

# *Kentucky* FARM AND HOME *Science*

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## READ—

Changes in  
Neighborhoods

Who Uses  
County Agent?

Pasture Trials

Short Reports



# Kentucky FARM AND HOME Science

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## The Cover



A colorful scene on many Kentucky farms during the late summer is that produced by a field of burley tobacco in bloom. Symbolic of the harvest soon to come are the plants in this close-up photograph made on the Kentucky Agricultural Experiment Station Farm by Robert C. May.

# What's Happening to Kentucky Rural Neighborhoods?

Study of 12 Washington county neighborhoods reveals characteristics of new and old residents

By GORDON DEJONG and C. MILTON COUGHENOR<sup>1</sup>

There has hardly been a time in Kentucky history when the inward and outward movement of rural people has not created problems for local rural communities. Of particular concern in recent decades has been the movement out of rural neighborhoods to the villages and cities. In attempting to analyze these movements and their implications for local neighborhoods, several questions may be asked. How much out-movement and in-movement is there in farm neighborhoods? In comparison with permanent residents, what kinds of farmers left the neighborhood and came in?

In recent Kentucky Agricultural Experiment Station studies in Washington county, information was gathered concerning mobility in 12 neighborhoods. Washington county is located in the Outer Bluegrass economic area and is predominantly agricultural. In this county farmers fare considerably better than in most counties, as is indicated by a level-of-living index that in 1950 was 29 points above the state average.<sup>2</sup> The 12 neighborhoods in which the 1950 and 1955 surveys were made were selected to represent the range of agricultural conditions in the county.

## Out-Movement and In-Movement

The broad picture of outward movement for the survey areas is shown by a decrease from 393 farm operators in 1950 to 343 in 1955. Of the 393 farm operators interviewed in 1950, only 277 (70 percent) were still farming in the survey area by 1955. This loss, however, was partially offset by an influx of 66 new farmers between 1950 and 1955, which made a net loss of 13 percent for the 5-year period. This loss

of farmers was slightly larger than that estimated for the entire county (11 percent).<sup>3</sup>

For purposes of further analysis, farm operators were classified into three groups. Group A farm operators were residents in the survey areas in both 1950 and 1955. Group B are those farm operators who had lived in the areas in 1950, but who had left the survey neighborhoods by 1955. Farm operators who had become residents in the survey areas between 1950 and 1955 are in Group C.

## What Kinds of Farmers Left?

Comparison of the farmers who left (Group B) with those who remained (Group A) not only permits one to see how the two groups differ, but also points to possible reasons for the out-migration. Significantly, the two groups of farm operators were alike with regard to education, age, sources of farm information used and level of technological competence in farming, socio-economic status, income, amount of work done off-the-farm, size of family, number of friends, and participation in social organizations. Thus, within limits of these indices, the ones who left were as competent and successful at farming and as well integrated into the social life of these neighborhoods as those who remained. From a somewhat different point of view, the neighborhoods lost neither the best nor the worst farm operators but some of all types.

Of the characteristics measured, the two groups of operators differed only as to tenure. Thirty percent of those who left as compared with 12 percent of those who remained were tenant operators.

Three likely bases for the out-migration of tenants are:

(1) They may have moved to another location to become farm owners or to obtain a better farm to rent.

<sup>1</sup>The authors are Graduate Assistant and Associate Rural Sociologist in the Department of Rural Sociology, respectively.

<sup>2</sup>Hagood's level-of-living index, 1950, for Washington county was 115 as compared with the state average of 86. Margaret J. Hagood, Gladys K. Bowles, and Robert R. Mount, *Farm-Operator Family Level-of-Living Indexes*. U. S. Department of Agriculture, Agricultural Marketing Service, Statistical Bulletin 204 (March 1957).

<sup>3</sup>Paul D. Richardson, *Population Estimates for Kentucky Counties*, Ky. Agr. Expt. Sta. Prog. Rept. 31 (June 1955).

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Income, socio-economic status, membership in groups, education are important factors to consider in determining

## Who Uses the County Extension Agent?

By C. MILTON COUGHENOUR

"He serves best those whom he knows best" is a rule which seems to apply particularly to county agent and farmer relationships.

