

Burley-Tobacco Project For 4-H Clubs

CIRCULAR NO. 289



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REQUIREMENTS

1. Boys and girls 10 to 18 years of age inclusive may take this project.
2. Enrollment should take place not later than March 15.
3. Each member must grow at least one-fourth of an 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 to 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.

TIMELY REMINDERS, see page 9.

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BURLEY-TOBACCO PROJECT FOR 4-H CLUBS

By **E. J. KINNEY**

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

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 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 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 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 cutworms 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; sod land is best. Break 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 percent of nitrogen, 8 to 12 percent of

* 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 have a proportionately larger plant bed and amount of seed and fertilizer.

phosphoric acid and 6 to 8 percent of potash. Use 100 to 125 pounds of such fertilizer for one-quarter acre. When it is impossible to obtain a fertilizer with as high percentage of nitrogen, as recommended, use 100 pounds of the best fertilizer obtainable 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.

Applying the Fertilizer. Mark out the land in rows $3\frac{1}{2}$ feet apart. For $\frac{1}{4}$ acre, it is most convenient to drill the fertilizer in the rows by hand. To apply 125 pounds per quarter-acre, drill 4 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.

Setting the Plants. Machine setting is preferable 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 that of medium productivity and on hill land. The rows should be 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.

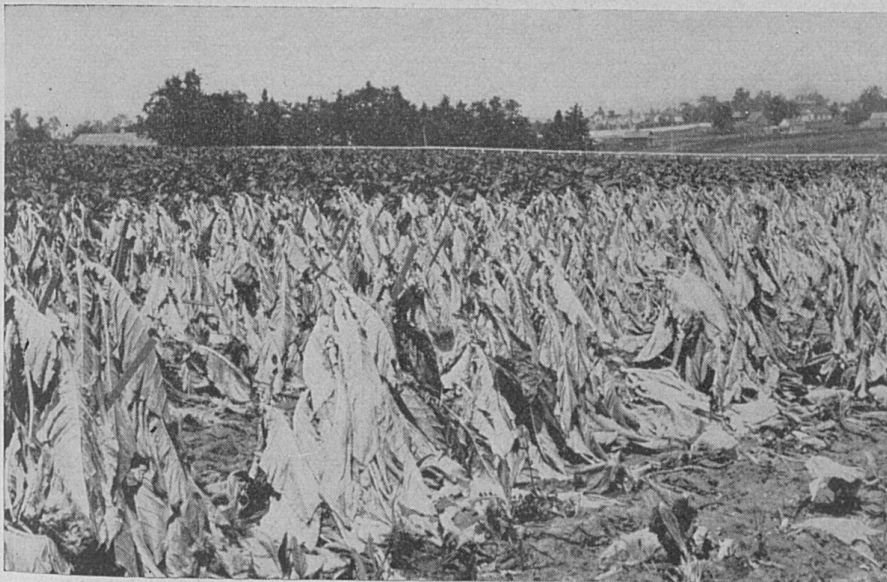
Cultivation. As soon as the plants start to grow, or before if rain crusts the ground, give the tobacco a shallow cultivation. It is desirable to loosen the soil around the plants with a hoe, but care should be taken not to loosen the plants. Further hoeing is unnecessary except to destroy weeds. Cultivate after heavy rain and 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, dust the plants with lead arsenate. This poison is much safer 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. Sixteen to twenty-four leaves should be left, depending upon the vigor of the plant. 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 three or four inches.

Harvesting. Cut White Burley when the middle leaves show a distinct yellow tinge. In very dry weather it may be necessary to cut before the crop is mature, to prevent loss of the lower leaves. 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. Splitting the stalk is preferable to spearing. White Burley tobacco is put on sticks as it is cut.



White burley tobacco immediately after cutting.

Curing Burley Tobacco. Usually the tobacco will be cured with the other tobacco on the farm; hence 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. It is suggested that a hygrometer be used and daily records kept of the temperature and humidity while the tobacco is curing. This helps teach the value of this instrument as an aid in successful curing.

Good results in curing depend much upon the construction of the barn. Thoro controlled ventilation is necessary and barns should have both side and top ventilators. Where heat is used in curing—and often it is necessary to prevent injury to the crop—adequate top ventilation is very important. The best top ventilation is provided by the so-called ridge ventilator. Instructions for building this may be obtained from the Kentucky Experiment Station. Tobacco barns 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 heat the barn 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 all side ventilators and heat the barn moderately with coke stoves. Be sure, however, to keep top ventilators open. Do not keep very hot fires. A temperature of 70° F. is sufficient. 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, shut all side ventilators tight and keep the ridge ventilators wide open. Continue firing until cured parts of leaves rattle. Usually, raising the temperature 10° above the outside temperature is sufficient. A hygrometer is very useful in determining when conditions favor houseburn. As long as average relative humidity does not exceed 75 percent, there is little danger of houseburn. If it exceeds 80 percent, however, and remains at this point over 36 hours, and the temperature is 70° or over it is advisable to start fires. 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; hence they can 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 White 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 give the required assistance.

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. 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, 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 color 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 considered 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. Finally, many growers make two or more divisions of all the natural grades, the separations being based chiefly upon length of leaf. The trash and lug grades usually bring the highest prices. Flyings come next, bringing as a rule about 80 percent as much as lugs. Bright leaf usually sells for about 70 percent of the lug price and red leaf 25 to 30 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 White 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. Where club members have access to these shows and sales they should make their plans to participate. 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 and keeping this in mind while housing will make it practicable to strip and sort the club members' crop 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 (fence row or woods). Prepare plant bed—burn or steam—seed the bed—box and cover with tobacco cotton. Allow 9 x 12 feet of bed for $\frac{1}{4}$ 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— Learn how to make a hygrometer, also method of firing. 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. Use hygrometer. Fire if necessary. Seed the tobacco plot to a cover crop.
- October— Strip when the thoroly 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 thru 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?

When was the tobacco topped? When cut?

Describe moisture conditions during the growing season

Character of the season during curing. Explain

F
prepa
ping a

Date

BUSINESS STATEMENT

Expenses	Dollars	Cents
Use of land at \$10 an acre		
Use of tools and machinery, at 40 cents an acre		
Member's time at 10 cents an hour		
Help's time at 20 cents an hour		
Team's time at 9 cents a horse hour		
Manure, at \$2 a ton (each 2-horse wagon load is counted 1 ton)		
Cost of fertilizer		
Other items		
Total expenses		

Receipts		
Pounds of leaf produced		
Value, per pound, cents		
Value of the crop		
Deduct expenses		
Net receipts		

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

STORY—Continued

A series of horizontal dotted lines for writing.

BURLEY TOBACCO PROJECT OF

Name Age

County Date

Post office R. F. D.

Years in Club work In this project

Approved
(County Agent)

Date



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