

AEN-59

CURING BURLEY TOBACCO

ISSUED: 4-86

George A. Duncan, Extension Agricultural Engineer

Linus R. Walton, Professor

Agricultural Engineering Department

Proper curing of burley tobacco depends as much on management and facilities as it does on the weather. Each year there are good and bad periods of curing weather; overall, the natural air curing in Kentucky and surrounding states produces high quality burley tobacco.

Allow Maturity

Allow the tobacco to ripen as much as possible. Mature tobacco wilts and cures much better than immature tobacco. Agronomic studies have shown that topping when about 50% of the plants show open blossoms and then harvesting 3 to 4 weeks after topping is the best maturity for burley tobacco.

Maximize Field Wilt

Do your best to schedule cutting to get maximum field wilting time for moisture and weight loss. One field study has shown that burley loses approximately 17% of weight after 3 days of field wilting, 22% after 5 days, and 29% after 7 days. Another study showed approximately 10 cents/lb better market price after 3 days of field wilting for late harvested tobacco (late September). Thus, handling and curing are much better if you can achieve good field wilting. To lessen damage from rain during field wilting, try sticking or piling the tobacco on grass sod strips or borders around the field or leave hanging on portable frames or railwagons for an extra day or two as you rotate the cutting and housing cycle.

Choose the Best Curing Time

Generally, early to mid-August is not the best time for tobacco to be hanging in barns. The hot, humid weather and low wind velocities both day and night are not good for moisture removal and curing of freshly housed tobacco. The high temperature and moisture conditions are conducive to growth of bacterial organisms that produce the slimy stems and "houseburn" conditions. The moderate temperatures and lower humidity of late August and throughout September are better for good curing of burley. So, if you can manage to wait until early to mid-September for cutting, you have a better chance of good curing conditions. Otherwise, try to get as much field wilt as possible for August cuttings, and don't crowd the spacing in the barn unless you are prepared to use supplemental curing methods (heat or fans).

Provide Adequate Ventilation

Be sure your barn has adequate ventilation openings. A good burley barn has $\frac{1}{4}$ to of the sidewall as ventilator openings. Repair the vent doors so they will open easily. You may want to hinge a couple more boards per bent if you have less than $\frac{1}{4}$ of the sidewall in ventilation openings.

Remove vines, trees and other obstructions from beside the barn that block air movement through the barn. Make sure you have enough ventilation to compensate for any blockage caused by nearby storage sheds.

Practice Good Housing Techniques

House tobacco only when dew, rain or other surface moisture has completely dried from the plant. Surface moisture can quickly cause houseburn problems.

When housing, stress to your workers the importance of spreading and shaking the plants on the stick to untangle leaves when positioning the stick on the rails.

For closely spaced rails where tobacco will likely overlap, stagger and space the sticks so the green tips of one rail will not be shingled in contact with the drier flyings of the next rail. Allow this space between plants for air circulation and moisture removal. Houseburn generally starts in the fat stems of the lower leaves where green, moist tips of upper plants shield the flyings of lower plants from airflow. For barns with tier rails less than 4 ft apart vertically, you might want to skip every other rail vertically and hang the tobacco closer on the rails to prevent this overlap, thus improving the air movement and curing results in the process.

Space the sticks on the rail as far apart as you can for good natural air ventilation, depending, of course, on your crop size and barn space available. Generally, a stick spacing of 9 to 12 in. is used for taller conventional barns with tier rails spaced 3½ to 4 ft apart vertically, 7 to 8 in. for the 3-tier air cure barns with 4½ to 5 ft vertical tier rail spacing, and 6 to 7 in for the special 2-tier forced-air designs with 5 to 5½ ft vertical spacing.

Manage the Ventilation

For normal and humid weather during the first 2 to 3 weeks of curing, leave ventilators and all other barn doors wide open, except to protect the tobacco from blowing rain. Any air movement through the tobacco during this period is better than stagnant, closed conditions even if the air is damp and humid at night. The tobacco will generally release enough moisture to make the inside more humid than the outside for a closed barn during this time. Close the doors only if you expect a hard-blowing rain and wish to keep water off the tobacco and out of the barn. Open immediately afterward. Use gates or wire to keep cattle out while barn doors are open.

After the first 3 to 4 weeks of curing, the leaf lamina becomes mostly brown and fairly dry, and the "fat" midribs also are beginning to dry. At this time, you can begin to close the doors each night to reduce humidity entering the barn. Open the doors each morning to continue the daily drying process.

If the weather is rather dry (humidity averages below 60% daily) during the first 3 to 4 weeks, the tobacco may be drying too fast, causing a greenish or a yellow "piebald" color to be set in the leaf. If this is the case, close all doors in the daytime to retain all moisture possible. Keep the doors closed at night also to retain moisture, unless the night humidity reaches 80 to 95% when opening the doors could let moisture into the barn. In extremely dry weather, producers have wet the barn floor and surroundings to raise the humidity inside the barn and prevent too rapid drying.

Any cool, dry, windy weather of late September and early October can also cause abnormally fast curing and a greenish color to be set in leaves that are still in the green or

greenish-yellow stage. Whenever the air temperature drops below and tobacco is still in the green and yellow stage of curing, the ventilator doors should be closed to reduce the effects of this "cold" weather on the tobacco.

Be Prepared

By following all the above "good curing steps," you should not have any curing problems. However, some producers still would like to have some supplemental heat, fans or other curing aids handy in case of bad weather. Refer to other publications for further information on the use of supplemental heat or fans, or contact your county Extension agent.