An understanding of the farmer and his situation, although not sufficient by itself, greatly facilitates effective communication and service. Too often, however, the agent's understanding of farmers in his county is limited to that select group already practicing up-to-date farming methods.

Farmers using out-dated practices are much less likely to be recognized personally or understood. Lacking contact with the agent, these farmers usually are poorly informed as to the help the agent can provide and are not disposed to accept it when offered.

### 285 Farmers Surveyed

It is in this context that some of the data obtained in 1950 and 1955 surveys of 285 farmers in Washington county are important.<sup>1</sup> How many farmers regularly, and never obtained help from the agent is determined; also, some factors associated with seeking help from the agent and the effects or consequences of the different patterns of using the agent are examined.

The farmers surveyed lived in 12 neighborhoods which were selected to represent the major areas or types of farming conditions in the county. In some neighborhoods the land is quite hilly and in others it is gently rolling. Average farming conditions are somewhat above that for the state as a whole as indicated by a farm operator level-of-living index in 1950 that was 34 percent above that of the state.<sup>2</sup>

In both surveys farmers were asked: "During the past two years have you got any information, ideas, or help of any kind from the county agricultural agent or through his office?" "Help" from the agent was de-

<sup>1</sup> Although more than the 285 farmers were interviewed in each survey, only the 285 were interviewed in both years. Except for being predominantly farm owners, the 285 farmers were much like the remainder interviewed in each survey and for present purposes may be considered representative of the survey neighborhoods.

For previous reports of these studies see especially the following publications of the Kentucky Agricultural Experiment Station: C. Paul Marsh and A. Lee Coleman, *Communication and the Adoption of Recommended Farm Practices*, Progress Report 22 (Nov. 1954), and James N. Young and C. Paul Marsh, *The Adoption of Recommended Farm Practices and Sources of Farmer Information*, Progress Report 40 (Oct. 1956).

<sup>2</sup> Margaret J. Hagood, Gladys K. Bowles, and Robert R. Mount, *Farm-Operator Family Level-of-Living Indexes*. U. S. Department of Agriculture, Agricultural Marketing Service, Statistical Bulletin 204 (March 1957).



A multitude of services is offered farmers in Kentucky counties by their county extension offices. In this photograph, the man on the right is bringing a soil sample to be tested and recommendations made.

finied in the broadest sense and may have been obtained at meetings, by mail, or in person. On the basis of their responses farmers were classified into groups:

*Regularly helped* —farmers who reported in both surveys that they had been helped (at least once) by the county agent.

*Irregularly helped* —farmers who reported in only one of the two surveys that they had been helped.

*Never helped* —farmers who reported in both surveys that they had not been helped by the county agent.

Of every 10 farmers surveyed, 6 were regularly helped, 3 irregularly helped, and 1 never helped. Since obtaining help is broadly defined and a farmer needed to have been helped only once during a 2-year period to be reported as having been helped, farmers regularly and irregularly helped likely include all those having the barest minimum of direct contact with the agent. Doubtless the farmers who were regularly helped differed greatly in the extent of help obtained from the agent; however, information from these surveys does not permit analysis of these differences.

### Personal and Social Characteristics

Studies of the factors leading farmers to use the county agent have pointed to several personal and social characteristics of farmers. In both surveys the "regularly" helped farmers have a higher income and socio-economic status, participate more extensively in formal organization (especially those which are designed to advance agricultural interests), and have had more formal schooling than those "never" or "irregularly" helped. Moreover, proportionately more farmers who are "never" or "irregularly" helped are 60 or more years old and, thus, perhaps less interested in and able to seek the agent's help. In each case the association is of moderate size. In both surveys use of the agent is most strongly associated with socio-economic status, participation in organizations designed to advance agricultural interests, and formal schooling. These factors reflect differences in awareness of and in the need for and opportunities to obtain help from the agent and in the values associated with modern commercial farming.



A county agent and a farmer reviewing the latter's farm record as a means of checking management practices.

Of some importance in this regard are the characteristics of farmers that are *not* related to different patterns of obtaining help from the agent. In these neighborhoods tenants are as often "regularly" helped by the agent as owners. Proportionately as many part-time as full-time farmers were "regularly" helped by the agent. Moreover, old-timers and novices at operating a farm did not differ in their use of the agent.

