University of Kentucky
College of Agriculture, Food and Environment
Cooperative Extension Service

CONNECTICUT BROADLEAF CIGAR WRAPPER TOBACCO – 2020 GENERAL PRODUCTION GUIDELINES

PLANT and SOIL SCIENCES FACT SHEET
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Introduction

There has been recent interest from tobacco dealers 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 traditional area along with increased demand for natural leaf cigar wrappers has required tobacco dealers to look at other tobacco-producing areas for production of this type. Connecticut Broadleaf tobacco is similar to dark air-cured tobacco, but generally has enhanced leaf quality characteristics that could increase its potential value for use as cigar binders and wrappers. 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 of the cigar. Depending on leaf quality, two to eight wrappers may be cut from a single leaf of wrapper tobacco. Binder is the term used to describe leaf that is used just inside the outer wrapper leaf of a cigar, while the remainder of the cigar that is 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 lbs per acre of cured leaf. Therefore, profitability of Connecticut Broadleaf tobacco is highly dependent on the amount of wrapper/binder grades that can be produced. To be profitable, growers producing Connecticut Broadleaf tobacco should strive to produce at least 50% wrapper/binder grades.

To be considered cigar wrapper, leaves must be at least 9 inches wide, have uniform brown color, excellent elasticity (stretch) throughout the leaf, be relatively thin, and be nearly free of flaws such as holes, bruises, watermarks, or mixed color areas. For this reason, extra management during harvest and handling are very important to prevent any damage to leaves that may have potential to become wrapper leaves. Leaves that are of sufficient size to qualify for wrapper grades will usually be found in the upper half of the stalk, while binder grades may come from the upper or mid-stalk portions.

Although Connecticut Broadleaf will definitely require more management than that required for burley and dark tobacco, it is also a fairly short-season crop that may be ready to harvest in as little as 10 weeks after transplanting. This may provide for some labor efficiency when grown along with other tobacco types,

allowing growers to harvest all of this type before they finish harvesting burley and before they start harvesting dark tobacco.

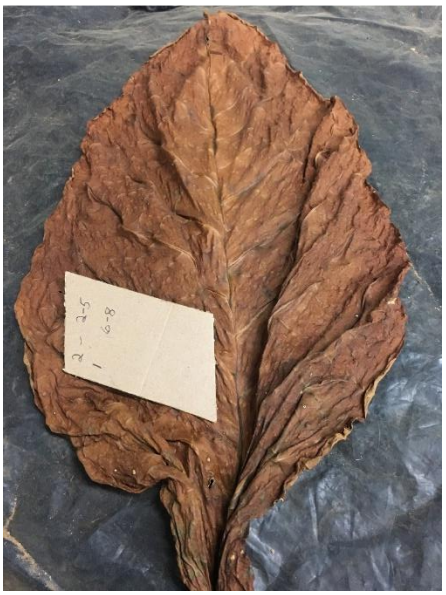

Figure 1. Area of wrapper 'cut' in relation to cured leaf of Connecticut Broadleaf tobacco. Premium (#1) wrapper requires at least six wrapper cuts per leaf while #2 wrapper/binder requires at least two.

General Production Guidelines

Varieties

Currently, there is little or no variety selection in Connecticut Broadleaf like we are accustomed to with burley and dark tobacco. Up to this point, the dealer offering the contract has supplied the 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. Although there are a few other varieties, growers are currently limited to the seed that the dealer supplies to them. 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'. Disease resistance in this variety is limited 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. However, Connecticut Broadleaf varieties grow off considerably faster in the float bed and in the field. Growth of this type may be a week ahead of dark and burley tobacco in the float bed, so will require earlier clipping. To aid in clipping, it is advisable not to put Connecticut Broadleaf and burley or dark types in the same float bed. 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 with clipping if clipping begins later than it should. Standard float bed fertility programs and spray programs with mancozeb (Manzate), acephate (Orthene), *Bt*

(Dipel), streptomycin, and a single application of Quadris that are used in dark and burley would also be appropriate for Connecticut Broadleaf. Confer with the buyer for more specific information or restrictions on the use of certain products.

Field Production

Fertilization

As cigar wrapper tobacco leaves are generally thinner than upper stalk dark and burley leaves and leaf yields are expected to be lower, nitrogen recommendations are less than those used for dark or burley. Our 2019 research results suggested that ideal total nitrogen for Connecticut Broadleaf should be between **150 and 175 lbs N/acre**. Although total yield may increase slightly, percent wrapper/binder yield tends to decrease at nitrogen rates of 200 lbs N/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 2 to 3 weeks after transplanting. Phosphorus should be applied according to soil test recommendations for burley or dark tobacco. Some Connecticut Broadleaf contracts recommend applying 200 to 225 lbs potassium per acre regardless of soil test recommendations, although we do not currently have data that compares this recommendation to a 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 should be between 6,000 and 6,400 plants per acre. This would be about 24 to 26-inch plant spacing on 40 to 42-inch rows. As more preventative pesticide applications are recommended for Connecticut Broadleaf, growers should consider leaving roadways or spray rows in the field to prevent 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 about 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 Coragen in transplant water applications for residual worm control. Ridomil Gold SL or Orondis/Ridomil Gold should be used in transplant water as preventative insurance against black shank and pythium but remember first and foremost 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, Assail, or Exirel can be used for prevention of flea beetles and worms, and preventative applications of Quadris fungicide, alternated with Manzate fungicide, should be used for prevention and early control of frogeye leafspot and target spot. Up to four applications of Quadris can be applied at 8 oz/acre per application, with Manzate applications (2 lb/acre per application) made between Quadris

