

# Trends in Use of Recommended Farm Practices and Farm Information Sources in 12 Kentucky Neighborhoods

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Progress Report 111

January 1962

**UNIVERSITY OF KENTUCKY**  
**AGRICULTURAL EXPERIMENT STATION**  
**LEXINGTON**

Progress Report 111

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TRENDS IN USE OF RECOMMENDED  
FARM PRACTICES AND OF FARM INFORMATION SOURCES  
IN 12 KENTUCKY NEIGHBORHOODS

Some Findings from Surveys Conducted  
in 1950, 1955, and 1960

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## SUMMARY AND INTERPRETATION OF FINDINGS

What happens to new ideas and practices recommended by agricultural agencies? Do they eventually become accepted by nearly all farmers? How soon do they become obsolescent? Are some accepted more readily than others? What factors are responsible for differences in acceptability, speed of adoption, and continued use of recommended farm practices? A study of trends in the use of recommended farm practices by farm operators in 12 Kentucky neighborhoods and the sources of farm information utilized by these farm operators helps to provide answers to these and related questions.

In 1950, 1955, and 1960 surveys were made of the use of 14 farming practices by farm operators in 12 neighborhoods of an Outer Bluegrass county. The practices pertain to, but do not necessarily represent in a statistical sense, animal husbandry, animal pathology, agronomy, and farm management. When the first survey was made in 1950 all of the practices were recommended by the University of Kentucky Cooperative Extension Service as being applicable in general to the types of farming engaged in by farmers in the 12 neighborhoods. For the most part, the practices were also recommended in 1960, although there are some partial exceptions, as will be seen.

### Trends in Practice Use

(a) Most of the 14 recommended practices gained in acceptance and use throughout the 1950 to 1960 decade. The practices that were still gaining in 1960 are soil testing, terracing and/or contouring,

plowing tobacco beds in the fall, using methyl bromide gas to kill weed seed in tobacco beds, using commercial fertilizer on corn, growing Kenland red clover, growing alfalfa, using artificial breeding, and keeping records of receipts and expenses.

(b) However, several practices, after gaining in use during the first half of the decade, either remained stable or declined in extent of use after 1955. These were use of bluestone-lime on tobacco beds, calf vaccination for brucellosis, phenothiazine in salt, phenothiazine drench for sheep, and keeping an all-pullet flock.

#### Trends in the Use of Information Sources

(a) For most sources of farm information, the extent of use by farm operators in these neighborhoods increased notably from 1950 to 1955 but declined in the period 1955 to 1960. This applies to contacts with the Extension Service, Soil Conservation Service, Agricultural Stabilization and Conservation program representatives, Vocational Agriculture teacher, and Kentucky Agricultural Experiment Station personnel; and to getting farm information from newspapers, farm magazines, farm meetings of agricultural agencies, visits with agricultural agency representatives, county agricultural extension agent's circular letters, farm bulletins, dealers and salesmen.

(b) Only radio and television (not available in 1950) increased proportionately in use as sources of farm information at each survey period.



Trends by Educational Level of Neighborhood

The neighborhoods were grouped as to the median number of years of schooling completed in 1950 by the farm operators. Neighborhoods in which the median educational level of farm operators in 1950 was 4.4 to 7.4 years, 7.5 to 8.4 years, and 8.5 to 9.9 years are referred to as having low, medium, and high educational levels, respectively.

(a) In general, for practices that gained in use during the decade gains were registered in neighborhoods of all educational levels. However, compared with farmers in neighborhoods of medium educational levels, those in the high neighborhoods are 5 years ahead in the extent of using these recommended practices; in practice utilization levels farmers in the high neighborhoods are about 10 years in advance of those in neighborhoods of low educational levels.

The trends toward stability or decline of certain practices also were found in neighborhoods of each educational level.

(b) The prevailing patterns of increase in the extent of use of all agricultural agencies and media during the first half of the decade and the decline in use of all sources except radio and television during the latter half of the decade apply to all neighborhoods, regardless of educational level. But, at all three survey periods the most extensive use of information sources was made by farmers in the high-education neighborhoods, followed, in order, by those in the medium- and low-education neighborhoods. Moreover, while newspapers, agency representatives, county agent's letters, farm bulletins, and dealers and salesmen were less

extensively utilized as sources in the 5-year period ending in 1960, the decline in use was less pronounced in the high- than in the medium- or low-education neighborhoods.

Trends by Dominant Land Use-Suitability Type of Neighborhood

By reference to Land Areas of Kentucky and Their Potential for Use (1953),\* each neighborhood was classified as to the predominant use-suitability of the land in farms in the neighborhood, thereby producing a three-fold classification of neighborhoods -- Inner Bluegrass, Outer Bluegrass, and Hills of the Bluegrass.\*\* Significantly, the best farming neighborhoods in use-suitability of land (Inner Bluegrass) also had the highest educational levels of farmers, while the poorest farming neighborhoods (Hills of the Bluegrass) had the lowest educational levels. In general, therefore, the patterns of farm practice and information source utilization are the same whether neighborhoods are classified by educational level or by land use-suitability.

While terracing, diversion ditches, and/or contouring are being used with increasing frequency, especially in the Inner and Outer Bluegrass neighborhoods, there is evidence that under present conditions periodic soil testing as a practice has reached a utilization plateau. In the three years ending in 1960, about 2 out of every 3 farm operators had had soil tests made.

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\*See footnote 4, page 9 .

\*\*The categories are explained in detail in footnote 4, page 9.



Use of commercial fertilizer on corn is rapidly becoming established as a routine practice in the Inner Bluegrass neighborhoods. Outer Bluegrass farmers, however, lag about 5 years in attaining equality in level of fertilizer utilization while the majority in the Hills of the Bluegrass remain unconvinced of its usefulness for them.

Trends by Neighborhood Scale of Farm Operations

On the basis of median gross sales in 1950 the 12 neighborhoods were grouped as follows: \$1,100 to \$1,999 (small scale), \$2,000 to \$2,999 (medium scale), and \$3,000 to \$3,999 (large scale).

(a) As expected, the prevailing scale of farm operations in a neighborhood mattered most for those practices which cost most in themselves or are related to intensive and specialized livestock enterprises. In 1960 terracing and/or contouring, calf vaccination, artificial breeding, phenothiazine drench for sheep, and an all-pullet flock were used to a considerably greater extent in the large-scale-of-farming neighborhoods than in those of medium- and small-scale farms. Moreover, the decline in the use of calf vaccination for brucellosis, phenothiazine drench for sheep, and an all-pullet flock, which generally characterized these practices after 1955, did not occur at all or was less pronounced in the large-scale-of-farming neighborhoods.

