



Barn Management for Curing Connecticut Broadleaf Cigar Wrapper Tobacco

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Introduction

Connecticut Broadleaf tobacco is used primarily for cigar wrapper and binder and was traditionally grown in Connecticut and Massachusetts but has also been grown in Pennsylvania. In recent years, these areas have not been able to supply leaf buyers with enough wrapper leaf to meet the increasing demand for natural leaf cigar wrapper. Therefore, growers in Tennessee and Kentucky have been producing Connecticut Broadleaf to market as cigar wrapper tobacco. Unlike dark fire-cured or dark air-cured cigar wrapper production, there are no secondary markets for growers to target if wrapper quality is not achieved. Wrapper tobacco is classified as very high-quality tobacco leaf that is used for the outer layer of a cigar. Cigar wrapper quality leaf can have two to eight wrapper cuts from a single leaf of tobacco. Connecticut broadleaf cigar wrapper is classed

into three wrapper grades: No. 3 wrapper will have two wrapper cuts per leaf; No. 2 wrapper (also termed 'binder' by some dealers) will have three to five wrapper cuts per leaf; and No. 1 wrapper will have six to eight wrapper cuts per leaf. A wrapper cut is an area of the leaf approximately 2½ inches by 4½ inches that has no blemishes that can be used to wrap one cigar. Significant price cuts are observed for grades that do not qualify for wrapper and become classified as cigar filler. Filler style Connecticut Broadleaf will have lower value than burley or dark tobacco used in snuff production. Filler grade Connecticut Broadleaf should still have one wrapper cut per leaf. If the leaf has no wrapper cuts, it is considered trash with very minimal value. See publication AGR-258: Production of Connecticut Broadleaf Cigar Wrapper Tobacco in Kentucky and Tennessee for more information on field production practices for Connecticut Broadleaf.

Curing and Barn Management

After Connecticut Broadleaf has been carefully harvested, it is now time to consider barn management and the curing season. Connecticut Broadleaf requires more intensive barn management compared to burley or dark air-cured as maintaining recommended relative humidity is very important for proper curing and avoiding problems such as rot and mold.

The first step in curing and barn management involves the harvest date. It is difficult to achieve targeted temperatures and relative humidity if the crop is harvested too late in the season. September 1 should be the latest harvest date in the production regions of Tennessee and Kentucky and the best crops of Connecticut Broadleaf are often harvested between late July and mid-August. Harvest date is not the only field consideration, as nitrogen fertility and the time between topping and harvest has an impact on the outcome of the cure. Connecticut Broadleaf must be handled very carefully at harvest to avoid leaf breakage, bruising or other leaf damage. Handling at harvest should follow procedures used in dark tobacco types to allow for careful field wilting without causing sunscald.

The next decision that influences the curing process is stick spacing in the barn. Sticks should be placed in a way that air circulation is not an issue. Appropriate air spacing allows for moisture removal whereas too tight of a spacing can result in houseburn. Stick spacing for Connecticut Broadleaf should follow guidelines for dark air-cured tobacco; 10- to 12-inch stick spacing should be adequate for airflow while not underutilizing barn space. Also, be sure that you have chosen ideal air-curing barns that provide good ventilation.

The targeted curing conditions are average daily temperatures of 60°F to 90°F and an average daily relative humidity of 70-75 percent for at least the first 28 days of the cure. At this point in time, the producer is

attempting to control the environment to allow the curing leaf to remain living for the necessary chemical reactions to take place. If this process happens too rapidly and drying occurs before lamina is colored brown, there is potential that cured leaf will be green and lack the visual characteristics for high quality. If conditions are too dry, consider closing the ventilation during the day and opening during the night. Additionally, moisture can be added to the barn to raise the humidity during dry, low humidity periods. Where average daily relative humidity falls below 65 percent for more than two days, it is advantageous to add water to the floor and even the inside walls of the barn. Water should never be applied directly to the tobacco during curing. It is most beneficial to add water to the barn in the evening prior to nightfall when humidity will be higher instead of the morning when humidity will be going down during the day.