applications. However, preharvest intervals may limit the number of applications that can be made. Quadris can be applied up to 21 days prior to harvest and Manzate can be applied up to 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). If blue mold threatens (is found within 100 miles), growers should also be prepared to apply other blue mold fungicides such as Revus. Although angular leafspot has not appeared to be as severe of a problem in Connecticut Broadleaf as it has been in dark tobacco in some areas, growers should be prepared to make preventative applications of streptomycin (1 lb per 100 gal water) ahead of damaging storms in areas where angular leafspot is a concern and make additional applications if angular leafspot appears.

Based on grower experiences in 2018 and research results in 2019, it seems that 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, it may be appropriate to consider a final Quadris application made near the 21-day preharvest interval. Again, confer with the buyer for more specific information or restrictions on the use of certain products. 2019 research results showed a strong response to Quadris application both in total yield and wrapper/binder percentage (Figure 3). 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, we are also looking at other factors such as humidity management during early curing stages that may also be associated with green speck in the cured leaf.

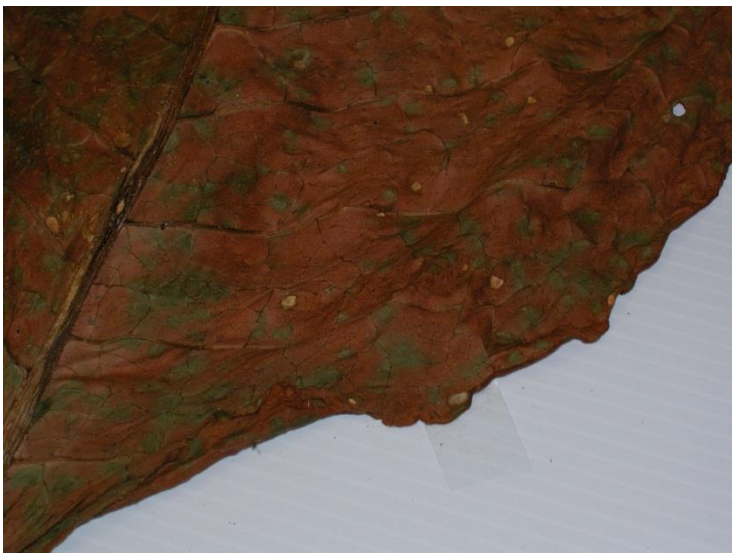

Figure 2. "Green speck" on cured leaf associated with late-season Frogeye leafspot infection.

