

BURLEY TOBACCO PROJECT

For 4-H Clubs

Circular 412

UNIVERSITY OF KENTUCKY
College of Agriculture and Home Economics
Agricultural Extension Division

Thomas P. Cooper, Dean and Director

Requirements

1. Boys and girls 10 to 18 years old (inclusive) may take this project.
2. Enroll not later than March 15.
3. Each member must grow at least $\frac{1}{4}$ acre of tobacco, following the advice of his county agent and project leader.
4. Each member must keep a record on the forms in this circular, of all work done on the project. The record must be approved and signed by the county agent.
5. The county agent or two disinterested persons must measure the ground and certify the yield.
6. Each member should make an exhibit of tobacco at his county show or one of the district shows.
7. Each member should receive the net return from his project.
8. To get the most development out of 4-H club work, a member should attend all meetings of his club and take part in its activities.

*(This circular is a revision
of Circular 289)*

Burley Tobacco Project for 4-H Clubs

By E. J. KINNEY

DIRECTIONS given here are for growing $\frac{1}{4}$ acre of tobacco. For raising more than $\frac{1}{4}$ acre, a larger plant bed and more seed and fertilizer will of course be needed.

Raising the Plants

Probably most club members can get plants from their home plant beds. If you must raise the plants, do as follows:

Prepare the plant bed as early as the ground can be worked. Select a very productive plot of land which gets the early morning sun, and is as little shaded during the day as possible. An old fence row or old sod ground is good. For $\frac{1}{4}$ 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 to burn the bed. Use enough wood to give a hot fire for a half hour at least. Set fire to the brush in several places and let it burn down. After the bed has cooled, sprinkle 3 pounds of mixed fertilizer on it and rake in very lightly. Mix one-third level teaspoonful of tobacco seed very thoroughly with a quart of slightly moist sand or soil and sow on the bed, going over it several times in order to get the seed even. Tramp the bed carefully; then box it in with 6-inch boards and cover it with tobacco cotton. Water when the soil becomes dry, using about a barrel of water once a week. If cutworms or other insects give trouble, dust the bed with lead arsenate. Half a 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 keep the solution from burning the plants.

When the first true leaf appears, treat the bed, through the cotton, with a lime-bluestone mixture prepared as follows: Dissolve 3 ounces of powdered bluestone in 2 gallons of water. In another container, mix 4 ounces of fresh builder's lime in 1 gallon of water. Mix the two lots thoroughly and apply through the cotton with a sprinkling can. Repeat 8 to 10 days later. This controls wildfire and rust.

Selecting and Preparing the Land

Choose fertile, well-drained land. Break the land as early as possible, especially if in sod. Fall plowing is good for heavy grass sods. Disk at intervals to keep down weeds and put the land in good shape for transplanting.

Fertilizers

Fertilizer seldom fails to give an increase in yield of tobacco and often improves the quality of the leaf. Use a fertilizer containing 4 to 6 percent of nitrogen, 8 to 12 percent of phosphoric acid and 6 to 8 percent of potash. A very popular analysis in the burley district is 6-8-6. Use 200 to 250 pounds of such fertilizer for $\frac{1}{4}$ acre. When you cannot get a fertilizer with so high a percentage of nitrogen, use 250 pounds of the best fertilizer you can get and, after the tobacco has started to grow, apply 25 pounds of nitrate of soda or sulfate of ammonia around the plants, but do not get any on the plants. If you use ammonium nitrate, apply 15 pounds.

Applying the Fertilizer

For $\frac{1}{4}$ acre it is usually most convenient to apply the fertilizer by hand. Mark out the rows $3\frac{1}{2}$ feet apart. Make furrows 3 or 4 inches deep on both sides of the row and as close as possible. In each furrow sow 4 pounds of fertilizer per 100 feet of row. Cover with a rake or hoe or in any convenient way. The plants should be set in the marker row. This puts the roots of the newly set plants close to the fertilizer but not in contact with it, which is best for moderate amounts of fertilizer.

Setting the Plants

Setting the plants by machine is best, but it is often more convenient for club members to set by hand. Space plants 16 inches apart on very productive soil and 18 to 20 inches on soil of medium productivity and on hill land. Make the rows 42 inches apart. The secret of getting a good stand is to press the earth firmly around the plants when setting. Early transplanting—from May 10 to June 1—usually gives the best quality of tobacco.