(b) The over-all trends in the utilization of agricultural agencies and media as farm information sources were manifested in all neighborhoods, regardless of scale.

What the Trends Indicate

The trend of continued growth of certain practices, of stability or decline in extent of use for others, is consistent with the findings of other surveys. Soon after being initially recommended, farm practices are adopted by a few innovators. In a community, however, the time from initial adoption to majority adoption often takes a decade or longer. Thereafter, the rate of new adoptions gradually slows down until a level of saturation or a plateau is reached, after which there are few new adoptions. The saturation level or plateau for a practice may be at or near 100 percent of the farmers, or considerably lower. In the latter case, increased efforts to alert farmers to the need for the practice, improvements in the practice itself, reduction in the time and initiative involved in carrying out the practice, and the like, may result in increased usage. It is evident that a few of these practices have become obsolescent or partly so in the sense that either they are being supplanted by other more effective practices (e. g., phenothiazine drench or in salt for sheep), or that the entire enterprise of which they are a part is declining in the survey area (e. g., the commercial production of eggs). The use of bluestone-lime on tobacco beds seems to have been influenced by a combination of factors, including the development of tobacco varieties more resistant to wildfire and angular leaf spot, the decline in incidence of wildfire, and considerable lack of knowledge among farmers as to what bluestone-lime protects against and when to apply it.

The feasibility or "practicability" of some practices is related to the type and extensiveness of cropping that is suitable.



The "practicability" of other practices is influenced by cost either of the practices themselves or the enterprise system of which they are parts. It is to be expected, therefore, that different saturation levels of a practice will exist for neighborhoods that differ as to land use-suitability or scale of farm operations. In addition, the general level of education of farm operators in a neighborhood influences the use of each source of farm information and the readiness of farmers to be convinced of the utility of recommended practices. Since the factors which from the farmer's standpoint make a recommended practice "practical" and make it understandable are highly correlated, there is little wonder that certain neighborhoods take the lead both in the initial adoption of recommended practices and often in the extent of use finally attained.

The decline after 1955 in information source utilization in all types of neighborhoods and for all agricultural agencies and media except radio and television suggests that the influential factors mainly are of a general nature rather than specific to certain groups of farmers or information sources. There are several possible explanations: (a) a shift in emphasis by all agricultural agencies from personal contacts to radio and television as the means of dispensing information; (b) a coincidental change in the professional leadership of agricultural agencies; (c) a possibly diminished motivation by farmers to utilize agencies as information sources, owing to the depressed conditions of agriculture generally; and (d) a breakdown in organization and in local leadership. On the basis of information presently available there does not seem to be a single influential

factor, but problems relating to local professional and lay leadership seem to have been principally responsible.

Regardless of the explanation, the most important question is what effect, if any, has the decline in source utilization had on the use of recommended farm practices. It is widely known that the general level of practice utilization is dependent on the extent of contact with agricultural agencies and farm information media. Whether this relationship is linear over the range of information source utilization in question is not known precisely, but it seems so. Contacts with agricultural agency representatives are particularly important in clinching a farmer's decision to try new practices and in helping him to adapt general ideas to his particular situation. Although there are doubtless better reasons, as noted earlier, for the decline in use of certain recommended practices, one wonders to what extent the premature slow-down after 1955 in the rate of new practice adoption of certain other practices, such as soil testing, terracing and/or contouring, plowing of tobacco beds in the fall, and use of commercial fertilizer on corn, may be attributed to the decline in personal contacts with agricultural agency representatives.



TRENDS IN USE OF RECOMMENDED FARM PRACTICES  
AND OF FARM INFORMATION SOURCES IN 12 KENTUCKY NEIGHBORHOODS

by

C. Milton Coughenour and N. B. Patel<sup>1</sup>

In two earlier reports (4,9)<sup>2</sup> the recommended farm practices and farm information sources used by farmers in 12 neighborhoods in an Outer Bluegrass<sup>3</sup> county were shown. Compared with 1950, more farmers in 1955 were found to be using 11 of 12 recommended farm practices and 7 of 9 media of farm information. Farm operators' use of these practices and media was found to be related to the amount of education possessed by the farmer, his scale of farm operations, and the general level or extent of use of recommended farm practices in the neighborhoods in which he resided.

These findings were based on interviews with all the farm operators in 12 neighborhoods. The study neighborhoods were selected from the major land-use-suitability types in the county--Inner Bluegrass, Outer Bluegrass, and Hills of the Bluegrass.<sup>4</sup> This

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<sup>1</sup>Associate Professor of Rural Sociology and Graduate Assistant, respectively.

<sup>2</sup>Numbers in parentheses refer to reports listed in the Appendix.

<sup>3</sup>Economic Area 6. See State Economic Areas. Bureau of the Census, Washington, D. C.: 1951.

<sup>4</sup>See Land Areas of Kentucky and Their Potential for Use. Frankfort, Kentucky: Agricultural and Industrial Development Board of Kentucky with the Cooperation of the Soil Conservation Service, U.S.D.A., and the Agricultural Experiment Station, University of Kentucky, 1953.

The three use-suitability types are defined as follows:

- Inner Bluegrass--Undulating to rolling; mainly of soil suited for cultivation in crop rotations,
- Hills of the Bluegrass--Hilly to rolling; mainly of soils suited for continuous pasture, and, pasture with occasional cultivation,
- Outer Bluegrass--Rolling to undulating; mainly of soils suited for continuous pasture, and, pasture with occasional cultivation.

classification emphasizes the different possibilities for cultivated crops, pastures, and woodlands. In the general potential for farming, the farmers interviewed thus reflect the differences characteristic of the whole Bluegrass area, although in a statistical sense they are more typical of the Outer Bluegrass than of the area as a whole.

In 1960 a 50 percent sample of the farmers in these neighborhoods was interviewed. Since the interviews were conducted in the same neighborhoods each time, the findings can be used first to discern trends in the use of recommended practices and of information sources. Second, these trends can be related to certain economic and social characteristics of the neighborhoods which these researches have shown affect practice adoption and source utilization. This information will be of practical value to those planning educational programs for farm people, the main purposes of this progress report.

