

Production of Connecticut Broadleaf Cigar Wrapper Tobacco in Kentucky and Tennessee

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Tobacco dealers have recently taken an interest in purchasing Connecticut Broadleaf tobacco produced in Kentucky and Tennessee. Connecticut Broadleaf has traditionally been grown in areas of the Connecticut River Valley in Connecticut and Massachusetts. However, decreased production in this area along with increased demand for natural leaf cigar wrappers has caused tobacco dealers to pursue other tobacco-producing areas for this type. At first glance, Connecticut Broadleaf tobacco resembles dark air-cured tobacco, but it has enhanced leaf quality characteristics that can increase its potential value for use as cigar binders and wrappers.

Leaf Grades, Characteristics, and Projected Prices

Wrapper is the term used to describe very high-quality tobacco leaf that is used for the outer layer of a cigar, which is the most visible portion. Depending on leaf quality, two to eight wrappers may be cut from a single leaf of tobacco. Binder is used just inside the outer wrapper leaf of a cigar, while the remainder of the cigar inside the binder is known as filler. Prices offered for cigar wrapper and binder grades are high (\$4 to \$6/lb) compared to current prices offered for dark and burley tobacco. However, prices offered for cigar filler are considerably less than current prices for dark and burley tobacco (\$1.75/lb or less). Premium (#1) wrapper will contain six to eight wrapper “cuts” per leaf, while #2 wrapper/binder will contain two to five wrapper cuts per leaf. See Figure 1 for illustration of area of a wrapper cut on a leaf. Total yields of Connecticut Broadleaf tobacco are relatively low at around 2000 lb per acre of cured leaf. Therefore, profitability is completely dependent on the amount of wrapper/binder grades produced. To be

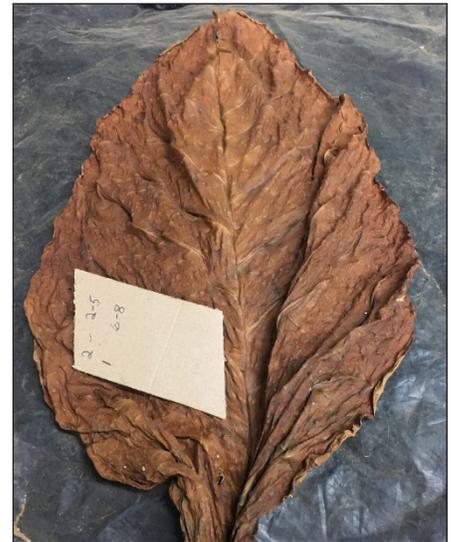


Figure 1. Area of wrapper “cut” in relation to cured leaf of Connecticut Broadleaf tobacco. Premium (#1) wrapper requires at least six wrapper cuts per leaf while #2 wrapper/binder requires at least two.

profitable, growers producing Connecticut Broadleaf tobacco should strive for at least 50% wrapper/binder grades.

To be considered cigar wrapper, leaves must possess certain qualities:

- at least 9 inches wide
- uniform brown color
- excellent elasticity (stretch)
- relatively thin
- free of flaws (holes, bruises, disease spots, flecking, watermarks, mixed color areas)

Extreme care during harvest and handling are very important to prevent any damage to potential wrapper leaves. Leaves of sufficient size to qualify for wrapper grades will usually be found in the upper half of the stalk. Binder grades may come from the upper or mid-stalk portions.

General Production Guidelines Varieties

Although a Connecticut Broadleaf variety trial was conducted at UKREC in Princeton in 2019, there is currently little or no variety selection in Connecti-

cut Broadleaf like we are accustomed to with burley and dark tobacco. Up to this point, the dealer offering the contract supplies seed of one variety to the grower. This seed is the dealer’s selection of a standard variety that has been grown in the traditional production area for many years. No Connecticut Broadleaf variety has any resistance to black shank; therefore, Connecticut Broadleaf should only be grown in fields that have absolutely no known history of black shank. The current seed being provided is a selection of a variety known as ‘33’, which only has disease resistance to tobacco mosaic virus (TMV).

Transplant Production

Production of Connecticut Broadleaf transplants in the float system is similar to production of dark or burley tobacco transplants, so the same general guidelines for transplant production should be followed (see *Burley and Dark Tobacco*

Production Guide [ID-160] for details). However, Connecticut Broadleaf varieties grow considerably faster in the float bed and field. Growth of this type tends to be a week ahead of dark and burley tobacco in the float bed and requires earlier clipping. In addition, Connecticut Broadleaf tends to set buds closer to the top of the plant than burley and dark tobacco, making it more difficult to manage plant height if clipping begins later than it should. To minimize clipping problems, Connecticut Broadleaf and burley or dark types should not be grown in the same float bed. Standard float bed fertility programs and spray programs with mancozeb (Manzate), acephate (Orthene), *Bt* (Dipel), streptomycin, and a single application of azoxystrobin (Quadris) that are used in dark and burley are also appropriate for Connecticut Broadleaf. Confer with the buyer for more specific information or restrictions on the use of certain products.