Cultivation

As soon as the plants start to grow, or before if rain crusts the ground, give the tobacco a shallow cultivation. It is well to loosen the soil around the plants with a hoe, but take care not to loosen the plants. Further hoeing is unnecessary except after heavy rain or as needed to keep down weeds. Shallow cultivation is best. Quit cultivating when the cultivator begins to break and bruise the leaves.

Combating Worms

Be constantly on the watch for tobacco worms. At their first appearance, dust the plants with a mixture of 1 part paris green and 6 parts of lime at the rate of 7 to 8 pounds an acre, depending on the size of the plants. Be very careful to get an even covering of the plants.

Topping and Suckering

Allow burley tobacco to bloom out fully before topping. Sixteen to 24 leaves should be left, depending on the vigor of the plant. The aim is to keep as many leaves as will mature well and grow to a good size. After topping, pull the suckers when they are 3 or 4 inches long.

Harvesting

Cutting

Cut burley when the middle leaves show a distinct yellow tinge. Put the tobacco directly on the sticks as fast as cut, 5 or 6 plants on each stick, with the butts toward the sun. 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. This is very important. In very hot, dry weather, cut the tobacco in the late afternoon and haul it to the barn the next forenoon. A large percentage of the burley crop is now harvested by spearing. Spearing is faster than splitting and perhaps just as satisfactory except for late-cut crops.

Priming

Except when moisture conditions are very favorable the lower leaves of burley plants yellow and are likely to dry up and waste before the rest of the plant is ripe enough to cut. These lower

leaves can be picked off and saved, thereby adding to the returns from the crop. This picking of the lower leaves is called priming. It is recommended that each Club member prime his quarter acre of tobacco, particularly in dry seasons when there is danger that several of the lower leaves would be lost. For instructions on priming, see your County Agent.

Curing

Usually the tobacco will be cured with the other tobacco on the farm, and the club member will have little opportunity of supervising the curing. However, it is urged that the club member go to the barn each day during the curing period and note the changes in the leaf that take place from day to day.

Good results in curing depend much upon the construction of the barn. Thorough and controlled ventilation is necessary. Barns should have a large amount of side ventilation. They should be stripped and all ventilators should be capable of being tightly closed to keep out wind, rain, and snow and make it easier to regulate the heat when firing is necessary.

After housing tobacco, all ventilators should be kept wide open for several days to permit the escape of the tremendous amount of water given off by the plants, but if nights are cool, especially cool and windy, it is best to close the side ventilators. If weather is decidedly cold and windy when tobacco is housed, it is best to shut nearly all side ventilators and heat the barn moderately with coke stoves. Do not keep very hot fires. A temperature of 70°F is enough. The firing may be discontinued and the side ventilators opened again as soon as the weather becomes warm. After the leaf begins to yellow close some of the side ventilators during the day if the weather is very hot and dry. If hot and damp, however, keep all open. When weather is such that, in spite of perfect ventilation, the leaf stays in high order for 36 hours, especially if the temperature is high, houseburn is likely to develop. Under these conditions the only remedy is to dry out the leaf by the use of heat. When firing tobacco, in a stripped barn, some side ventilation is necessary to permit escape of moisture. Openings of 2 or 3 inches usually give enough ventilation. In unstripped barns the cracks between boards provide adequate ventilation as a rule. Top ventilators should always be kept open when firing. Detailed directions

for firing with coke stoves will be furnished by the Kentucky Experiment Station, on request.

After yellowing is completed all ventilators may be kept open in fair weather until the leaf is completely dry. On windy days and in rainy weather they should be closed. When curing is finished, all ventilators should be kept closed. Tobacco keeps its finish better when bulked than when left hanging up; hence as soon as safe it is advisable to bulk down the entire crop. Care must be taken to see that it is not in such high order, when bulked, that there is danger of damage in the bulk.

Stripping and Sorting

The leaves on a stalk of cured tobacco differ greatly in size, soundness, texture, body (thickness) and color. They can therefore be separated into several classes based on these differences. This is known as sorting. Sorting is necessary for two reasons. The various classes of leaf are used for different purposes in the manufacture of tobacco products. If sorting 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 unsorted, it would be difficult to determine a price fair to both the manufacturer and the grower.

Proper sorting of tobacco is an art that can be learned only by experience. Particularly with burley, much skill is necessary because of the numerous grades into which the crop is divided. A club member without experience should get help from an experienced man in stripping and sorting his crop. If a club member is unable to get help from father or friends, the county agent or club leader will help.

