UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

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THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 86

(SECOND REVISION)

Tobacco Project
Junior 4-H Clubs

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REQUIREMENTS

1. Boys and girls from 10 to 18 years of age may undertake this project.

2. Enrollment should take place early in the year, not later than March 15.

3. Club members must attend the meetings of their club.

4. They must study the information given about tobacco in this circular.

5. Each member must grow at least one-fourth of an acre of tobacco.

6. Each member must keep records on the forms in the back of this circular of all work done on the project, showing expenses, receipts and net return.

7. Each member should receive the net return from his project.

8. Each member should make an exhibit of tobacco at some county fair or other fair.

9. Two disinterested persons must measure the ground and determine the yield.

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Tobacco Project, Junior 4-H Clubs
By E. J. KINNEY

Raising the Plants. Probably most club members can get plants from their fathers' plant beds, but if necessary to raise them, proceed as follows:

For the seed-bed, select a very productive plot of land; a clearing in a woods, or an old fence-row. Old sod ground is good. For a quarter of an acre of tobacco,* plow or spade an area 9 by 12 feet and make a good seed-bed. Pile a layer of dry brush on the bed and on this place poles, old boards or other wood. Enough wood should be used to give a hot fire for a half hour at least. Set fire to the brush in several places. After the bed has cooled, sprinkle 2 pounds of mixed fertilizer on it and rake in very lightly. Mix half a teaspoonful of tobacco seed very thoroly with a quart of slightly moist sand or soil and sow on the bed, going over it several times in order to get an even distribution. Tramp the bed carefully; then box in with six-inch boards and cover with tobacco cotton. Water when the soil becomes dry, using about a barrel of water once a week. If cut-worms or other insects give trouble, dust the bed with lead arsenate. A half pound of nitrate of soda dissolved in 5 gallons of water should be sprinkled over the bed if at any time the plants fail to make a good growth. Follow immediately with 5 gallons of clear water to prevent the solution from burning the plants. Prepare the plant bed as early as the ground can be worked.

Selection and Preparation of the Land. Choose fertile, well-drained soil for tobacco. For White Burley, sod land is best. For dark tobacco, a clover sod is perhaps best. Break

*It should be clearly understood that the directions given in this circular as to size of plant-bed, plant-bed fertilizer and fertilizer on the field are on the basis of one-fourth acre. The club member who wishes to raise more than a quarter of an acre must use a proportionately larger plant bed and fertilizer application.

the land as early as possible, especially if in sod. Fall plowing is particularly desirable for heavy grass sods. Disk at intervals to keep down weeds and put the land in good condition for transplanting.

Fertilizers. Fertilizer seldom fails to give an increase in yield of tobacco and often improves the quality of the leaf. Purchase a fertilizer containing 4 to 5 per cent of nitrogen, 8 to 10 per cent of phosphoric acid and 4 to 5 per cent of potash. Use 100 to 125 pounds of such fertilizer for one-quarter acre. If the new highly concentrated fertilizers are used, such as a 12-24-12 analysis, apply only one-third as much, or about 40 pounds for the quarter acre. When it is impossible to obtain a fertilizer with a high percentage of nitrogen as recommended, use 100 pounds of the best fertilizer obtainable and, after the tobacco has started growing, apply 25 pounds of nitrate of soda or sulfate of ammonia around the plants. However, do not get any on the plants.

Applying the Fertilizer. For White Burley: Mark out the land in rows 3½ feet apart. For ¼ acre, it is most convenient to drill the fertilizer in the rows by hand. To apply 125 pounds per quarter-acre, drill 10 pounds in each 100 feet of row. After drilling the fertilizer, run along the edge of the furrows with a hand garden plow or a single-shovel one-horse plow, so as to cover the fertilizer and make a new mark. Set the tobacco in the new mark. This puts the roots of the plants close to the fertilizer but not in contact with it.

For dark tobacco: Spread 75 pounds of the fertilizer broadcast and harrow into the soil before marking out the plot. Then mark out the plot, both ways, with the rows 3½ feet apart. Drop the rest of the fertilizer in the cross marks and mix with the soil thoroly in making the hills for the tobacco.

Setting the Plants. Machine setting is preferable to hand planting, but it is usually more convenient for club members to set by hand. Space White Burley plants 18 inches apart; dark tobacco, 3½ feet apart. The secret of getting a good stand is to press the earth firmly around the plants when setting. Early

transplanting—from May 20 to June 1—usually gives the best quality of tobacco.

Cultivation. As soon as the plants start growing, or before if rain crusts the ground, give the tobacco a shallow cultivation. It is also desirable to loosen the soil around the plants with a hoe, but care should be taken not to loosen the plants. Further hoeing is unnecessary except to destroy weeds. Cultivate the tobacco after heavy rains or whenever necessary to keep down weeds. Shallow cultivation is best. Discontinue cultivation when the passage of the cultivator between the rows begins to break and bruise the leaves.

Combating Worms. One should be constantly on the watch for tobacco worms. At the first appearance, give the plants a dusting with lead arsenate. This poison is much safer to use than Paris green, as the latter, unless applied very carefully, may burn the plants.