#### Why Identify Neighborhoods?

Information about new farm ideas typically flows through mass media to innovators and local adoption leaders in each community.<sup>5</sup> On the basis of their experiences and the recommendations of innovators and adoption leaders, as well as the recommendations of agricultural change agents, other farmers in the community are persuaded to try the practice. The rate of adoption is uneven, however, being slow at first, and then gaining with increasing rapidity until the bulk

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<sup>5</sup>How Farm People Accept New Ideas. Lexington: North Central Regional Publication 1, November 1955; Adopters of New Farm Ideas, Characteristics and Communications Behavior. North Central Regional Publication 13, October 1961.



of potential users have adopted it. Thereafter, new adoptions occur at less frequent intervals as the most resistant decide to try the practice. Typically, the frequency of initial adoptions when plotted against time describes a normal curve.<sup>6</sup> Neighborhoods differ as to the span of time or the characteristic shape of the normal adoption curve. In the proportion of adoptions some of the 12 neighborhoods, as the information in this report shows, lag as much as 10 years behind other neighborhoods. In the 1950 study it was found that the 12 neighborhoods could be grouped into "high," "medium," and "low" adoption areas on the basis of the mean practice adoption score of farm operators in each neighborhood (4). In the "low" adoption neighborhoods farm operators typically were using from 25 to 33 percent of the recommended practices applying to them compared with 39 to 44 percent in "medium," and 50 to 57 percent in "high" adoption neighborhoods.

Neighborhoods grouped on the basis of adoption level differ on other characteristics as well, notably median number of years of schooling completed, median value of gross sales, median socioeconomic status, median participation score in formal social organizations, dominant land use-suitability type, and the prevailing attitudes toward scientific farming (7,10,14). The characteristic

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<sup>6</sup>H. Earl Pemberton, "The Curve of Culture Diffusion Rate," American Sociological Review, 1 (August, 1936) 547-556; James Coleman, Elihu Katz, and Herbert Menzel, "The Diffusion of an Innovation among Physicians," Sociometry, 20 (December, 1957) 253-270; Bryce Ryan, "A Study in Technological Diffusion," Rural Sociology, 13 (September, 1948) 273-285; E. A. Wilkening, Acceptance of Improved Farm Practices. North Carolina Agr. Expt. Sta., Tech. Bul. 98, May 1952; E. A. Wilkening, Adoption of Improved Farm Practices as Related to Farm Factors. Wisconsin Agr. Expt. Sta., Res. Bul. 183, December 1953.

pace of adoption in neighborhoods thus is not accidental, but is a manifestation of the communication and influence structure in the community together with the characteristics of the individual farmers and their farming operations (15).

Identification of different types of neighborhoods as to practice adoption has considerable practical value for change agents.<sup>7</sup> Much greater dependence can be placed on the mass media and on farmers' own initiative in getting essential information and help in the "high" adoption than in the "low" adoption neighborhoods. In the "low" adoption neighborhoods change agents must take relatively greater responsibility themselves for establishing and maintaining personal channels of communication while dispensing useful farm information.

Because of their influence on the speed of adoption, three factors -- the median education in 1950, median gross sales in 1950, and dominant land-use-suitability characteristics of neighborhoods -- are used to reveal the principal differences among neighborhoods in adoption trends. The dominant land-use-suitability type of each neighborhood was determined by superimposing a map of the neighborhoods on an equal-sized map of use-suitability areas. Needless to say, the boundaries of the neighborhoods and those of the use-suitability areas did not always coincide, and a judgment had to be made as to which type predominates. For analysis purposes, the groupings of neighborhoods as to median education and median gross

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<sup>7</sup>The term "change agent" refers to those persons actively engaged in promoting improved farming techniques. It includes the County Extension Agent, Soil Conservation Service agent, Vocational Agricultural Agent, salesmen for farm supplies, and the like.



sales were made somewhat arbitrarily. The aim was to strike a balance between having equal class intervals and equal numbers of neighborhoods in each category.

For the neighborhoods studied, the association between educational level, scale of farming, and use-suitability was very high. These factors thus converge and reinforce each other in their impact on practice adoption and information source utilization.

Recommended Practices and the Definitions of Adoption Used in the Three Surveys

Rarely is adoption of a practice an all-or-none decision. Typically it occurs by stages, with a partial trial one year and, if that is successful, a complete and repeated use later. In many respects the first trial is the most crucial, since the probability is high that, once tried, a practice will be used increasingly thereafter. However, full-adoption cannot be said to have occurred until the practice is in regular use. Some practices, e.g., methyl bromide gas on tobacco beds, comprise only one of a number of alternatives having approximately equal utility and their use depends on the specific conditions. In this case it may be sufficient to know that the farmer has ever tried the practice. On the other hand, soil testing is a practice that must be used periodically and to know that a farmer has ever tried it does not provide assurance that he uses it periodically. Thus a stricter definition of adoption should be used.

The definition of adoption for each practice is as follows:

1. Soil testing: had had any soil tested during the 3-year period preceding the interview

2. Terracing, diversion ditches, and/or contouring: had made any terraces, diversion ditches, and/or had ever cultivated any fields on the contour
3. Plow tobacco beds in fall: had plowed tobacco beds in the fall preceding the interview (this practice was not included in 1950 study)
4. Methyl bromide gas: had ever used this gas to prevent weeds in tobacco beds
5. Bluestone-lime: had ever used the bluestone-lime treatment on tobacco beds
6. Fertilizer on corn: had used commercial fertilizer on corn one or both of the two years preceding the interview
7. Kenland red clover: was growing Kenland red clover at time of interview or had planted some in the year preceding the interview
8. Alfalfa: was growing alfalfa at the time of the interview (this practice was not included in 1950 study)
9. Calf vaccination: had all calves vaccinated for brucellosis in the year preceding the interview
10. Artificial breeding: had bred all cows artificially during the year preceding the interview
11. Phenothiazine in salt: had given sheep phenothiazine in salt at least once in the year preceding the interview
12. Phenothiazine drench: had drenched sheep with pheothiazine at least once in the year preceding the interview
13. All-pullet flock: had kept all-pullet flock in the year preceding the interview
14. Receipts and expenses: had kept records of receipts and expenses in the year preceding the interview



### Applicability of Practices

The percentage of farmers using each practice is based on the number having the enterprise to which the practice applies. Thus, the practice of calf vaccination is applicable to all farmers except those who have no cattle; artificial breeding unless no cows; phenothiazine treatment unless no sheep; fertilizer on corn unless no corn; terracing, diversion ditches and contouring unless all cropland is level or the farmer has less than two acres in crops. The keeping of farm records is, of course, a practice that applies to all farmers, regardless of what enterprises they have.