Field Production

Site Selection

As with burley or dark tobacco, it is advisable to put Connecticut Broadleaf in fields that have good soil drainage, have been out of tobacco for at least two years, and have no history of black shank and minimal history of target spot, frog-eye leafspot, or angular leafspot. Fields with windbreaks that provide some protection from severe storms are also advised.

Fertilization

Since cigar wrapper tobacco leaves need to be thinner and leaf yields are expected to be lower, nitrogen recommendations are less than those used for dark or burley. Our 2019 research results suggest that optimal total nitrogen for Connecticut Broadleaf should be between **150 and 175 lb N per acre** (Table 1). Although total yield may increase slightly, percent wrapper/binder yield tends to decrease at nitrogen rates of 200 lb N per acre or more. All of the nitrogen can be applied prior to transplanting, or applications can be split with half to two-thirds applied prior to transplanting and the remainder applied at two to three weeks after transplanting. Phosphorus should be applied according to soil test recommendations for burley or dark tobacco. Some Connecticut Broadleaf contracts recommend

Table 1. Yield and percent wrapper results from 2019 Connecticut Broadleaf nitrogen rate trial, UKREC, Princeton.

Nitrogen Rate (Total lb N/A)	PreTransplant N (lb N/A)	Sidedress N (lb N/A)	Total Yield (lb/A)	% Wrapper/Binder
75	75	0	1900	23
100	75	25	2002	34
125	75	50	2198	32
150	75	75	2052	36
175	75	100	2261	37
200	75	125	2145	29
225	75	150	2339	29

LSD_{0.10} =

334

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applying 200 to 225 lb potassium per acre regardless of soil test recommendations, although we do not currently have data that compares this recommendation to a standard soil test recommendation for potassium. Sulfate-of-potash (0-0-50) is the recommended potassium source. Soil pH recommendation for Connecticut Broadleaf is the same as that for dark and burley (6.2 to 6.6).

Transplanting

Standard plant populations for Connecticut Broadleaf fall between those currently recommended for dark and burley tobacco. Recommended plant population is between 6,000 and 6,400 plants per acre. This is approximately 24- to 26-inch plant spacing on 40- to 42-inch rows. Since more preventative pesticide applications are recommended for Connecticut Broadleaf, growers should consider leaving roadways or spray rows in the field to avoid damaging leaves from driving the sprayer through the tobacco.

Pest Control

Although much emphasis is placed on integrated pest management (monitoring for pest presence and thresholds before pesticide applications are made), for dark and burley tobacco crops, preventative applications are the key for cigar wrapper crops like Connecticut Broadleaf. Most successful Connecticut Broadleaf growers will be making fungicide or insecticide applications every 7 to 14 days throughout the season. Residual insecticides such as imidacloprid (Admire Pro or generics) or thiamethoxam (Platinum) should be used as tray drench or transplant water applications for residual aphid and flea beetle control, as well as chlorantraniliprole

(Coragen) in transplant water applications for residual worm control. Ridomil Gold SL or Orondis Gold should be used in transplant water as preventative insurance against black shank and Pythium, but remember that Connecticut Broadleaf tobacco should not be transplanted into fields with any history of black shank.

During the season, routine foliar applications of insecticides such as Orthene, acetamiprid (Assail), or cyantraniliprole (Exirel) can be used for prevention of flea beetles and worms, and preventative applications of azoxystrobin (Quadris and generics) fungicide, alternated with Manzate fungicide, should be used to preventatively manage frog-eye leafspot and target spot. Up to three field applications of azoxystrobin can be applied at 8 oz per acre per application, with Manzate applications (2 lb/acre per application) made between azoxystrobin applications. However, preharvest intervals limit the number of applications that can be made. Quadris can be applied no later than 21 days prior to harvest and Manzate can be applied no later than 30 days prior to harvest. Be aware that Quadris fungicide has the potential to cause flecking injury on leaves under certain conditions. Always apply Quadris alone with nothing else in the spray tank, and do not apply in the heat of the day (between 10 am and 5 pm on hot, sunny days), or with excessive pressure. If blue mold threatens (is found within 100 miles), growers should be prepared to apply blue mold fungicides such as mandipropamid (Revus). Fluopicolide (Presidio) can be used in soil applications after transplanting for black shank prevention or as foliar sprays for blue mold management. Although angular leafspot has not been a common problem in

Connecticut Broadleaf in Kentucky and Tennessee so far, the crop is susceptible and growers should be prepared to make preventative applications of streptomycin (1 lb/100 gal water) ahead of damaging storms in areas where angular leafspot is a concern. Repeated applications will be necessary if angular leafspot is confirmed.