It is commonly believed—but uncommonly difficult to prove—that farmers who regularly obtain help from the county agent are more competent as farmers than those who do not. The findings of these surveys are consistent with this expectation. Moderate-to-strong association occurred between ratings of improved practices used in 1950 and 1955 and pattern of using the agent. These figures, however, do not necessarily represent the agent's influence alone, since help also may have been provided through other sources of information.

Information obtained only in the 1955 survey suggests two important additional consequences of "never," "irregularly" or "regularly" having obtained help from the county agent. Farmers who got help from the agent "regularly" were the ones who most often felt that new farming practices were superior to the old and tried hard to use them. "Regular" users of the agent also most often expressed complete confidence in the agent's opinion regarding farm practices.

It would seem that in some cases the favorable attitudes toward new practices and the county agent might have provided the impetus for regularly seeking help from the county agent. However, further analysis suggests that this rarely, if ever, occurred for these farmers. Instead it appears that for the most part the favorable attitudes developed after the pattern of regularly using the agent was established.

### Conclusions

The percentage of farmers who credit the county agent with having helped them in both surveys is surprisingly large and probably includes all who have had a minimum of contact with the agent. The findings further suggest that when looking for "regular" users of the county agent the most efficient guides are the farmer's income, participation in formal organizations, and formal schooling.

Studies that have attempted to determine the factors leading to use of the county agent have pointed to a variety of personal and social characteristics of farmers. This and other studies, however, have not

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# Six-year Pasture Trials Reveal Value of Fertilizer-Irrigation Combination

Old Bourbon county Kentucky  
bluegrass-white clover pasture  
given varied treatment\*

By W. C. TEMPLETON, JR., C. F. BUCK  
and P. G. WOOLFOLK

Studies on irrigation, fertilization and reseeded of an old Kentucky bluegrass-white clover pasture were conducted in Bourbon county over a 6-year period, starting in 1950.

The results, in the main, reveal the superiority of a combination of fertilizer and irrigation.

The soil on which the test was located is Maury silt loam, very high in available phosphorus, and varying from low to high in available potash. Five pairs of pastures were used. Pasture sizes ranged from 1.60 to 2.05 acres each. One pasture of each pair was ir-

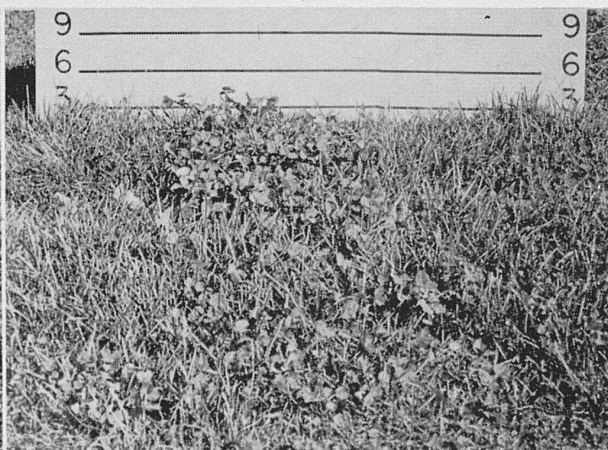
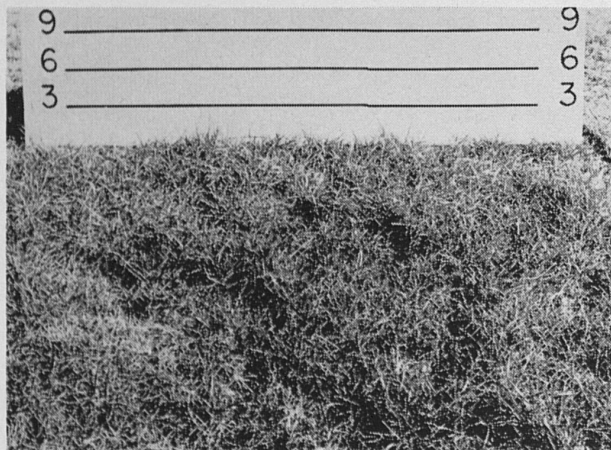
\* Appreciation is due Republic Steel Corporation, on whose Steel Way Farm this experiment was conducted, for providing land, facilities, animals and a part of the funds required for this research. E. E. Witt and R. M. Thaxton conducted the experiment during 1951 and 1952. Others who assisted in the initial phases of the study were M. E. Weeks and the late Ralph Kenney. The late E. G. Welch gave technical advice concerning design, installation and use of the irrigation system. E. N. Fergus and P. E. Karraker rendered valuable aid during the second phase of the experiment.