### Trends in Practice Utilization

#### The "Gaining" Practices (Table 1)

In the decade under review, nine of the 14 recommended practices were "gaining" practices in the sense that at each survey a large proportion of the farmers were using the practice than at the time of the preceding survey. Practices having uniform applicability over a long period of time, such as soil testing, terracing, diversion ditches and/or contouring, and keeping records of receipts and expenses, showed steady increase in use. Methyl bromide gas and artificial breeding, although used with increasing relative frequency, are at a low level of adoption compared with other practices.

Regardless of whether they were using a practice, farmers were asked under what conditions they would use it. It was hoped that this would provide information as to the circumstances under

Table 1

Percentage of Farmers Who Had Adopted Specified Recommended Practices,  
1950, 1955, and 1960\*

Practice	Year		
	1950	1955	1960
---- Percent ----			
<u>Gaining Practices</u> (increasing adoption over the 10 years)			
Soil Testing	19	53	58
Terracing and/or contouring	20	34	38
Plow tobacco beds in fall**	-	25	28
Methyl bromide gas	1	6	9
Fertilizer on corn**	-	65	70
Kenland red clover	8	17	26
Alfalfa**	-	27	44
Artificial breeding	7	9	13
Keeping receipts and expenses	33	39	65
<u>Stable or Declining Practices</u> (decreasing or stable adoption over the 10 years)			
Bluestone-lime	51	79	75
Calf vaccination	14	16	16
Phenothiazine with salt	59	66	53
Phenothiazine drench	60	76	62
All-pullet flock	25	39	16

\*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies.

\*\*Not included in the 1950 study.

which farmers use or do not use particular practices. The answers are instructive mainly from the standpoint of the beliefs which farmers hold concerning the usefulness and limitations of, or alternatives to, each practice.



For instance, it is perhaps not surprising that the 106 farmers in 1960 who had ever had soil tested said they had done so to determine fertilization needs. Only about 7 out of 10 of these farmers,<sup>8</sup> however, had had soil tested for any purpose in the past 3 years. Perhaps more important, only a little more than half the farmers who had ever had soil tested had done so for the positive purpose of continually evaluating and up-grading the fertility of their soil. The remainder seem to take the position that soil testing is to be used in case of crop failure, to meet A. S. C. program requirements, or when the farmer's "inherent" soil sense fails. Interestingly, 3 out of 4 farmers who had never had any soil tested said that they might do so if they needed to know how much commercial fertilizer to use; apparently, they either do not use commercial fertilizer or consider that their intuitions as to the requirements are satisfactory.

Nearly all farmers using commercial fertilizer on corn in 1960 were convinced that it produced larger yields and regularly applied it. Even so the amount applied almost always depended on convention or what a standard application was considered to be. Only 1 in 8 fertilizer users volunteered the information that the extent of fertilizer use should depend on the results of a soil test. Opinions of farmers growing corn but not using fertilizer were divided along two lines. One-half recognized that it would increase yields but were unconvinced that

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<sup>8</sup>This is 58 percent of the 140 farmers in the entire sample (Table 1). The estimated proportion of farmers in the 12 neighborhoods who have had soil tests made during this period seems somewhat excessive when compared to the soil test records of the actual tests made in the county.

it was worth the cost in time or effort, either because they considered their acreages too small (26 percent), corn too cheap, (13 percent), or that fertilizer for tobacco came first (11 percent); 29 percent considered that fertilizer was unnecessary if, as they were doing, corn was grown on river bottom land, new sod, or where yields had been satisfactory.

Farmers who had plowed their tobacco beds in the fall of 1959, as well as those who had not done so, generally lacked complete understanding of the purpose for fall plowing. About half of those who had plowed in the fall had done so to conserve moisture; 20 percent thought that it helped control weeds, and 1 in 10 did it mainly to save time in the spring and to control plant bed diseases and insects. Farmers who had not plowed their beds the preceding fall thought it might be helpful in conserving moisture or making the soil more tillable (33 percent), in killing weed seed (16 percent), or in saving time in the spring (26 percent). Except for the 15 percent of each group who gave no clear reason for fall plowing, the reasons given in each case have merit. Even so, no farmer gave more than one or two of the reasons for fall plowing and many gave no reason. In view of their incomplete knowledge about fall plowing, the erratic use of this practice thus is not surprising.

The relatively low frequency of using methyl bromide gas is attributable in the farmers' minds to the existence of a plentiful wood supply for burning beds and to other equally good alternatives.

In addition to the relatively small percentage of farmers using artificial breeding altogether, twice that number said they



were breeding their best animals artificially to strengthen their herds. Farmers who were not using artificial breeding at all in 1960 either considered it unpractical for beef herds of grade cattle (26 percent), or thought that keeping a bull was just as good or perhaps better (29 percent).

In regard to the big increase in keeping records of receipts and expenses after 1955, the advent of Old Age and Survivors Insurance for farmers in 1955 seems to have had more than a coincidental importance.

#### Stable or Declining Practices

Several practices that had gained in use during the first half of the decade thereafter either showed no gain or declined in extent of use. In most cases this was due either to the partial obsolescence of the practice itself or to the progressive abandonment of the enterprise as a commercial venture in the survey area. Phenothiazine, which performed well at first on internal parasites of sheep, later lost its effectiveness in part, and, on the recommendation of the University, herdsmen turned to other treatments in whole or in part. By 1960, phenothiazine in salt was considered effective only in slowing infection after use of a recommended drench. Of the farmers with sheep in 1960 who were not using phenothiazine in salt, 46 percent felt it could be used as a preventive after drenching but were relying on drenching practices alone; and 30 percent had no clear understanding of the reason for using or not using phenothiazine in salt.

In 1960, 20 percent of the farm operators surveyed had no chickens at all, and less than 4 percent of the remainder had more than 75 laying hens. Thirty percent of those with laying hens but

not keeping an all-pullet flock said they would do so if they were selling eggs commercially. The responses of the others reflect a lack of incentive to keep an all-pullet flock, which they related to the low value of eggs commercially.

