farmers in each group.

The less education a farm operator has, the more likely he is to consider "friends, neighbors, or relatives" and radio programs as being the most helpful means of obtaining farm information, and the less likely he is to report personal contact with agricultural agency representatives, farm magazines, and meetings as channels of the most helpful information.

The percentage of farmers regarding farm magazines, agricultural agency representatives, and farm meetings as channels of most helpful information increased sharply as education increased while the percentage listing "friends, neighbors, or relatives" and radio decreased with increasing education. Even among the better educated farmers, however, radio and "friends, neighbors, or relatives" were among the channels most often listed as most helpful. Newspapers, farm bulletins, and dealers and salesmen are reported as being the most helpful sources of information by relatively few of the farm operators.

Do operators of small farms get farming information in the same ways as operators of large farms?

Table 9. Percentage of Farmers Having Different Gross Sales Who Reported Use of Various Channels for Farming Information

Channel of Communication	Annual Value of Crops and Products Sold			
	Under \$1,000 (N=77)	\$1,000-2,499 (N=164)	\$2,500-3,999 (N=81)	\$4,000 or More (N=64)
	%	%	%	%
Radio	84	82	90	91
Farm Magazines	62	85	92	95
Newspapers	47	61	80	88
Agricultural Agency Representatives	27	46	81	88
Farm Meetings	9	26	46	64
Farm Bulletins	20	36	65	78
Circular Letters from County Agent	56	70	93	92
Friends, Neighbors, or Relatives	88	90	85	94
Dealers or Salesmen	23	31	38	48

N = Number of farmers in each group.

The great majority of all farmers, regardless of size of operation (as indicated by value of crops and products sold), said they got farming information from "neighbors, friends, or relatives" and listened to farm programs on the radio. For other channels, the larger the size of operation the larger the percentage of farmers who said they used each channel. The differences between the smallest and largest operators are especially great for the following media: talking with agricultural agency representatives; reading or referring to farm bulletins, and attending farm meetings and demonstrations sponsored by agricultural agencies. In short, agricultural agencies seem to be reaching a much higher percentage of large farmers than small farmers through personal contact, bulletins, and meetings and demonstrations.

Do operators of small farms consider the same channels most helpful as do the operators of large farms?

Table 10. Percentage of Farmers Having Different Gross Sales Who Reported Various Channels as Among those from Which They Get the Most Helpful Information

Channel of Communication	Annual Value of Crops and Products Sold			
	Under \$1,000 (N=77)	\$1,000 - 2,499 (N=164)	\$2,500 - 3,499 (N=81)	\$4,000 or More (N=64)
	%	%	%	%
Radio	32	33	40	27
Farm Magazines	10	14	21	21
Newspapers	1	6	2	5
Agricultural Agency Representatives	4	16	27	40
Farm Meetings	1	4	10	18
Farm Bulletins	7	3	5	6
Circular Letters from County Agent	3	4	5	14
Friends, Neighbors, or Relatives	48	34	17	11
Dealers or Salesmen	1	3	1	2
None Helpful	3	4	1	2

N = Number of farmers in each group.

Among the smaller farmers, "friends, neighbors, or relatives," and radio were most frequently mentioned as being the channels of "most helpful" information. Farm meetings and personal conversations with agricultural agency representatives were named as being the most helpful sources by very few of these farmers (who reported little use of these channels at all-- Table 9).

Among the larger operators, "friends, neighbors, and relatives" were much less frequently regarded as a most helpful source, but radio ranked high in this group as well as among smaller farmers. In addition to radio, sources most often listed by these larger farmers were farm magazines, farm meetings, and--most of all--personal contact with agricultural agency representatives.

Dealers and salesmen, bulletins, and newspapers were listed as being the most helpful by very few farmers, and circular letters were frequently listed only by the larger farmers.

Are there differences among neighborhoods in farmers' use of the various means of communication?

Table 11. Percentage of Farm Operators Reporting Use of Various Channels for Farming Information, Classified According to Type of Neighborhood in Which They Lived

Channel of Communication	Type of Neighborhood		
	"Low Adoption" Neighborhoods (N = 156)	"Medium Adoption" Neighborhoods (N = 139)	"High Adoption" Neighborhoods (N = 98)
	%	%	%
Radio	82	88	89
Farm Magazines	70	88	93
Newspapers	52	71	85
Agricultural Agency Representatives	34	66	82
Farm Meetings	19	36	53
Farm Bulletins	28	50	69
Circular Letters from County Agent	63	84	86
Friends, Neighbors, or Relatives	88	82	97
Dealers or Salesmen	27	29	49

N = Number of farmers in each group.

There is much variation among neighborhoods in the extent to which farm operators use the various channels of communication to obtain farming information.

Here, neighborhoods are grouped according to the extent to which the residents have adopted recommended practices. (See p. 9) In neighborhoods where recommended practices are widely accepted, more farmers report contact with each channel than do residents of neighborhoods that are low in adoption. The differences among neighborhoods are small for radio and "for friends, neighbors or relatives" but are quite large for other channels, especially for farm meetings, agricultural agency representatives, and farm bulletins.

Are there differences among neighborhoods in the channels which farmers consider most helpful?

Table 12. Percentage of Farmers Reporting Various Channels as Among Those From Which They Get the Most Helpful Information, Classified According to the Type of Neighborhood in Which They Lived

Channel of Communication	"Low Adoption" Neighborhoods (N=156)	"Medium Adoption" Neighborhoods (N = 139)	"High Adoption" Neighborhoods (N = 98)
	%	%	%
Radio	42	32	25
Farm Magazines	10	15	26
Newspapers	2	6	5
Agricultural Agency Representatives	7	29	31
Farm Meetings	3	6	14
Farm Bulletins	2	9	7
Circular Letters from County Agent	3	8	2
Friends, Neighbors, or Relatives	35	26	25
Dealers or Salesmen	2	2	3
None Helpful	4	2	0

N = Number of farmers in each group.

Relatively few of the residents of "low adoption" neighborhoods regarded any channel other than "friends, neighbors, or relatives" and radio as most helpful sources. Agricultural agency representatives rank especially low in these neighborhoods as compared with "medium adoption" and "high adoption" neighborhoods. Farm magazines seem much more highly regarded as a source of information by farmers in "high adoption" neighborhoods than by those in "low" and "medium" neighborhoods. Radio and "friends, neighbors or relatives" were reported as among the most helpful channels by a fourth or more of the residents in each group of neighborhoods.

Information from "friends, neighbors, or relatives" may vary from superstition and folk knowledge to scientific information that came originally from the agricultural agencies. In another report¹ it has been shown that when farmers in the "high adoption" areas go to another farmer for information they tend to choose one who is ahead of most farmers in the area in the adoption of new practices, while in the "low adoption" neighborhoods they tend to go to one who is near their own level in the adoption of practices.

¹C. Paul Marsh and A. Lee Coleman, "Farmers' Practice-Adoption Rates in Relation to Adoption Rates of Leaders," Rural Sociology, XIX: 2 (June, 1954), pp. 180-181 (Reprints available from Rural Sociology Department, University of Kentucky)