

# *Kentucky* FARM AND HOME *Science*

Issued quarterly by the Kentucky Agricultural Experiment Station

Volume 5

Number 1

Winter 1959

READ—

Why Do  
Kentucky Rural  
Youths Quit  
School?

Where  
Kentuckians  
Now Live

Capital for  
Kentucky's 1958  
Burley Crop Was  
\$127 Million



# Kentucky FARM AND HOME Science

Vol. 5, No. 1 . . . . . Winter 1959

*A report of progress published quarterly by the Kentucky Agricultural Experiment Station, University of Kentucky, Lexington*

## KENTUCKY AGRICULTURAL EXPERIMENT STATION

FRANK J. WELCH .....Director  
WILLIAM A. SEAY ..... Vice Director  
H. B. PRICE ..... Administrative Assistant  
W. P. GARRIGUS .....Associate Director  
J. ALLAN SMITH .....Agricultural Editor

### *Kentucky Farm and Home Science*

JOSEPH C. DUNCAN .....Editor  
ORINNE JOHNSON and M. NASH COX .....Assistant Editors  
ROBERT C. MAY .....Photographer

Material appearing in this publication may be reproduced without further permission, provided that full acknowledgment is made of the source and that no change in headings or text is made without approval by the author.

Address correspondence about articles in this publication to either the authors or the Department of Public Information and Educational Aids, Experiment Station Building, University of Kentucky, Lexington.

## *In This Issue*

### WHY DO KENTUCKY RURAL YOUTHS QUIT SCHOOL?

*By E. Grant Youmans*

Page 3

### WHERE KENTUCKIANS NOW LIVE

*By James S. Brown*

Page 4

### CAPITAL NEEDED TO PRODUCE KENTUCKY'S BURLEY CROP LAST YEAR—\$127 MILLION

*By John H. Bondurant*

Page 6

## *The Cover*



Research to possibly by-pass the laborious and time-consuming preparation of burley tobacco beds is demonstrated in this cover picture. E. M. Smith, of the Agricultural Engineering Department, is holding some pelleted (clay-coated) tobacco seed. Covering the tiny seed with clay makes the seed large enough to be handled by a machine, which makes field-planting possible. Smith's tests last season showed reasonable success in field-planting. The machine at the left lays row plastic, used as a mulch and a weed-depressor; the pelleted seed is planted through holes punched in the plastic. (Photograph by Robert C. May)



# Why Do Kentucky Rural Youths Quit School?

By E. GRANT YOUMANS

A recent study<sup>1</sup> was made of the factors influencing Kentucky rural youths to drop out of school. A total of 480 mothers and 439 youths age 16 and 17 in Butler, Metcalfe, and Elliott counties were interviewed. They were asked questions about their economic condition, about their educational beliefs and values, and about school and work life.

More than one-third of the boys and girls in the study had dropped out of school. In Metcalfe county 54 percent of the 16- and 17-year-old youths had quit school. In Elliott county 32 percent had dropped out. In Butler county 24 percent had discontinued their formal schooling. It is probable that other similar Kentucky rural counties have an equally large number of youth who have not completed high school.

The evidence in this study indicates that once a youth quits school, he has little inclination or motivation to go back. The drop-out is thus denied the opportunity to acquire the knowledge, ideas, skills, and training which would enable him to improve his economic situation. If he moves to an urban community, he is handicapped in competing with urban youths for jobs. If he remains in the county, he is handicapped by his lack of formal education.

Analysis of the information obtained permits a number of conclusions as to why rural Kentucky youth quit school.

## Economic Condition of Family

The 480 families were divided into two groups of equal number, the poorer and the "better-off" families. Almost one-half of the youths from the poorer families had dropped out of school; only one-fifth of the youths from the "better-off" families had quit school. Thus a vicious circle begins. Large numbers of boys and girls from the poorer families are unable to take advantage

<sup>1</sup> The study was made jointly by the University of Kentucky Department of Rural Sociology and the Farm Population and Rural Life Branch, AMS, USDA. It is one of the studies being made in connection with the Rural Development Program in farming areas. A complete report of the study is in Kentucky Agricultural Experiment Station Bulletin 664, "Educational Attainment and Future Plans of Kentucky Rural Youths," by E. Grant Youmans.