Between 1955 and 1960 the proportion of farmers in these neighborhoods who reported that they had ever used bluestone-lime on their plant beds dropped from 79 to 75 percent, while the percentage of "ever" users actually treating their plant beds with bluestone-lime in the survey year declined from 70 percent in 1955 to 13 percent in 1960.<sup>9</sup> Doubtless, the drop in the recent application of bluestone-lime reflects the decline in the incidence of wildfire and angular leaf spot and the diminished attention given to treatment for the disease by the Extension Service.

Despite the extent to which bluestone-lime has been used by farmers in these neighborhoods, only a minority seem to have an adequate understanding of what to use it for or when to use it. In response to the question under what conditions would you use bluestone-lime, only 18 percent of those who had used it in the past suggested that it would prevent wildfire, and many of these thought it would also kill blue mold. Forty-three percent thought it would kill insects and prevent "some disease;" 19 percent replied that they would use it if "something was working on the plants," or "to keep the leaves from falling off," or "to prevent some disease," or that they had used DDT, or lime, or nitrate instead of bluestone-lime. It is thus evident that considerable re-education must take place if in the future farmers are to use bluestone-lime effectively.

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<sup>9</sup>Of the farmers in 1950 who had ever used bluestone-lime, 89 percent used it or were planning to use it that year.



Table 2

Percentage of Farm Operators Using Specified  
Farm Practices, by Educational Level of  
Neighborhood, 1950, 1955, and 1960\*

Practice	Median Years of Education in Neighborhood								
	4.4-7.4			7.5-8.4			8.5-9.9		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	----- Percent -----								
<u>Gaining Practices</u>									
Soil testing	5	27	43	23	65	65	35	80	74
Terracing and/or contouring	1	10	8	17	40	44	53	67	73
Plow tobacco beds in fall**	-	24	23	-	26	23	-	27	45
Methyl bromide gas	0	2	7	1	3	6	3	15	16
Fertilizer on corn**	-	41	47	-	82	78	-	80	90
Kenland red clover	10	11	18	0	19	27	11	24	39
Alfalfa**	-	23	30	-	21	48	-	43	61
Artificial breeding	1	2	2	7	11	10	16	18	33
Keeping receipts and expenses	15	25	53	37	46	58	56	51	100
<u>Stable or Declining Practices</u>									
Bluestone-lime	32	66	61	57	86	83	73	90	87
Calf vaccination	5	3	9	13	13	8	29	41	39
Phenothiazine with salt	34	51	36	63	74	60	77	68	56
Phenothiazine drench	36	68	36	69	79	64	73	77	81
All-pullet flock	12	29	11	32	45	9	35	46	36

\*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies.

\*\*Not included in the 1950 study.

Farm Practice Trends and Educational Level of Neighborhood (Table 2)

The association between the extent of use of farm practices in a neighborhood and the educational level of the neighborhood is high. The higher the educational level, the more rapidly recommended

practices were adopted and, generally, the greater the extent of adoption. It is pertinent to ask, how much did farmers in neighborhoods with low educational levels lag behind those in neighborhoods with higher educational levels? This is reflected in the comparative proportions of farmers using each practice at different time periods. For "gaining" practices in general, proportionately fewer farmers in 1960 in low-education neighborhoods had used each practice than had farmers in 1955 in medium-education neighborhoods, or in 1950 in high-education neighborhoods. Compared with high-education neighborhoods, farmers in the "low" neighborhoods thus lagged as much as 10 years or more behind, while those in "medium" neighborhoods were 5 years behind in extent of practice adoption. The importance of more than an eighth grade level of education in a neighborhood is most clearly indicated in the keeping of receipt and expense records. While each of the farmers interviewed in 1960 in the "high" neighborhoods was keeping these records, this was true for less than 6 in 10 farmers in neighborhoods where educational levels were lower.

It is noteworthy that the most extensive use of the gaining practices occurred in the high-education neighborhoods. In the latter neighborhoods a utilization plateau already has been reached for some practices. Soil testing, for example, grew throughout the decade in extent of use only in the low-education neighborhoods; after 1955 there was no change in the extent of use of soil testing among farmers in neighborhoods with medium and high educational levels.



Table 3

Percentage of Farm Operators Using Specified  
Farm Practices by Dominant Land-Use-Suitability of Neighborhood  
of Residence, 1950, 1955, and 1960 \*

Practice	Land-Use-Suitability Type of Neighborhood								
	Hills of Bluegrass			Outer Bluegrass			Inner Bluegrass		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	----- Percent -----								
<u>Gaining Practices</u>									
Soil testing	5	26	44	22	65	65	34	68	65
Terracing and/or contouring	2	8	6	24	42	47	39	58	62
Plow tobacco beds in fall**	-	27	24	-	23	27	-	29	39
Methyl bromide gas	0	0	2	1	4	9	4	18	19
Fertilizer on corn**	-	42	40	-	74	78	-	81	92
Kenland red clover	13	10	22	3	17	24	12	27	38
Alfalfa**	-	25	33	-	24	46	-	38	77
Artificial breeding	1	2	3	7	10	7	15	17	40
Keeping Receipts and expenses	16	28	59	36	45	60	54	41	89
<u>Stable or Declining Practices</u>									
Bluestone-lime	33	66	65	57	87	78	65	81	85
Calf vaccination	5	3	11	14	17	10	25	34	38
Phenothiazine with salt	33	45	33	64	75	61	69	65	53
Phenothiazine drench	33	69	42	66	83	61	71	67	80
All-pullet flock	12	30	15	32	40	16	30	50	20

\*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies.

\*\*Not included in the 1950 study.

Farm Practice Trends and Land-Use-Suitability Type of Neighborhood (Table 3)

Most practices spread more rapidly and were used by proportionately larger numbers of farmers in the Inner Bluegrass than

in the Outer Bluegrass neighborhoods, and they were more widely used in the latter than in the Hills of the Bluegrass neighborhoods.