Topping and Suckering. Allow White Burley tobacco to bloom out fully before topping. From fifteen to twenty leaves should be left, depending upon the vigor of the plants. The aim is to keep as many leaves as will mature perfectly and grow to a good size. After topping, pull the suckers when they reach a length of about two inches.

Top dark tobacco as soon as the flower bud appears, leaving from ten to fifteen leaves. Keep the suckers closely pulled and never leave them until large. Close suckering tends to give heavy, thick leaves, desirable in dark tobacco.

Harvesting White Burley Tobacco. Cut White Burley when the middle leaves show a distinct yellow color. In very dry weather it may be necessary to cut before the crop is mature, to prevent the loss of the lower leaves. Put the tobacco directly on the sticks as fast as cut, placing 5 or 6 plants on each stick. Haul the tobacco to the barn as soon as it is wilted, and hang the sticks about 8 to 9 inches apart. Shake out the tobacco well before hanging, so the leaves will not stick together. In every hot, dry weather, cut the tobacco in the late afternoon and haul to the barn the next forenoon. Splitting the stalk is preferable to spearing.

Harvesting Dark Tobacco. Dark tobacco is ready for harvest when the leaves begin to lose their intense green color and small yellow flecks appear near the edges. When tobacco is ripe, the leaves are brittle and, if bent between the fingers, break readily. Dark tobacco should be thoroly wilted before hauling to the barn, and should be handled very carefully to prevent bruising. Space air-cured dark tobacco in barns the same as White Burley. In fire-curing districts, about eight plants are put on each stick, and the sticks spaced 6 inches apart.

Curing White Burley and Air-Cured Dark Tobacco. Give as much ventilation as possible for the first few days after hanging the tobacco. In hot, dry weather, keep some of the ventilators closed after the leaves begin to yellow, to prevent too rapid drying. As curing progresses and the leaves begin to brown, the ventilators may all be opened. In damp, rainy periods, open the ventilators during the day and close them at night. Long-continued damp weather may cause houseburn. The only way to avoid damage is to dry out the tobacco by the use of coke stoves. Continue their use until the weather improves.

Curing Dark Fired Tobacco. The yellowing of dark fired tobacco usually requires from four to seven days, depending upon temperature and humidity. In cool, damp weather, very small fires may be necessary to cause tobacco to yellow properly, while in warm, wet weather such fires are needed to prevent house burn. The temperature during the yellowing period should not be more than 75 to 80 degrees, F.

As soon as brown cured spots begin to appear on a large number of the leaves, the tobacco is ready for firing. Start the fires slowly and raise the temperature gradually to 80 to 85 degrees the first day, 90 to 95 the second day, 100 the third day, 100 to 110 the fourth day, 110 to 120 the fifth day, and 120 to 140 the sixth to ninth days. On the tenth day, after five days of hot fires of 115 to 140 degrees, the leaves and stalks usually are dry. However, the leaves still lack the finish so desirable in dark tobacco. This finish is produced by a continuation of

firing for about 30 days, with small fires, about 85 degrees F., and much smoke. For this late firing, sawdust can be used.

Stripping and Grading. Proper grading of tobacco is an art that can be learned only by experience. Particularly with White Burley, much skill is necessary because of the numerous grades into which the crop is divided. Club members without experience should get some help from an experienced man in stripping and grading the crop. If unable to get help from father or friends, the county agent or club leader will give the required assistance.

The leaves on a stalk of cured tobacco vary greatly in size, soundness, texture, body (thickness) and color; hence they can be separated into several classes on the basis of these differences. This is known as grading. Grading is necessary for two reasons. The various classes of leaf are used for different purposes in the manufacture of tobacco products. If grading were not done on the farm, it would have to be done by the manufacturer. Because of a smaller supply or greater demand, some grades command higher prices than others. If tobacco were sold ungraded, it would be difficult to determine a price fair to both the manufacturer and the grower.

The more leaves allowed to mature on tobacco, the greater the variation in leaf characteristics and the larger the number of grades that must be made. White Burley often is topped at 20 leaves, which necessitates a rather large number of grades. Following is a brief description of Burley grades: (1) At the bottom of the stalk are one or more small, thin, light-colored and often ragged leaves known as *flyings* or *sand leaves.* (2) Next above the *flyings,* are the *trash* leaves. These differ from the *flyings* in being of good size and fairly sound, but are light in body, and colory. (3) Next are the *lug* leaves. These are full size, sound and have more body than the trash leaves. They are not quite so colory as the latter. (4) Above the lugs is the grade known as *bright leaf.* The leaves in this grade are large, very sound and have good body. The under side of the leaf is considerably lighter than the upper side, differing in this

respect from the trash and lugs. (5) The upper leaves form the grades known as *red leaf*. This is light red to dark red in color, has much body and usually is somewhat coarser in texture than the other grades. In some crops and in some seasons some of the top leaves do not develop fully and are small and short. Such leaves usually are placed in a grade known as *tips*. All damaged leaves are kept separate from the sound leaves, and perhaps two or more grades of damaged may be made. Finally, many growers make two or more divisions of all the natural grades, the separations being based chiefly upon leaf length.