Factors other than finances  
important in youths' decisions,  
three-county survey reveals



This survey showed that youths who were active in school activities tended to continue their formal education.

of the opportunities for a high school education. Without adequate education they will have difficulty in raising their standard of living. Their children probably will be the "poorer" children who, in the future, will tend to drop out of school. The rural development or extension worker will find little help in this conclusion. It will be a long, up-hill pull to improve the economic conditions of rural families so that all youths can continue in school. What can be done about this? A key to the possible solution of the problem is indicated by the findings of this study.

## Mothers' Belief in Education

The mothers were asked a number of questions about their beliefs in formal education. Their responses were related significantly to the school attendance of the youths. Among the poorer families, those mothers who believed in formal education tended to keep their children in school; those who did not have a strong conviction about the value of formal education tended to let their children drop out of school. The mother's beliefs about education no doubt reflect

(Continued on Page 7)

Jefferson county continues population increase;  
Cumberland Plateau area has great decrease,  
as revealed in figures showing

# Where Kentuckians Now Live

By JAMES S. BROWN

From the standpoint of change, the big news in the release of estimates of Kentucky's 1957 population by counties and economic areas<sup>1</sup> is the change in distribution of people *within* the state. Particularly striking is the great increase of the population of Jefferson county (Metropolitan Area A) and the great loss of population of the Cumberland Plateau area (Economic Area 9).<sup>2</sup>

## Population of the State

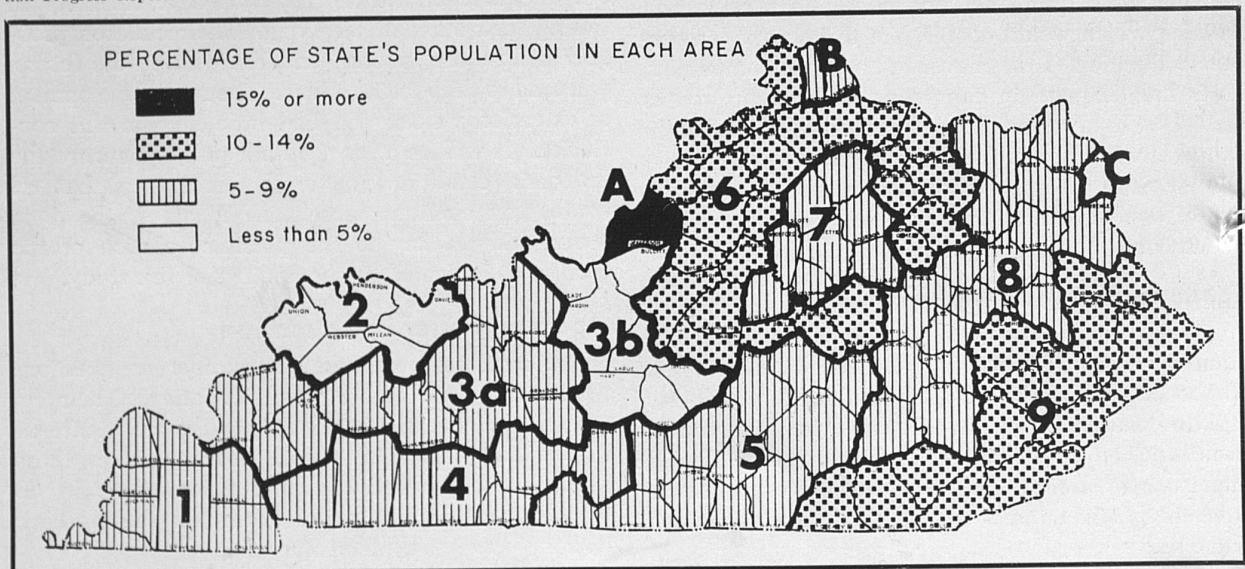
The state's population was estimated to be about the same on July 1, 1957 as April 1, 1950, increasing only 12,387 (or less than 1 percent) to 2,983,873. Natural increase continued to be high, with 360,073 more births than deaths during this 7¼-year period. But, as has been true for a long time, this relatively

large natural increase was nearly altogether offset by a loss through migration; during 1950-57, 332,934 more persons left the state than migrated into it.