In both Inner and Outer Bluegrass neighborhoods, under existing educational and promotional programs, soil testing has attained a utilization plateau -- about 2 out of 3 farmers test soil for some purpose at least once in a 3-year period. Fortunately, soil testing still seems to be growing in extent of use among farmers in the Hills of the Bluegrass neighborhoods, but in rate of utilization this group lags behind farmers in the other two types of neighborhoods. Terracing and/or contouring also seems to have attained a utilization plateau in these three types of neighborhoods, but the plateau is at a different level in each type. Interestingly, the level of utilization attained is directly opposite to that which might be expected in terms of need for the practices; in 1960 about 6 in 10 farmers in the Inner Bluegrass had terraces and/or had farmed on the contour compared with less than 1 in 10 in the Hills of the Bluegrass neighborhoods. In the Hills of the Bluegrass neighborhoods many farmers consider that their cropland is either too steep for terracing to be practicable or that it is not seriously affected by washing. In response to the question "Would a farmer ever terrace his land?" 36 percent of those in the Hills neighborhoods who had not terraced replied that they would do so if they had rolling cropland (not too steep) which was subject to washing.

Farm Practice Trends and Scale-of-Farming Type of Neighborhood (Table 4)

The effect of the prevailing scale of farm operations on practice adoption in neighborhoods is most evident in regard to



Table 4

Percentage of Farm Operators Using Specified Farm Practices, by Median Neighborhood Value of Products, 1950, 1955, and 1960\*

Practice	Median Value of Crops and Products of Neighborhoods, 1950								
	<u>\$1100-\$1999</u>			<u>\$2000-\$2999</u>			<u>\$3000-\$3999</u>		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	-----			Percent			-----		
<u>Gaining Practices</u>									
Soil testing	7	34	43	26	66	77	35	80	74
Terracing and/or contouring	5	14	21	16	44	38	53	67	73
Plow tobacco beds in fall**	-	23	21	-	30	29	-	27	45
Methyl bromide gas	0	1	7	1	5	6	3	15	16
Fertilizer on corn**	-	46	53	-	87	80	-	80	90
Kenland red clover	8	11	19	0	21	29	11	24	39
Alfalfa**	-	48	32	-	21	53	-	43	61
Artificial breeding	1	2	2	8	13	15	16	18	33
Keeping receipts and expenses	19	33	48	38	37	71	56	51	100
<u>Stable or Declining Practices</u>									
Bluestone-lime	34	71	67	63	85	82	73	90	87
Calf vaccination	6	4	10	14	15	7	29	41	39
Phenothiazine with salt	37	54	43	65	78	61	77	68	56
Phenothiazine drench	23	72	43	67	78	67	73	77	81
All-pullet flock	18	28	9	27	53	14	35	46	36

\*For each practice, the percentages are based on the number of farmers having the enterprise to which the practice applies.

\*\*Not included in the 1950 study.

those practices that are most costly in themselves or are tied to specialized types of farming, such as the livestock and poultry enterprises. Thus, by 1960 terracing and/or contouring, calf vaccination, artificial breeding, phenothiazine drench, and an

all-pullet flock were used to a considerably greater extent in the large-scale-of-farming neighborhoods than in those of medium- or small-scale farms. Moreover, in the last half of the decade the most progress in using artificial breeding, growing alfalfa, and growing Kenland red clover was made in the largest-scale neighborhoods. While phenothiazine drench was used to a lesser extent in the small- and medium-scale neighborhoods after 1955, it was used to a greater extent in the largest-scale neighborhoods. At the same time the decline in using calfhood vaccination for brucellosis and in keeping an all-pullet flock was the least pronounced in neighborhoods where the largest scale of farm operations prevailed.

#### Sources of Farm Information

Communication is a prerequisite in the diffusion process. Farmers cannot adopt new ideas until they have heard about them. Research has shown that farmers usually first learn about new ideas through one of the mass media, but they tend to rely on the opinions of agricultural agency representatives and of other farmers about the practice before actually trying it themselves. In this report the purpose is to examine the trends during the decade in the use of different information channels and their relationships to certain characteristics of the neighborhoods.

The questions asked in the 1950, 1955, and 1960 surveys were designed to determine, in each case, whether the farmer had obtained any farm information at all from the given source during the two-year period preceding the interview. A farmer



was considered to have had contact with or to have used a source if the following obtained:

1. County Agricultural Extension Service -- any information, ideas, or help of any kind from the county agent or through his office
2. Soil Conservation Service agent -- any information, idea, or help of any kind
3. Agricultural Stabilization and Conservation program representatives -- any farming information, ideas, or help of any kind
4. Vocational agriculture teacher -- any farming information, ideas, or help of any kind
5. Kentucky Agricultural Experiment Station -- any information, ideas, or help of any kind
6. Newspapers -- any farming information, ideas, or help of any kind
7. Farm magazines -- read farm magazines
8. Radio -- listened to farm programs
9. Television -- watched any farm programs
10. Agricultural agency farm meetings -- attended any farm meetings
11. Agricultural agency representatives -- talked personally to any representatives
12. County Extension Agent's Letters -- read any circular letters
13. Farm bulletins -- read or referred to any bulletins
14. Dealers and Salesmen -- any farming information, advice, or suggestions

Table 5

Percentage of Farmers Who Reported Use of Specified Sources of Farm Information, 1950, 1955, and 1960

Source of Farm Information	Year		
	1950	1955	1960
	----- Percent -----		
<u>Agricultural Agencies</u>			
Agricultural Extension Service	71	76	62
Soil Conservation Service	34	59	36
Agricultural Stabilization and Conservation	30	58	41
Vocational agriculture teachers	6	17	3
Agricultural Experiment Station	19	37	14
<u>Media or Channels</u>			
Newspapers	67	69	51
Farm magazines	82	81	79
Radio	86	85	89
Television*	-	41	65
Agency farm meeting	33	42	29
Agricultural agency representatives	57	62	53
County agent's letters	76	86	81
Farm bulletins	46	67	52
Dealers and salesmen	33	55	31
Number of farm operators	(393)	(343)	(140)

\*Not available in these neighborhoods in 1950.

Utilization of Farm Information Sources (Table 5)

From 1950 to 1955 farmers expanded their contacts with the five agricultural agencies (1 to 5 above), but in the period 1955 to 1960 use of these agencies as information sources declined dramatically,



especially contact with the Soil Conservation Service and the Agricultural Experiment Station.

Between 1950 and 1955 there were gains in the extent of use of most media as farm information sources, but from 1955 to 1960 the utilization of media for farm information purposes declined, except for radio and television. Especially notable is the decline in the relative number of farmers having personal contact with dealers, salesmen, and agricultural agencies through meetings and personal visits. More than ever before these farm operators in 1960 were depending on mass media to obtain essential farm information.