The more leaves allowed to mature on a tobacco plant, the greater the variation in leaf characteristics and the larger the number of grades that must be made. Burley often is topped at 20 leaves, which means 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, 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 color. (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 somewhat lighter than the upper side, differing in this respect from the trash and lugs. (5) The upper leaves form the grade 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 are usually 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. The trash and lug grades usually bring the highest prices. Flyings come next, bringing as a rule almost as much as lugs. Bright leaf usually sells for about 90 percent of the lug price and red leaf 35 to 40 percent.

In learning to sort 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 to 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 it is put. The important point is to avoid putting together in the same grade leaves that are distinctly different in character. A good plan is for the beginner to have some experienced grader make a sample of each grade from the tobacco to be sorted. These should be studied and kept at hand for comparison while sorting.

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 burley. Bulk tobacco as fast as it is sorted to prevent drying out and to retain its finish. Quality will improve in the bulk in many cases.

Marketing

District 4-H club tobacco shows and sales have been established at many of the leading market centers. Club members who can attend these shows and sales should make their plans to take part in them. Prizes are offered for the best-handled crops and best-kept records. None but 4-H club crops are sold during the sale. These shows are held in December and January. Keeping this in mind while housing will make it practicable to strip and sort the club members' crops in time for the show and sale.

TIMELY REMINDERS

While these suggestions are arranged by months, the weather must govern the activities.

- January— Plan the year's program. Meet with the leader. Study project literature. Get a good variety of tobacco seed.
- February— Select site for plant bed. Prepare plant bed—burn or steam—seed the bed—box and cover with tobacco cotton. Allow 9 x 12 feet of bed for ¼ acre.
- March— Complete work of February. Plow sod land. If land is in small grain plow when 6-8 inches high. Measure your land. See that records are complete to date.
- April— Apply stable manure broadcast. Drag or roll ground. Weed plant bed, water if necessary. Watch bed for insects. If plants make slow growth use fertilizer.
- May— Cut and drag ground. Set as early as plants are ready. Set plants 16-20 inches in rows 3 feet 6 inches apart.
- June— Finish setting by June 20. Cultivate as soon as plants are set. Keep accurate record of time. Reset missing hills. Keep down worms.
- July— Cultivate to keep down weeds. Watch for bud worms. Top early plants high (16-24 leaves) and leave 2 top suckers to grow.
- August— Complete topping. Control worms. Prepare barn for crop. Let tobacco ripen as long as it is not wasting at the ground. Cut the plants and place on sticks. House when wilted. Visit other members.
- September— Attend to curing. Fire if necessary. Seed the tobacco plot to a cover crop.
- October— Strip when the thoroughly cured tobacco comes in case. Bulk the tobacco on sticks when stripped.
- November— Write a story of your project in the record book. Complete stripping. Keep the tobacco in bulk until marketed.
- December— Sell the tobacco through your district 4-H tobacco show. Arrange with other members for hauling to market. Your completed record book is required at the show, and also to close this project.

PROJECT RECORD

Type of tobacco grown

Variety Acres

Where did you get the plants?.....

Character of the soil; rich, medium, poor

.....

What was on the land last year?

How did you prepare the land?

.....

.....

How much manure was applied?

What commercial fertilizer?

How applied? How much?

When were the plants set? How?

What cultivation was given?

.....

Did you prime your tobacco? Pounds of leaves saved?

When was the tobacco topped? When Cut?

Describe moisture conditions during the growing season

.....

Character of the season during curing. Explain

.....

BUSINESS STATEMENT

Expenses	Dollars	Cents
Use of land at \$30 an acre		
Use of tools and machinery, at 50 cents an acre		
Member's time at 15 cents an hour		
Help's time at 25 cents an hour		
Team's time at 15 cents a horse hour		
Manure, at \$3 a ton (each 2-horse wagon load is counted 1 ton)		
Use of barn at \$20.00 per acre		
Cost of fertilizer		
Other items		
Total expenses		

Receipts		
Number of sticks housed		
Pounds of leaf produced		
Selling price, per pound, cents		
Amount received for the crop		
Deduct expenses		
Net income		

I hereby certify that this project has been carried out to the best of my ability and that this is a true report.

.....
(Club Member)

Attest:
(Local Project Leader)

Date

BURLEY TOBACCO PROJECT OF

Name Age

County Date

Post office R. F. D.

Years in Club work In this project

Approved
(County Agent)

Date

Lexington, Kentucky

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January, 1946

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