## Distribution of the State's Population

More and more of the population is concentrated in urban areas. All three metropolitan areas gained from 1950 to 1957: Area A (Jefferson county) 20.0 percent; Area B (Campbell and Kenton counties) 12.6 percent; and Area C (Boyd county) 1.4 percent. The eight counties which in 1950 had 50 percent or more of their populations classified as urban (Boyd, Campbell, Daviess, Fayette, Henderson, Jefferson, Kenton, and McCracken) contained almost 40 percent of the state's people in 1957 compared with a little more than a third in 1950. The concentration of Kentucky's population in urban areas is leading to a geographical concentration of population in clusters along the Ohio River. Eleven counties along the Ohio in five clusters (Boyd-Greenup; Boone-Campbell-Kenton; Daviess-Henderson; Jefferson-Oldham-Hardin; and Mc-

<sup>1</sup>State economic areas are groupings of counties which have similar social and economic characteristics.  
<sup>2</sup>Thomas R. Ford, *Population Estimates for Kentucky Counties and Economic Areas, July 1, 1957*, Kentucky Agricultural Experiment Station Progress Report 66.



This map, divided into economic and metropolitan areas, shows the distribution of Kentucky's population on July 1, 1957. The economic areas are designated by numerals, 1

through 9; the metropolitan areas are designated by letters, A-B-C.



Cracken) in 1957 contained 38 percent of the state's population compared to only 32 percent in 1950.

Changes in the 10 non-metropolitan economic areas (see map) also show that the shift to urban areas is affecting all parts of the state. Urban growth is the primary reason for population increase in nearly every one of the five economic areas which gained (Area 1—The Purchase; Area 2—Owensboro-Henderson; Area 3b—Eastern Pennyroyal and Knobs; Area 4—The Pennyroyal; and Area 7—The Inner Bluegrass). On the other hand, the five economic areas which lost in population were areas dominated by agriculture or coal mining and were without large urban areas (Area 3a—The Western Coal Fields; Area 5—The South Central Knobs; Area 6—The Outer Bluegrass; Area 8—The Cumberland Plateau Margin; Area 9—The Cumberland Plateau).

### Most Important Changes

The two most important changes, both in numbers and rates, were in Jefferson county's continued increase, and the tremendous decrease in Economic Area 9.

In 1950 Jefferson county had about 27,000 fewer persons than Economic Area 9. Only 7¼ years later, in 1957, the county had about 158,000 more people than Area 9. This is a startling change. Although Jefferson county has steadily gained in population, in no decade from 1860 to 1950 had the Cumberland Plateau failed to gain population. But there is no doubt that the census of 1960 will show a sizeable loss of population in this area.

How can we account for these spectacular changes in the two areas?

Fundamentally, population change is a result of the number of births, the number of deaths, and the migration into and out of the areas during the period being studied.

As expected, from 1950 to 1957 Jefferson county gained through net migration (i.e., the number of migrants coming into Jefferson county exceeded the number leaving the county), with an estimated gain of 32,352. On the other hand, Economic Area 9 lost heavily, the net loss being estimated at 159,805. In the 7¼-year period Economic Area 9 lost through migration 31 percent of its total population in 1950.

Natural increase was also very important in the population changes of both of these areas. In fact, from 1950 to 1957, Jefferson county had 69,002 more births than deaths. This is more than twice as great a gain as that from net migration. Economic Area 9

also had a sizeable natural increase, since there were 77,999 more births than deaths. But this gain, great as it was, was still less than half the loss through net migration.