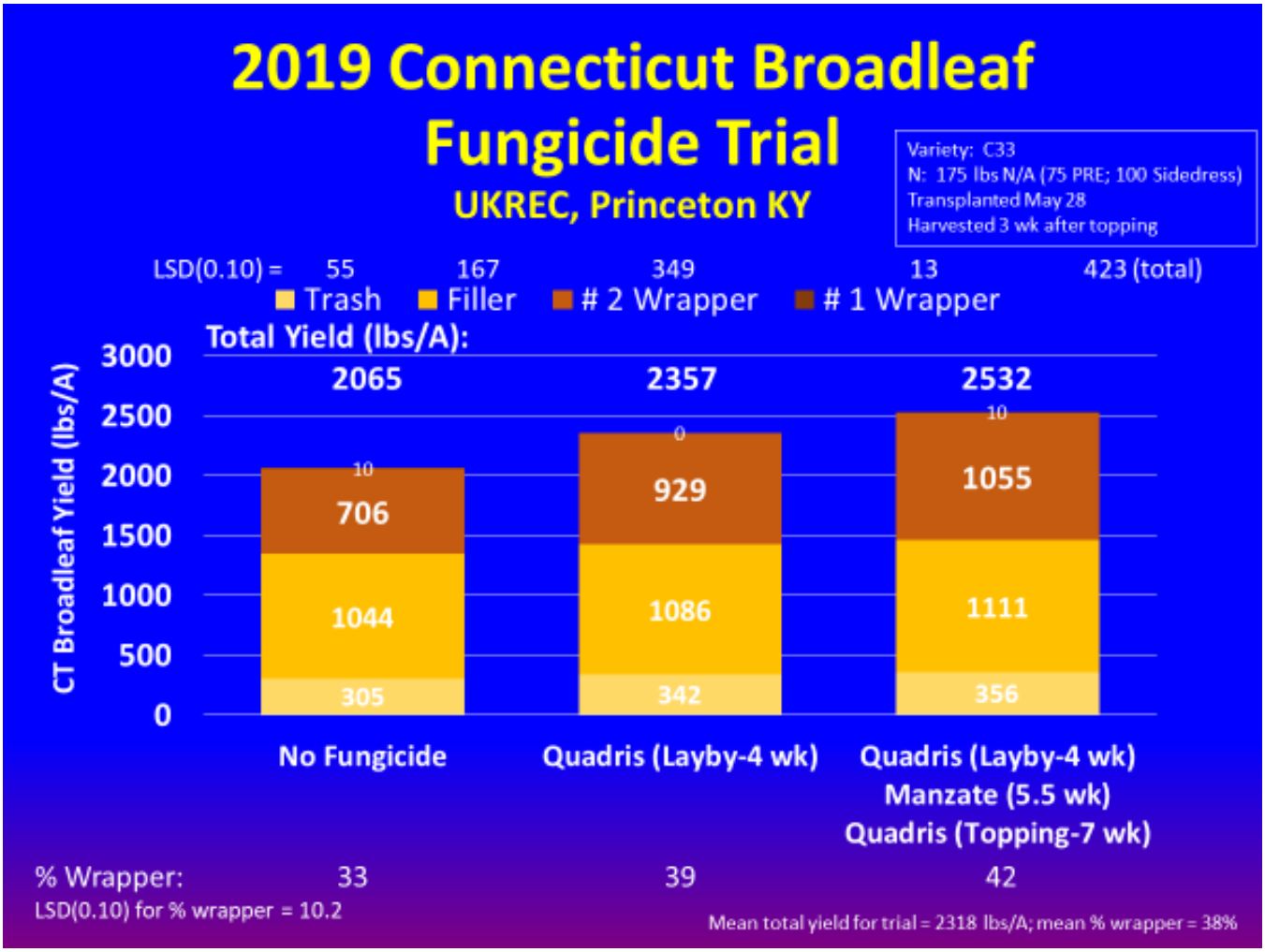

Figure 3. Yield and percent wrapper results of 2019 Connecticut Broadleaf fungicide trial.

Topping and Sucker Control

Connecticut Broadleaf is known to be a very fast-growing type of 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 droplines are recommended. 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 eight to ten-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 ounce of solution per plant to get good rundown on stalks,

and possibly even less with short plants of Connecticut Broadleaf topped down to 12-14 leaves. Remember to have adequate personal protective equipment (PPE) like gloves, eye protection, and even disposable coveralls available 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 on the immature side, no later than three weeks after topping. This type of tobacco will require field-wilting after cutting and before putting plants on sticks but 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, make sure stalks are cut at ground level to prevent stumps from poking holes in wrapper leaves that are laid down to field-wilt. Also, spike/spear plants onto sticks in the row middle instead of over the row to prevent dragging plants over stumps. Sticks should be loaded onto scaffold wagons immediately after spiking/spearing and not pushed up tight to prevent bruising and leaf breakage. For assistance with constructing scaffold wagons, see https://www.uky.edu/bae/content/tobacco-plans#wagons

Shade cloth can be used over scaffold wagons to prevent any further risk of sunburn after sticks are loaded. Loaded scaffold wagons should be pulled into a shaded area for additional wilting prior to housing/hanging in the barn. Sticks should be housed/hung in good air-curing barns that provide 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 rail spacing.

Curing

More barn management during curing will be required for Connecticut Broadleaf than for burley or dark air-cured tobacco. Take advantage of the 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 15 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%. For most of the cure in most curing seasons, barn doors and vents should be open most of the time during the day but consider closing doors and vents at night when humidity is high. If conditions turn 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 turn wet (>80% average daily relative humidity), consider using fans to move air, as long as the fans are not moving moist air through the tobacco.

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

Market Preparation

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 instructing growers to use a 'straight strip' sorting method to reduce time spent in sorting out wrapper leaves and non-wrapper leaves. With this method, growers will strip off and segregate the trash leaves at the bottom of the stalk, and then the leaves from the lower half of the stalk that are obvious filler leaves and not wrapper. Then strip all the leaves from the top half of the stalk if some have potential to be wrapper leaves and orient all of these upper stalk leaves in C48 cardboard boxes or some other marketing package the dealer supplies. At delivery, the dealer will collect samples from every third or fourth box that contains wrapper leaf and make a determination of the percent wrapper grades in the crop and set the price per pound accordingly, with higher prices for crops with higher percent wrapper leaves. Contact the dealer for specific questions on market preparation requirements.

Summary

Connecticut Broadleaf tobacco may be profitable for Kentucky and Tennessee growers that use good management. However, this is a new type that will require considerably more management, fungicide/insecticide applications, and labor than the traditional types grown in this area. We are still learning about the best production methods for Connecticut Broadleaf tobacco in Kentucky and Tennessee. Field research trials were conducted in 2019 and continue in 2020 to provide more information and more specific recommendations in the future. For tobacco growers considering Connecticut Broadleaf, it is advised to start small with no more than 1 or 2 acres as this is a high risk for a potentially high reward crop. Growers are advised to have good communication with their buying company for this type of tobacco and be sure to understand the terms of their contract. Buyers may have very specific preferences for the types of pesticides used.

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