In view of the general growth during the first half of the decade in information source utilization, how is the general decline in source utilization during the second half to be explained? The fact that it applies to all agricultural agencies and media except radio and television suggests that the influential factors are general rather than specific to certain information sources. Since, as shown below, the downward trend prevailed in neighborhoods of all types, the influential factor(s) also must stem from conditions affecting all rather than specific groups of farmers.

Since only radio and television retained or increased their audiences and since these require a minimum of the farmer's effort, time, and money, one immediately suspects that the decline is associated with the increased age of farm operators and their dwindling energy and motivation to keep up-to-date on farm practices. In fact, however, the aging of farmers in these neighborhoods can account for little, if any, of this decline. Farmers

do not begin to reduce markedly their communications activities until after age 65, and in the 12 neighborhoods the proportion of farmers of this age remained nearly stable from 1950 to 1960 (15 and 17 percent, respectively.)<sup>10</sup>

Although the possibility cannot be entirely ruled out, it seems improbable that the generally depressed conditions in agriculture after the Korean War could have depressed farmers' motivation to seek information sources. The parity ratio was 101 in 1950 but began dropping toward the end of the Korean War; by 1955 the index had reached 84, and it was 81 in 1959. Farmers have thus experienced great difficulty in maintaining satisfactory income levels despite considerable increases in the scale of farm operations. But the indications are that this has served generally to increase rather than to decrease farmers' efforts to improve their farming operations.

The different trends in information source utilization might have occurred if there had been a coincidental tendency among all or most agricultural agencies to place greater emphasis on radio and television to disseminate farm information and less emphasis on personal contact and use of printed media. There is some evidence that one of the agricultural agencies used radio more after 1953 while personal contacts declined somewhat. But, there is no indication that this also applied to other agencies, and, therefore, the likelihood that the trends observed are due to such a shift

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<sup>10</sup>The median age of farm operators interviewed increased from 46.2 in 1950 to 51.8 in 1960.



in emphasis on media is small.

Having possibly the greatest significance are two factors that may be inter-related to some extent. One is the changes which took place in the 1955 to 1960 period in the local professional leadership in both the Soil Conservation Service and the teaching of Vocational Agriculture.<sup>11</sup> When a change in professional leadership occurs there is inevitably some disorganization in program for a period of time. Similar kinds of effects are produced when a break-down in local lay leadership occurs owing to either local conflict or retirement of important local leaders for whom replacements are not readily available. Of interest in this respect is the trend during the decade in farmers' participation in formal organization. The median social participation score of farmers surveyed in 1950 was 9.8; it rose to 12.4 in 1955 but had declined to 10.0 in 1960, or nearly the level of 10 years earlier. It thus seems likely that the decline in source utilization is due to some disorganization in both professional and lay leadership activity.

Utilization of Information Sources and Educational Level of Neighborhood  
(Table 6)

Compared with neighborhoods where educational levels were low, farmers in neighborhoods where the levels were high were making considerably greater use of each agricultural agency in 1950, and these differences in utilization level were maintained in 1955 and 1960. Moreover, in 1950 and 1960 7 of the 8 media (television excepted) were being used by half or more of the farmers in the high-educational-

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<sup>11</sup>Vocational Agriculture is taught in only one of the high schools in the county and for a short period the high school was without a teacher in this subject.

Table 6

Percentage of Farmers Who Reported Using Specified Sources of Farm Information, by Educational Level of Neighborhood, 1950, 1955, and 1960

Source of Farm Information	Median Years of Education in Neighborhood								
	4.4-7.4			7.5-8.4			8.5-9.9		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	-----			Percent			-----		
<u>Agricultural Agencies</u>									
Agricultural Extension Service	58	70	47	75	76	69	87	84	77
Soil Conservation Service	17	57	19	37	56	46	57	68	52
Agricultural Stabilization and Conservation	23	62	32	32	58	48	39	52	45
Vocational agriculture teachers	3	13	2	10	19	6	6	22	0
Agricultural Experiment Station	11	13	4	20	50	12	30	57	36
<u>Media or Channels</u>									
Newspapers	52	48	35	71	84	58	85	84	71
Farm magazines	71	75	68	87	80	81	93	91	94
Radio	82	88	90	88	80	87	89	88	94
Television*	-	34	53	-	40	71	-	54	77
Agency farm meeting	19	24	11	35	44	33	53	70	58
Agricultural agency representatives	34	41	30	64	70	62	82	84	81
County agent's letters	63	73	67	84	93	87	86	98	97
Farm bulletins	28	47	33	50	80	56	69	83	81
Dealers and salesmen	27	49	19	29	58	37	49	61	45
Number of farm operators	(156)	(138)	(57)	(139)	(123)	(52)	(98)	(82)	(31)

\*Not included in the 1950 study.

level neighborhoods, but this was so for only 3 of the 8 media in the neighborhoods where educational levels were low.

Except for radio and television the pattern of rise and decline in farm information source utilization applies to neighborhoods of each



educational level. However, for several sources, notably newspapers, agency representatives, county agent's circular letters, farm bulletins, and dealers and salesmen, the decline in utilization was less in the neighborhoods of highest education than in either the medium or low neighborhoods. It is unfortunately evident that in neighborhoods where educational and information source levels were the lowest in 1950 the farmers made no overall progress during the decade in attaining higher levels of information source utilization.

Utilization of Information Sources and Dominant Use-Suitability Type of Neighborhood (Table 7)

Except for radio and television the rise and decline pattern generally characterizes the utilization both of agricultural agencies and of media in all three land-use-suitability types of neighborhoods. For most sources, however, utilization levels were highest at each survey period in the Inner Bluegrass Neighborhoods followed in order by the Outer, and Hills of the Bluegrass neighborhoods.

Utilization of Information Sources and Scale-of-Farming Neighborhood Type (Table 8)

The rise and decline trends in source utilization generally prevailed in neighborhoods at all economic-scale levels. However, at each survey period the largest proportions of farmers using each source were found in neighborhoods where the largest-scale farm operations in 1950 existed.