View of a portion of the experimental area showing lambs typical of those used during the last phase of the experiment.

rigated, while the other received no supplemental water. The five pairs of pastures (10 plots) were treated as follows: (Pair 1) 90 pounds nitrogen per acre annually, (2) 600 pounds 6-8-6 per acre annually, (3) top-seeded with Korean lespedeza, (4) top-seeded with Ladino clover, (5) neither fertilized nor top-seeded.

Rainfall during the 1951 growing season (April through October) was 4.55 inches below the long-time



These photographs illustrate the value of irrigating fertilized Kentucky bluegrass-white clover plots. The one on the left was not irrigated. Note the scanty 17-week growth of bluegrass. The plot on the right, which was irrigated,

was photographed at the same time. Note the 6½-week flourishing growth of bluegrass-white clover. (Neither plot was grazed during the growth period indicated.)

average for Lexington and was 3.67 inches less than normal during the same months in 1952. Irrigated pastures received 21 and 15 inches of supplemental water in 1951 and 1952, respectively.

Good-to-choice Hereford steers were used to graze the pastures. Average initial weights of the steers were approximately 600 pounds in 1951 and 675 pounds in 1952.

Carrying capacity of the pastures, liveweight gains per acre and calculated total digestible nutrients per acre were increased by irrigation. Except for the animals grazing the no fertilizer-no reseeding treatment, the daily gain per steer was lower on the irrigated pastures than on the non-irrigated ones. The over-all averages for irrigated pastures, expressed as a percentage of *non-irrigated* pastures (100 percent) were: steer days per acre, 148; daily gain per steer, 91; total liveweight gain per acre, 138; calculated T.D.N. per acre, 146 percent.

#### **Experiment Re-designed**

The experiment was redesigned after the 1952 grazing season to provide two replications. During the period 1953-55 the effects of irrigation were studied on fertilized and non-fertilized pastures. Precipitation during each of the three growing seasons was below normal and was very poorly distributed during 1953 and 1954. The irrigated pastures received approximately 13, 9 and 10 inches of supplemental water during 1953, 1954 and 1955, respectively. During this period the fertilized pastures were top-dressed each season with nitrogenous fertilizer three times and with muriate of potash once. The average yearly application per acre amounted to 175 pounds actual nitrogen and 150 pounds  $K_2O$ .

During the second phase of the experiment, California Hampshire-Rambouillet ewe lambs were used for grazing. Average lamb gains in pounds per acre for the three years, by treatment, were as follows: non-irrigated and unfertilized, 198; non-irrigated but fertilized, 287; irrigated and unfertilized, 412; and irrigated and fertilized, 450 pounds. Expressed on a percentage basis, the 3-year average production of dry matter of pastures receiving (1) no treatment, (2) fertilizer, (3) irrigation, and (4) fertilizer plus irrigation was 100, 211, 248 and 306 percent respectively. In the same order, the relative liveweight gains per acre were 100, 145, 208 and 227 percent and the ewe-days of grazing per acre were 100, 169, 229 and 250 percent.

Owing to late arrival of the lambs in 1954, bluegrass in the fertilized pastures was heading when the sheep

were placed on pasture. Daily and total gains of lambs on fertilized pastures, especially those pastures not irrigated, were, therefore, relatively low during 1954. In other words, the beneficial effects of early spring fertilization were largely negated that season by the poor management imposed.

Stomach worms were a serious problem on irrigated pastures during the third grazing season even though recommended practices with respect to drenching and the use of a phenothiazine-salt mixture were followed. Worms caused the death of nine sheep on irrigated pastures but none was lost on pastures not irrigated.