On the other side, if conditions are too wet, the barn doors should be open during the day but closed at night. Fans can be used to circulate air to help with pockets of humidity that may result in molds and/or rots. Use of supplemental heat is allowed if needed in Connecticut Broadleaf and has been tested at the University of Kentucky to lower humidity during prolonged wet periods. This use of supplemental heat should not be confused with fire curing as excessive smoke aroma is not acceptable with Connecticut Broadleaf cigar wrapper tobacco types. Use of wood chunks or slab pieces (no sawdust), charcoal or propane are the preferred sources of fuel for heat. When average daily relative humidity exceeds 80 percent for more than two days, addition of heat can be beneficial to lower average humidity to 70-75 percent. Supplemental heat can lower the relative humidity from greater than 80 percent to less than 60 percent during high humidity periods but should be used sparingly (4-8 hours per day, not exceeding 100-105°F), and not used for extended periods of time to cause premature leaf drying. The purpose of supplemental heat in Connecticut Broadleaf is not to make the barn hot but to lower the humidity in the barn to acceptable levels during high humidity periods.

Barn Monitoring

The easiest way to monitor temperature and relative humidity levels in the barn is by installing sensors. Several sensors are available at relatively low cost that will log and

display temperature and relative humidity throughout the entire cure. Sensors can be purchased for less than \$300 [HOBONet Temp/RH Sensor RXW-THC-xxx | Onset Data Loggers (onsetcomp.com)].

Managing Mold

As Connecticut Broadleaf is harvested very early and will be nearly cured by late September when temperatures and relative humidity may still be quite high in Kentucky and Tennessee, some mold can be expected in most years. Mold is usually most problematic on the bottom tiers of barns where tobacco is closest to the ground and humidity is highest. Mold growth can be minimized by either increasing air flow, lowering humidity or both. Barns can be managed to maximize dry air flow by opening all doors and vents during the day and closing them at night. Fans can also be placed in barns to increase air flow but should only be run during the day. To lower humidity, heat can be used for 4-8 hours per day. Suitable heat sources will produce little or no smoke and include wood chunks such as sycamore as well as charcoal or propane. Propane burners have been shown to work well in 2021 research trials, as they can be used with much less management than wood or charcoal. Small propane burners such as turkey fryers connected to 20-lbs. grill tanks can be good heat sources for barns, although it will take several to cause significant changes in humidity. For a small 1-acre capacity (20 by 48 feet) air-curing barn, it takes six to eight propane burners to significantly affect temperature and humidity.

For these reasons, selecting a barn that is less difficult to manage is advantageous for producing Connecticut Broadleaf cigar wrapper tobacco. If possible, avoid barns in low lying areas that have increased potential for fog and pockets of moisture. It is easier to add moisture than to remove moisture during the cure. If you notice mold growth on the leaf midrib, it is likely that there is too much residual nitrogen which slowed the drying process for the midrib. Using less nitrogen or increasing the days between topping and harvest should help combat molds on the midrib in the future. Ideal nitrogen rates for Connecticut Broadleaf are 150 to 175 lbs. N/acre (no more than 200 lbs. N/acre maximum) and optimizing harvest timing to two to no more than three weeks after topping. There are no recommended compounds or products to control mold on curing tobacco.



Summary

Connecticut Broadleaf cigar wrapper tobacco is a high risk/high reward scenario for tobacco growers in Kentucky and Tennessee. The contract pricing for wrapper and binder grades are attractive to growers, however filler grades are not economical. The traditional mindset of cured leaf yield per acre is not necessarily the target in Connecticut Broadleaf.

Rather, the target is to maximize the cured cigar wrapper grades per acre and minimize filler grades. The percentage of the crop that is classified as wrapper is very much related to profit; it is estimated that for Connecticut Broadleaf to be profitable, at least 40 percent of a grower's crop should be classified in wrapper grades, or the average price received for the crop should be at least \$3.00 per pound. There are secondary markets for dark fire-cured wrapper if a grower does not make wrapper quality, however the only secondary market for Connecticut Broadleaf is filler grades that do not provide good returns on investment. Production practices in the field and during curing should maximize the wrapper and binder grades of Connecticut Broadleaf. Harvesting at the right time, careful harvest practices to prevent leaf damage, adequate stick spacing in the curing barn and intensive barn management (specifically humidity) will benefit the bottom line of producing Connecticut Broadleaf cigar wrapper tobacco.

Key Points

1. Harvest date, careful harvest techniques to prevent leaf damage and stick spacing will impact the cure of Connecticut Broadleaf. Target late July to mid-August harvest with September 1 being the latest harvest date and leave 10-12 inches between sticks in the barn.
2. Choose barns that are ideal for air curing and avoid barns that are in locations that have high humidity (e.g. low areas, excessive fog).
3. The first 28 days of the cure are very important. Curing conditions for this timeframe should provide average daily temperatures of 60°-90°F and 70-75 percent relative humidity.
4. Barn management includes opening and closing doors and vents depending on relative humidity, adding water to the barn floor during periods of low humidity, and adding supplemental heat during periods of high humidity.

References

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