A more careful look at the data makes clear how astonishing these data on natural increase are.

**In 1940-50, Jefferson county had 105,684 births, 52,181 deaths.**

**In 1940-50, Economic Area 9 had 176,364 births, 36,368 deaths.**

**In 1950-57, Jefferson county had 107,586 births, 38,584 deaths.**

**In 1950-57, Economic Area 9 had 101,441 births, 23,442 deaths.**

Note that Jefferson county which had 70,680 fewer births than Economic Area 9 in the earlier period had 6,145 more births than Area 9 in the 7¼ years following. Note also that there were nearly 2,000 more births in Jefferson county in the 7¼ years from 1950 to 1957 than in the 10 years from 1940 to 1950. The annual rate of reproductive increase in Jefferson county increased from 1.23 in the earlier period to 1.77 from 1950-57. On the other hand, the annual rate of reproductive increase of Economic Area 9 decreased from 2.75 in the 1940's to 2.28 in the 1950's.

The migration to Jefferson county because of the job opportunities there in industry and commerce is an old, readily understood phenomenon. The movement away from Economic Area 9 is also an old pattern of movement from subsistence farming and coal mining, with its decreasing need for manpower, to better employment opportunities elsewhere.

The changes in natural increase are, however, new and different. Apparently young persons have migrated in such numbers from Eastern Kentucky that the number of births has fallen precipitously. On the other hand, Jefferson county has held the young people it already had and has attracted young persons of child-bearing ages so that the number of births has increased rapidly.

### The Future

What of the future? The rate of emigration from Eastern Kentucky was continuing to be heavy as recently as July 1, 1957, and in spite of the economic recession during 1957 and 1958, it is unlikely this rate decreased a great deal. Probably more and more young people will be drawn off, since they make up the majority of migrants; thus the rate of natural increase will fall still more. On the other hand, it is likely that Jefferson county will continue to attract young people and, perhaps even more important, will

(Continued on Page 8)

# Capital Needed To Produce Kentucky's Burley Crop Last Year—\$127 Million

**Estimate includes direct and calculated costs, interest, and value of labor used**

By JOHN H. BONDURANT

Financing production costs of farm operators in producing burley tobacco may be divided into three groups—direct cash costs, calculated costs, and the labor of the farmer and his family.

Direct cash costs for producing burley tobacco averaged \$117.60 an acre in Kentucky during 1951-53. Since then farm production costs have increased about 7 percent so that direct cash costs may have averaged about \$126 an acre in 1958. These costs are cash items that can be charged directly to tobacco. For an estimated 203,000 acres of burley tobacco this amounts to \$23,578,000. Beginning early in the year and continuing until December, practically all this cost must be incurred before any returns are received from the sale of the crop. The only major exceptions are marketing costs and labor costs for stripping tobacco, some of which are incurred after part of the crop is sold. The interest charge at 6 percent per year for an average period of 6 months, if all the direct cash costs of \$23.6 million were borrowed funds, would amount to \$708,000. The two largest items of cash costs in producing burley tobacco are fertilizer, averaging 36

percent of the total, and hired labor averaging 32 percent. Other cash cost items are plant bed materials, cover crop seed, spray materials, and fuel for curing. About half of the total estimated direct cash cost usually is expended prior to cutting and housing the crop—which begins about August 15 each year.