From 1953 through 1955 Kentucky bluegrass was virtually the only desirable species present in the non-irrigated pastures. On the other hand, white clover was prevalent in the irrigated pastures. Under the conditions existing during the second phase of this experiment the fertilizers applied seemed to depress the growth of clover in the irrigated pastures.

#### **What's Happening to Neighborhoods?**

*(Continued from page 3)*

(2) Some may have moved to farms or villages nearer sources of nonfarm employment. These individuals likely are those at the low end of the various scales.

(3) Others may have retired from the farm and moved to places outside the survey areas.

There is little indication as to why owners moved out of the survey neighborhoods; however, it may be hypothesized that they moved in order to obtain a better farm, or a more desirable place for retirement.

#### **What Kinds of Farmers Came?**

Another question concerns the comparison of the newcomers with the old residents. Groups A (old residents) and C (newcomers) were alike with regard to education, improved practice rating, income, work done off the farm, size of family, participation in social organizations, and number of friends. The two groups differed, however, in regard to age (newcomers were younger), socio-economic status (newcomers had lower statuses), and tenure. For the newcomers, 36 percent were tenants as compared with 10 percent of the old residents.

As to sources of farm information used, the newcomers were similar to the permanent residents in the use of the newspaper, radio, salesmen, experiment station, farm magazines, and friends as sources of in-

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## Who Uses the County Agent?

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been particularly rewarding as to foci for efforts to develop "regular" patterns of using the county agent. In this regard the fact that favorable attitudes toward the county agent and new farm practices seem to have followed, rather than to have preceded, "regular" use of the agent is pertinent. Thus the belief that the development of favorable attitudes toward the agent will lead to regularly seeking his assistance is not supported. However, the development of such attitudes probably smooths the task of developing a regular pattern of using the agent when other obstacles are overcome and contributes to the persistence of the pattern, once it has been established.

## What's Happening to Neighborhoods?

(Continued from page 7)

formation. However, the newcomer group participated less in social organizations that distribute farm information; were less often helped by the county agent, the Agricultural Stabilization Commission, and the Soil Conservation Service. Fewer newcomers attended farm meetings, talked with agency representatives, and read bulletins and the county agent's letters.

At the time of the 1955 survey the newcomer group was less integrated into the neighborhoods and used fewer sources of farm information. The newcomer group did not have a higher educational level even though they were younger and thus, owing to the advances in schooling achieved by succeeding generations, might have been expected to be more highly trained. Further, the newcomers were more often tenants, which suggests that community stability has not been improved. Clearly, old residents and newcomers more often differed in respect to the characteristics studied than the old residents and those who moved out of the neighborhoods.

Local leaders and public agencies serving farmers may see in these findings a challenge to help newcomers achieve a level of economic and social functioning on a par with their neighbors.

## Varied Research Projects Reported

By FRANK B. BORRIES, JR.

Here are capsule reports on research conducted during the year by various departments of the Kentucky Agricultural Experiment Station and substations:

\* \* \*

**TRANQUILIZERS NO HELP**—When tranquilizers were added to the feed of North Dakota lambs on fattening rations at the Lexington station, the drugs were of "no benefit," regardless of whether the test animals were on pasture or dry lot. In fact, the no-tranquilizer groups in some cases did a little better (though not significantly so) than the tranquilizer-added lots.

\* \* \*

**FALL ARMYWORM ON SORGHUM**—Granulated insecticides used on sorghum crops to help control the fall armyworm pest were better than emulsion concentrate forms of the insecticides. Problem was to get the insecticides into the whorls of the plants; the granulated forms did this better than the liquid sprays which had a tendency to dry up, wash away or perhaps not even get into the whorls.

\* \* \*

**GETTING LEGUMES INTO OLD GRASS SODS**—Tests by agronomists show a good way to get legumes into established sods. The recommended practices, based on the test, are to graze or clip old sods before renovation; apply needed lime, phosphorus and potash but NOT nitrogen; disk the pasture sod sufficiently to disturb 40 to 60 percent of the existing vegetation; seed adapted legumes at the proper time at or near recommended rates for pure-stand seedings; keep grass short by clipping or grazing during early establishment of the legume seedlings; manage the mixture to encourage the legumes; and control harmful insects.

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