Lugs usually bring the best price among White Burley grades; however, during the past two or three years, there has been little difference in price of trash, lugs and bright leaf. Flyings usually bring about 80 per cent as much as the best grades, and red leaf 60 to 70 per cent.

The three grades of dark tobacco are: (1) *trash,* the rather thin, small and unsound leaves at the bottom of the plant; (2) *lugs,* fairly sound leaves of good size but deficient in body; and (3) *leaf,* the large, heavy, sound leaves that comprise, as a rule, about 80 per cent of the crop. Dark trash usually brings about 30 per cent as much as leaf, and lugs about 50 per cent as much.

In learning to strip tobacco, the beginner usually finds his greatest difficulty in deciding just where to make the grade separations. For example it may be difficult to decide whether a leaf belongs in the lug grade or ought to be put into the leaf grade. As a matter of fact, it often makes little difference, into which grade the leaf is put. The important point is to avoid putting together in the same grade leaves that are distinctly different in characteristics. A good plan is for the beginner to have some experienced grader make a sample of each grade from the tobacco to be stripped. These should be studied and kept at hand for comparison while stripping.

Tie the hands of tobacco neatly, because this adds to the appearance of the leaf on the sales floor. Usually about 20 leaves are put into each hand of White Burley and from 6 to 8 leaves into each hand of dark tobacco.

CROP RECORD

1. Number of acres .....
2. Kind of soil—rich, medium or poor.....
3. What was grown on land last year?.....
4. Did you use commercial fertilizers? .....

   Kind of fertilizer used .....

   Amount used .....
5. How much barnyard manure did you use?.....
6. When did you plow (break) your land?.....
7. Number of hours required to plow (break) land.....
8. How did you prepare the land before setting?.....

   .....

   .....

   .....
9. Number hours required to prepare land .....
10. Number of horses used.....
11. What variety did you grow?.....
12. How many hours were used in planting crop?.....
13. How many times did you cultivate your crop?.....
14. Describe each cultivation naming the implements used.....

    .....

    .....

    .....

15. No. hrs. team was used in first cultivation..... No. horses used.....

16. No. hrs. team was used in second cultivation..... No. horses used....

17. No. hrs. team was used in third cultivation..... No. horses used.....

18. No hrs. team was used in fourth cultivation..... No. horses used.....

19. No. hrs. spent by member or help in first cultivation.....

20. No. hrs. spent by member or help in second cultivation.....

21. No. hours spent by member or help in third cultivation.....

22. No hours spent by member or help in fourth cultivation.....

23. No hours spent by club member in hoeing, and hand cultivation

.....

24. No hrs. spent by help in hoeing and hand cultivation.....

25. No. hrs. horses were used in harvesting crop.....No. horses used.....

26. No hours club member spent in harvesting crop.....

27. No. hrs. help was used in harvesting crop.....

28. No. hrs. spent by club member in preparing crop for market.....

29. No. hours help was used in preparing crop for market.....

30. No. hours spent by club member in marketing crop.....

31. No. hours help was used in marketing crop.....

32. No. hours team or truck was used in marketing crop.....

No. horses used.....

Value your time at 12c per hour.

Value teams time at 10c per hour per horse; truck 40c per hour.

Value adult help at 20c per hour.

BUSINESS ACCOUNT

Go thru your records and determine the total number of hours you spent on your crop and multiply this number by twelve. This gives the value of your time, in cents. The total number of hours adult help was used valued at 20c per hour gives the cost of help. Find the total number of hours team was used and value this time at 10c per hour per horse. Charge $2.00 for each two-horse load (1 ton) of barnyard manure.

Use the following table:

ITEMS OF EXPENSE	Amount	
	Dollars	Cts.
Rent or use of land at $5.00 per acre		
Use of machinery and tools at 40c per acre		
Value of member's time		
Value of help's time		
Value of team's time		
Value of truck time		
Cost or value of manure spread on field		
Cost of fertilizer		
Miscellaneous expense		
Total expense		
RECEIPTS		
Total number of pounds produced		
Value of leaf per pound		
Total value of crop		
Less expense		
Net income		

This is to certify that this project has been carried on to the best of our ability.

..... Club Member.

..... Local Club Leader.

STORY OF HOW I GREW MY TOBACCO

STORY OF HOW I GREW MY TOBACCO—Continued.

STORY OF HOW I GREW MY TOBACCO—Continued.

I state upon my honor as a club member that I have answered all the questions in this record as well as I know how.

Signature .....
(Member making report.)

Address .....

Date..... Age.....

Have your county agent or two persons outside your family sign the following:

We hereby certify that we have examined the records of.....

.....entered in this book, and to

the best of our knowledge and belief they are correct and a true account of his work.

Signature .....

Address .....

Occupation .....

Date .....

Signature .....

Address .....

Occupation .....

Date .....