Calculated costs for producing burley tobacco in Kentucky averaged \$146.89 per acre in 1951-53. Adding 7 percent (the amount such costs are estimated to have increased) makes the calculated costs last year (1958) about \$157 per acre. These costs include materials, facilities, and services—other than direct cash cost items—used in tobacco production. They may be included principally in two groups, (1) power and equipment and (2) the tobacco barn, stripproom, sticks, and other equipment. Other calculated costs were value of manure used on tobacco and non-cash costs of hired labor used in tobacco production. Much of the calculated cost items are used for production of other crops as well as tobacco. The total calculated costs of the 1958 burley tobacco crop in Kentucky, based upon the above cost per acre and the 203,000 acres in tobacco, is estimated at \$31,871,000. Power and equipment averaged 31 percent of the calculated cost and barn and tobacco sticks 54 percent. The charge for these items included depreciation and obsolescence as well as costs of repairs and fuel for the proportion of their use in tobacco production,

The great amount of labor required in burley production is illustrated by this picture of a central Kentucky tobacco field showing leaf in various stages of harvest: (left) tobacco on stick, ready for housing, (center) cutting tobacco and putting on stick, (right) tobacco suckered, ready for cutting. (Photo: Russell A. Hunt)





housing, and marketing. Since the \$31.9 million calculated costs were in use over practically the entire year, interest on this amount at 6 percent would amount to \$1,914,000.

### Total Financial Outlay

The total estimated financial outlay, therefore, prior to marketing time, for producing the 1958 burley tobacco crop follows:

		Percent
Direct Cash Costs .....	\$23,578,000	40.6
Calculated Costs .....	31,871,000	54.9
Interest Charge .....	2,622,000	4.5
Total .....	<u>\$58,071,000</u>	<u>100.0</u>

The above outlay equals \$286 an acre. This represents the financial outlay that must be met to break even and does not include any charge for the labor of the farm operator and his family and no charge for use of land and other fixed investments for tobacco production.

The estimated operator and family labor used for producing the 1958 tobacco crop in Kentucky averaged 339 hours per acre. This amounts to a total of 68,817,000 hours or 8,602,125 eight-hour days. This also amounts to 42 days per acre. An average of 70 hours of labor per acre is hired and, therefore, is included in the above direct cash costs. The value of family labor would vary for different parts of the state, as does the cost of hired labor, depending upon alternative opportunities for productive self-employment or wage work. In the Bluegrass area in 1952, the average tobacco tenant received about \$1 an hour for his labor in tobacco production. The cost of farm labor has increased about 13 percent since 1952. However, in some parts of the state, labor is more productive than in other areas, with a range from about 300 hours for producing tobacco in the inner Bluegrass to more than 500 hours in parts of eastern Kentucky.

### Value of Farmer's Own Labor

Regardless of the value placed upon family labor used in burley tobacco production, the average tobacco grower must supply 339 hours of labor over a period of about 10 months before he receives any pay for his work. In other words, since the subsistence of the tobacco grower and his family depends on income from tobacco production, he has either to finance this subsistence from savings or from borrowed funds. At \$1 an hour (the average wage earned by tobacco tenants in the Bluegrass area in 1952) this would amount to \$68,817,000 for the 1958 tobacco crop. If this amount is added to the \$58.1 million incurred by

the tobacco grower to break even, the estimated cost of financing the burley tobacco crop in Kentucky for 1958 is approximately \$127 million. This estimate would amount to \$625 per acre of burley tobacco.

This represents a significant financing problem for the farmer producing 2 to 4 acres of tobacco, especially when other parts of the farm business have similar financing needs. For all of the approximately 100,000 burley tobacco growers in Kentucky, financing the above costs must come from savings or through credit sources.

Other costs in producing tobacco such as returns to land, equipment, and other investments are usually paid when or after the crop is marketed and, therefore, are not included as a part of the cost of financing the crop. These costs vary considerably in different parts of the state but are an integral part of the total cost.

### Why Do Youths Quit School?

*(Continued from Page 3)*

the beliefs and attitudes held by the family. This suggests a target for action programs in rural areas. If the rural family can be influenced to adopt more favorable attitudes about formal education, these changed attitudes probably would result in more rural youths continuing their formal education.

