

Topping, Sucker Control, and Harvest Management for Burley and Dark Tobacco

Andy Bailey, Gary Palmer, and Bob Pearce

Introduction

The emergence of the flower bud in a tobacco crop signals the first stage in the maturity of the crop. Flower buds must be removed and subsequent suckers controlled to allow the crop to reach its full yield and quality potential at harvest. Timely topping and sucker control practices also allow more efficient harvest when the crop reaches full maturity.

Topping

Topping is the removal of the flower bud along with some of the uppermost leaves in order to stimulate growth and development of upper leaves. Plants left untopped or topped late will exert more energy into flower and seed production rather than leaf production and substantial yield losses can occur. Topping removes the dominant influence of the terminal bud over lateral buds or “suckers,” stimulating vigorous sucker growth that must be controlled. Topping also stimulates root growth, which increases nicotine production in the roots and translocation to the leaves. Secondary plant products that accumulate in the leaves to improve quality and smoking characteristics also increase at topping. Topped tobacco is much less prone to being blown over since the plant is less top heavy and root growth is enhanced.

Early topping reduces the populations of insects such as aphids and budworms that are attracted to the terminal bud and flower. Early topping is also easier than later topping since stalk tissue is softer and much easier to break. Later topping takes more time, both in the removal of the flower and suckers that may have to be removed. Unless knives or clippers are used, tobacco topped late usually results in bruised, ragged stalks that are more susceptible to diseases like bacterial soft rot (hollow stalk).

Most important, tobacco should be topped at a stage and height that will maximize yield and quality and satisfy the preferences of the buyer.

Topping Burley Tobacco

Bloom Stage. Research has shown that topping burley tobacco at 10–25% bloom generally provides the best yield and quality. This means that 10–25% of the plants have one open flower. Bloom stage at topping may also depend on the length of time the tobacco will remain in the field before harvest. Yield of burley tobacco topped at 75% bloom may be similar or better than tobacco topped at 10–25% bloom if harvested at 3 weeks after topping, whereas tobacco topped to 10–25% bloom and harvested 6 weeks after topping may have improved yield but lower quality.

Late maturing varieties like TN 86LC and KT 200LC tend to respond well to bud topping while bud topping may reduce yields in other varieties. Specific varieties may need early topping to produce their best quality. Varieties like TN 86 tend to

produce flashy, poorer quality tobacco. Other varieties may also have a tendency to produce a lighter, thinner bodied tobacco. These varieties are more likely to develop better quality if topped early. Early topping will not affect yields if other factors such as harvest time after topping remain constant.

Leaf Number. Optimum leaf number for burley tobacco at topping is generally 22–24 leaves. Several marketing contracts now encourage that there be a true tip grade (T) and topping to this height allows the plant to produce a true tip. Yield effects of topping height are also dependent on timing of harvest. Tobacco topped to 24 leaves tends to yield slightly more than tobacco topped to 20 leaves. Too many extra leaves increases stripping labor and may increase the incidence of houseburn in old barns that have less space between tiers. Extra leaves beyond 24 leaves do not necessarily mean extra yield. Therefore, extra leaves usually mean smaller leaves. Root development dictates leaf production potential. Topping to the right number of leaves may require a slightly later topping time in order to produce tips. However, delays beyond 75% bloom will be counterproductive. A balance must be found between extra labor required to produce those leaves and the yield per acre and premium for tips at the market.

Topping Dark Tobacco

Bloom Stage. Dark tobacco can generally be topped anytime between the elongated bud stage and 50% bloom without causing a significant impact on yield. Dark tobacco crops can be more irregular than burley crops with wide variations in bloom stage at the time of topping. It is not uncommon for some plants to have open flowers while other plants are at the early bud or even pre-bud stage. For this reason, it may be advisable to make two toppings. Attempting to make one topping on irregular crops lowers the yield potential of smaller plants. Increased yield incurred by allowing smaller plants to catch up usually compensates for extra labor required in making two toppings.

Leaf Number. Dark tobacco should be topped to 16–18 leaves. Topping to this height maximizes yield potential and allows a distinct characterization of lug, second, and leaf grades that are desired by the industry. Lower topping to 12–14 leaves does make tobacco easier to handle on the stick during housing and may cure better in older barns with narrow tier spacing, but also results in mostly lug and leaf with little or no true seconds. Plants topped to 12–14 leaves do compensate somewhat by producing larger leaves, but yield is still reduced by 200 lb/A or more compared to tobacco topped to 16–18 leaves.