Based on grower experiences in 2018 and research results in 2019, Connecticut Broadleaf may be more susceptible to late-season frogeye leafspot infections that can result in “green speck” in the cured leaf (Figure 2). These leaves would obviously not be graded as wrapper or binder. For this reason, most should consider a final Quadris application near the 21-day preharvest interval. Again, confer with the buyer for more specific information or restrictions on the use of certain products. The 2019 research results showed a strong positive response to Quadris application both in total yield and wrapper/binder percentage (Table 2). One Quadris application at layby (4 weeks after transplanting) was better than no fungicide applications at all, but highest yield and percent wrapper/binder came from two applications of Quadris (at layby and at 21 days prior to harvest) with a Manzate application in between. Increased yield and percent wrapper in this trial was a direct result of less green speck in the cured leaf where more fungicide applications were made. However, other factors, such as humidity management during early curing stages, may also be associated with green speck in the cured leaf.

Topping and Sucker Control

Connecticut Broadleaf is a very early flowering and fast-growing tobacco in the field. Where dark tobacco may be ready to top in about nine weeks, Connecticut Broadleaf may be ready to top in about seven weeks. Lower topping heights result in larger leaves and are a standard practice for cigar wrapper tobacco. Early flower topping should be the target for Connecticut Broadleaf, and plants should be topped down to 12 to 14 usable leaves. For sucker control, manual stalk rundown applications of fatty alcohols (Off-Shoot T, Sucker Plucker, Fair 85, Royal Tac M) and local systemics (Prime+, Butralin, or Drexalin Plus) with backpacks or

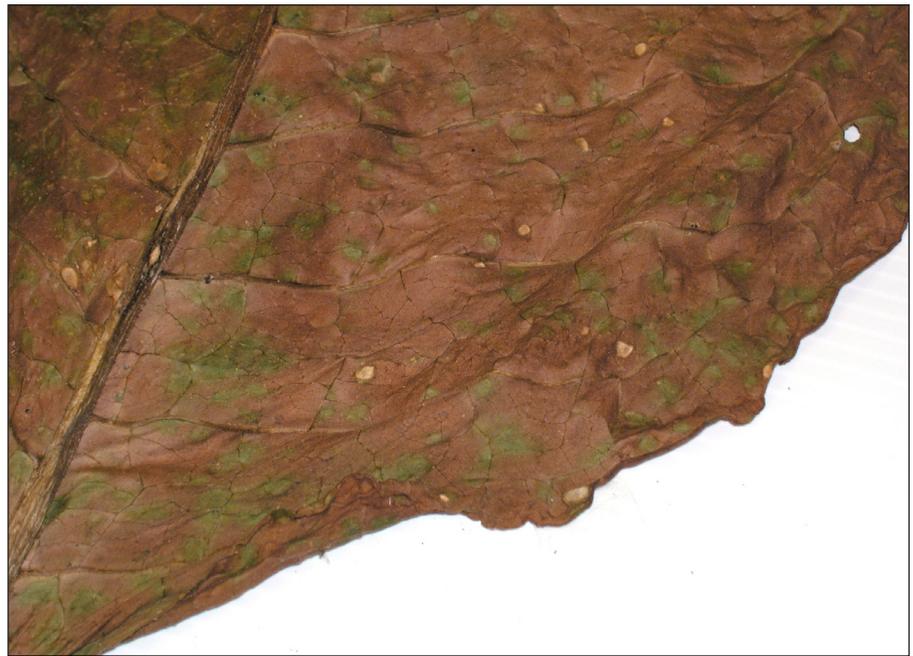


Figure 2. “Green speck” on cured leaf associated with late-season Frogeye leafspot infection

Table 2. Yield and percent wrapper results of 2019 Connecticut Broadleaf fungicide trial, UKREC, Princeton, Kentucky.

Treatment	Rate	Timing	# Fungicide applications	Total Yield (lbs/A)	% Wrapper/Binder
No foliar fungicide	-	-	0	2065	33
Quadris	8 oz/A	Layby (4 wks)	1	2357	39
Quadris Manzate Quadris	8 oz/A 2 lb/A 8 oz/A	Layby (4 wks) 5.5 wks Topping (7 wks)	3	2532	42

LSD_{0.10} =

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droplines are recommended. Remember that fatty alcohols and local systemics require direct contact with suckers at every leaf axil to be effective. Foliar spray applications of these products or applications of MH are not recommended due to undesirable effects on leaf size and texture.