### School Life

Some aspects of school life were related significantly to continued school attendance. Youths from both the poorer and "better-off" families who were active in school activities tended to continue their formal education; those who took little part in extracurricular activities tended to drop out. Satisfactory relationships with teachers also appeared to be a factor in keeping young people in school. The youths who dropped out of school seemingly had more complaints about their teachers than did those who remained in school. The most common complaints were that 1) the teachers violated the students' sense of fair play, 2) they embarrassed students, and 3) they gave preferential treatment to some youths over others. Perhaps school administrators, teachers, and other school personnel should assist the poorer youths in finding acceptable roles in extracurricular activities, which would encourage youths to remain in school.

### Work Life

Demands placed upon a youth to do *unpaid* work at home appeared to influence him to drop out of

*(Continued on Page 8)*

## Why Do Youths Quit School?

(Continued from Page 7)

school. This finding applied to both the poorer and "better-off" youth. The amount of *paid* work the youth did while he was in school appeared to influence his continuing his education. In this case, the youth who took advantage of opportunities to earn money while he was going to school found that this money helped him "finance" his high school education. Although the American public school is "free" to all children in the school community, there is a substantial cost attached to attendance. The youth without sufficient funds is barred from many school activities and cannot be independent in his dealings with his school friends. The probable consequence is that he tends to withdraw from an unpleasant situation. If youths could be relieved of some unpaid work at home and if the community could provide more part-time paid work for youths during the school term—more youths would be able to remain in high school.

## Youths' Attitudes and Characteristics

Similar to their parents, the youths who possessed more favorable attitudes about the value of formal education tended to continue in school, while those with less strong convictions about formal education tended to drop out. Symptoms of ill-health were not related to the youths' continuing or discontinuing their formal education. Mental ability, as measured by I.Q. tests, was significantly related to continuing in high school. Apparently youths who had skill in solving problems commonly found in I.Q. tests found these same skills useful in school. By virtue of their "doing well," their teachers and friends probably encouraged them to continue formal education.

This survey showed that, aside from economic conditions, other factors account for many youths dropping out of school. A larger percentage of Kentucky rural youths could be influenced to obtain the benefits of a high school education, 1) provided parents and youths could be influenced to adopt more favorable attitudes about the value of formal education, 2) if

youths could be relieved of some unpaid work at home and if the community could provide them more part-time paid work during the school term, 3) if school personnel would help youths from poorer families find suitable roles in extracurricular activities, and 4) if teachers would encourage youths to remain in school.

## Where Kentuckians Now Live

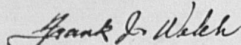
(Continued from Page 5)

hold those it already has (who are a sort of "built-in" assurance of a continuing high rate of natural increase), so that population increase there is almost certain. This will be true even if the rate of gain through net migration decreases considerably.

The explanation of population changes in other areas of the state is similar to that offered for changes in Jefferson county and Economic Area 9. It should be emphasized that in all the other areas, *natural increase* played an important role. Metropolitan Area B had a slight gain through net migration, but more than seven times as great an increase through natural increase. Metropolitan Area C lost through migration, but had a slight population increase because of a sizeable natural increase. All of the non-metropolitan economic areas lost through net migration and gained through natural increase. The non-metropolitan areas which gained in population from 1950 to 1957 were those with rates of loss from civilian migration less than 10 percent of their 1950 populations, for their rates of natural increase were large enough to offset the losses through migration. The five non-metropolitan areas losing in population were those with rates of loss through migration greater than 10 percent; their migration losses were so heavy that natural increase, great as it was in some cases, could not offset them.

The data indicate that in the future, natural increase will less and less be able to offset heavy out-migration in the non-metropolitan areas. In the immediate future, at least, natural increase may well be more important in the increases of the population of Kentucky's urban areas than net migration.

Kentucky Agricultural Experiment Station  
University of Kentucky  
Lexington, Ky.

  
Director

FREE—Annual Report or Bulletin  
or Report of Progress

Permit No. 1109  
Ky. W-3-59-3.000

POSTMASTER: Please return free if  
unclaimed. See Postal Laws and Reg-  
ulations.

PENALTY FOR PRIVATE USE TO AVOID  
PAYMENT OF POSTAGE, \$300