Table 7

Percentage of Farmers Who Reported Using Specified Sources of Farm Information, by Land-Use-Suitability Type of Neighborhood 1950, 1955, and 1960

Source of Farm Information	Land-Use-Suitability of Neighborhoods								
	Hills of Bluegrass			Outer Bluegrass			Inner Bluegrass		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	----- Percent -----								
<u>Agricultural Agencies</u>									
Agricultural Extension Service	53	63	57	79	83	66	82	78	62
Soil Conservation Service	17	52	20	43	61	43	41	65	50
Agricultural Stabilization and Conservation	22	53	35	33	62	49	35	57	31
Vocational agriculture teachers	2	15	2	9	15	4	5	26	0
Agricultural Experiment Station	12	13	4	20	44	13	29	61	31
<u>Media or Channels</u>									
Newspapers	53	46	37	71	79	59	79	86	58
Farm magazines	70	72	70	87	84	81	90	88	88
Radio	84	89	91	85	84	84	90	83	96
Television*	-	33	52	-	42	68	-	52	81
Agency farm meeting	19	27	13	37	44	35	46	61	42
Agricultural agency representatives	37	39	37	62	71	56	74	77	73
County agent's letters	60	71	70	86	93	85	78	96	88
Farm bulletins	29	44	35	50	78	53	66	80	81
Dealers and salesmen	24	50	24	34	58	31	45	57	46
Number of farm operators	(129)	(111)	(46)	(182)	(163)	(68)	(82)	(69)	(26)

\*Not included in the 1950 study.



Table 8

Percentage of Farmers Who Reported Using Specified Sources of Farm Information, by Scale of Farming Type of Neighborhood 1950, 1955, and 1960

Source of Farm Information	Median Value of Crops and Products of Neighborhoods, 1950								
	<u>\$1100-\$1999</u>			<u>\$2000-\$2999</u>			<u>\$3000-\$3999</u>		
	1950	1955	1960	1950	1955	1960	1950	1955	1960
	----- Percent -----								
<u>Agricultural Agencies</u>									
Agricultural Extension Service	59	70	53	79	79	68	87	84	77
Soil Conservation Service	20	56	25	40	57	47	57	68	52
Agricultural Stabilization and Conservation	25	61	35	31	57	50	39	52	45
Vocational agriculture teachers	3	16	4	12	15	3	6	22	0
Agricultural Experiment Station	11	16	4	24	60	15	32	57	35
<u>Media or Channels</u>									
Newspapers	56	55	39	70	84	62	85	84	71
Farm magazines	74	78	71	86	78	82	93	91	94
Radio	81	89	84	93	76	97	89	88	94
Television*	-	39	57	-	32	71	-	54	77
Agency farm meeting	22	27	13	37	46	38	53	70	58
Agricultural agency representatives	39	44	35	66	75	68	82	84	81
County agent's letter	67	77	72	84	94	85	86	98	97
Farm bulletins	30	53	37	55	80	59	69	83	81
Dealers and salesmen	28	50	24	28	60	35	49	61	45
Number of farm operators	(195)	(174)	(75)	(100)	(87)	(34)	(98)	(82)	(31)

\*Not included in the 1950 study.

APPENDIX

Publications Originating from the Continuing  
Study of Farm Practice Diffusion in Kentucky

1. Marsh, C. P., and Coleman, A. L., "Farmers' Practice-Adoption Rates in Relation to Adoption Rates of Leaders." Rural Sociology, 19 (June 1954) pp. 180-183.
2. Marsh, C. P., and Coleman, A. L., "The Relation of Kinship, Exchanging Work and Visiting to the Adoption of Recommended Farm Practices." Rural Sociology, 19 (September 1954) pp. 291-293.
3. Marsh, C. P., and Coleman, A. L., "The Relation of Neighborhood of Residence to Adoption of Recommended Farm Practices." Rural Sociology, 19 (December 1954) pp. 385-389.
4. Marsh, C. P., and Coleman, A. L., Communication and the Adoption of Recommended Farm Practices. Lexington: Kentucky Agricultural Experiment Station Progress Report 22, November 1954.
5. Coleman, A. L., and Marsh, C. P., "Differential Communication Among Farmers in a Kentucky County." Rural Sociology, 20 (June 1955) pp. 93-101.
6. Marsh, C. P., and Coleman, A. L., "The Relation of Farmer Characteristics to the Adoption of Recommended Farm Practices." Rural Sociology, 20 (September-December 1955) pp. 289-296.
7. Marsh, C. P., and Coleman, A. L., "Group Influences and Agricultural Innovations: Some Tentative Findings and Hypotheses." American Journal of Sociology, 61 (May 1956) pp. 588-594.
8. Young, J. N., and Coleman, A. L., "Where and How Farm People Get New Ideas." Kentucky Farm and Home Science, Vol. 4, No. 2, (Spring 1956) pp. 4, 11.
9. Young, J. N., and Marsh, C. P., The Adoption of Recommended Farm Practices and Sources of Farmer Information. Lexington: Kentucky Agricultural Experiment Station Progress Report 40, October 1956.
10. Young, J. N., "The Influence of Neighborhood Norms on the Diffusion of Recommended Farm Practices." Lexington: University of Kentucky, 1959 (unpublished Ph.D. dissertation).



11. DeJong, Gordon, and Coughenour, C. M., "What's Happening to Kentucky Rural Neighborhoods?" Kentucky Farm and Home Science, Vol. 4, No. 3, (Summer 1958).
12. Coughenour, C. M., "Who Uses the County Extension Agent?" Kentucky Farm and Home Science, Vol. 4, No. 3, (Summer 1958).
13. Coughenour, C. M., Agricultural Agencies as Information Sources for Farmers in a Kentucky County, 1950-55. Lexington: Kentucky Agricultural Experiment Station Progress Report 82, November 1959.
14. Young, J. N., and Coleman, A. L., "Neighborhood Norms and the Adoption of Farm Practices." Rural Sociology, 24 (December 1959) pp. 372-380.
15. Coughenour, C. M., "The Functioning of Farmers' Characteristics in Relation to Contacts with Media and Practice Adoption." Rural Sociology, 25 (September 1960) pp. 263-297.
16. DeJong, Gordon F., and Coughenour, C. Milton, "Reliability and Comparability of Two Instruments for Determining Reference Groups in Farm Practice Decisions." Rural Sociology, 25 (September 1960) pp. 298-307.
17. Coughenour, C. M., "The Practice Use-Tree and the Adoption, Drop-Out, and Non-Adoption of Recommended Farm Practices: A Progress Report," paper read at Rural Sociological Society Meeting at Ames, Iowa, August 1961.