For manual stalk rundown applications with droplines attached to spray booms, attach rubber tubing 8 to 10 feet long where nozzles are connected to the spray boom. Attach a trigger attachment (with or without a short wand attachment) to the end of the tubing (these are available in plastic and brass from the spray parts section of many farm supply stores). A large orifice nozzle can be attached to the trigger or trigger/wand attachment, but no nozzle at all can also be used. Use very low pressure (10-12 psi or less). If tobacco

is straight, it only requires about ¾ oz of solution per plant to get good rundown on stalks, and possibly even less with short plants of Connecticut Broadleaf topped down to 12 to 14 leaves. Remember to provide adequate personal protective equipment (PPE) like gloves, eye protection, and disposable coveralls to protect workers from pesticide exposure when making manual stalk rundown applications.

Harvest

In order to achieve the correct leaf body and thickness, protect leaf integrity of wrapper leaves, and prevent leaf damage from weather in the field, Connecticut Broadleaf needs to be harvested while it is fairly immature, no later than three weeks after topping. This type of tobacco will require field-wilting after cutting

but before putting plants on sticks. Take precaution against sunburn by not cutting more than can be picked up quickly if sun becomes intense during field-wilting. Spike/spear as soon as tobacco is pliable enough to be put on sticks without breaking leaves. When cutting, ensure stalks are cut at ground level to prevent stumps from poking holes in wrapper leaves laid down to field-wilt. Place sticks in the row middle instead of over the row to avoid dragging plants over stumps. Load sticks onto scaffold wagons immediately after spiking/spearing, and do not push sticks closely together to prevent bruising and leaf breakage. For assistance with constructing scaffold wagons, see <https://www.uky.edu/bae/content/tobacco-plans#wagons>.

Loaded scaffold wagons should be pulled into a shaded area for additional wilting for a day or so prior to housing/hanging in the barn. If shady areas are not available, wagons can be covered with shade cloth to prevent sunburn. Sticks should be housed/hung in air-curing barns with good ventilation. Use at least 10-inch stick spacing on the tier and consider skipping tiers in older dark barns that have short (3 ft) vertical tier spacing.

Curing

More barn management during curing is required for Connecticut Broadleaf than for burley or dark air-cured tobacco. Take advantage of better weather conditions for curing when scheduling harvest. Make every effort to harvest Connecticut Broadleaf while weather is still warm for the best air-curing conditions. Target harvest by September 1 at the latest. Ideal curing conditions during the first four weeks of curing are daily average temperatures of 60° to 90°F and daily average relative humidity of 70 to 75 percent. For most of the curing season, barn doors and vents should be open during

the day but consider closing doors and vents at night when humidity is high. If conditions become excessively dry (<60% average daily relative humidity), doors and vents may need to be closed during the day and open at night and water can be added to the barn floor. If conditions become excessively wet (>80% average daily relative humidity), consider using fans to move dry air through the tobacco.

During prolonged wet, high-humidity periods, it may be necessary to use moderate levels of heat in the barn to lower the humidity. Propane burners or small fires with dry wood or charcoal (limited smoke) can be used on the barn floor for short periods (6-8 hours at a time) to lower humidity during wet periods.

Market Preparation

The 2019 experience suggests that sorting wrapper/binder and filler grades in a crop of Connecticut Broadleaf takes between 2 and 2.5 times longer than stripping a typical crop of dark or burley tobacco. In 2020, leaf dealers contracting Connecticut Broadleaf tobacco are allowing growers to use a 'straight strip' sorting method to reduce time spent sorting wrapper and non-wrapper leaves. With this method, growers will strip off and segregate the trash leaves at the bottom of the stalk, then the obvious filler leaves in the lower stalk. All of the leaves in the top half of the stalk will be stripped together and oriented in C48 cardboard boxes or other marketing packages the dealer supplies. At delivery, the dealer will collect samples from these boxes to make a determination of the percent wrapper grades in the crop and set the price per pound accordingly. Higher prices will be offered for crops with higher percent wrapper leaves based on samples taken at delivery. Contact the dealer for specific questions on market preparation requirements.

Summary

Connecticut Broadleaf tobacco may be profitable for Kentucky and Tennessee growers that use detail-oriented management approaches. However, this is a new type of tobacco that requires more management considerations, fungicide/insecticide applications, and labor than the traditional types grown in Kentucky and Tennessee. The shortened field season for Connecticut Broadleaf may allow some labor efficiency where harvest of this type can be complete before burley or dark tobacco harvest begins. We are still learning about optimal production methods for Connecticut Broadleaf tobacco in Kentucky and Tennessee. To build on 2019 results, field research trials will continue in 2020 to provide more specific recommendations in the future. For tobacco growers considering Connecticut Broadleaf, it is advised to start small with no more than one or two acres, as this is a high risk, potentially high reward crop. Growers are advised to have good communication with their buying company for this type of tobacco and to be sure to understand the terms of their contract. Buyers may have very specific preferences for the types of pesticides used and other management practices.

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