Sucker Control for Burley and Dark Tobacco

Many of the benefits in topping at the appropriate bloom stage and leaf number are lost if suckers are not controlled. Suckers grow vigorously immediately after topping and can

severely reduce yield and quality if not controlled effectively. Three types of chemicals are available for controlling sucker growth on tobacco:

- **Contacts**—these chemicals are not absorbed by plants and must have direct contact with suckers and leaf axils where they physically burn tender suckers.
- **Local systemics**—these chemicals must also have direct contact with leaf axils, but are absorbed into the plant at the leaf axil area and retard sucker growth by inhibiting cell division.
- **Systemics**—these chemicals do not have to come into direct contact with suckers and are absorbed by the plant and move to leaf axil areas where they retard sucker growth by inhibiting cell division.

In addition, some products (FST-7[®], Leven-38[®] and others) are mixtures of two of these chemical types. (See Table 1 and Figure 1.)

Contacts

Contact chemicals contain fatty alcohols as the active ingredient and form a milky-white emulsion when mixed with water at the proper dilution. Contact chemicals are available under many trade names such as Off Shoot T[®], Royal TacM[®], Fair 85[®], Sucker Plucker[®], and others. In University trials, all of these products have performed similarly when used under the same conditions. Fatty alcohols burn suckers shorter than 1 inch long on contact and sucker buds should turn brown or black within 1–2 hours after application. Fatty alcohols are rain fast at one hour after application and can be applied immediately before topping or within one day after topping. Contact chemicals will control suckers for 5–10 days. Any suckers longer than 1 inch will not be fully controlled and should be removed prior to applying fatty alcohols. Contacts should be applied so that the materials run down the stalk and come into direct contact with all leaf axils. Missed suckers are common with contacts applied to crooked or leaning tobacco, so it is a good practice to straighten crooked tobacco before application if possible. The proportion of fatty alcohol to water is critical to the effectiveness of these chemicals. If the concentration is too weak, suckers will not be controlled and if it is too strong, the suckers, leaves, and leaf axil will be burned and leaf loss could occur. A 3–5% solution is suggested on labels for burley tobacco and 4–5% solution for dark tobacco, with the lower concentration used in initial applications and the higher concentration used in follow-up applications. For

Table 1. Sucker control and sucker fresh weight data, 2006 regional burley sucker control trial, UKREC, Princeton, Ky.

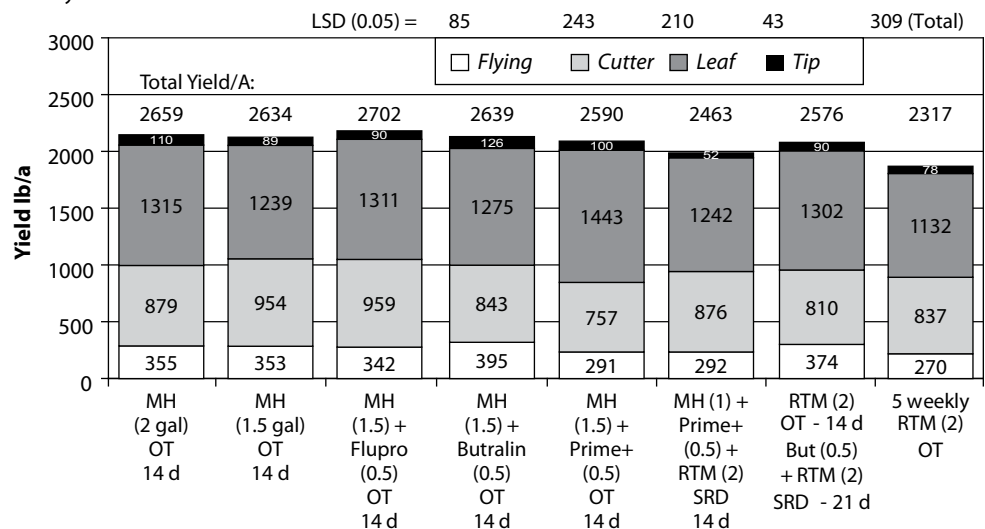
Treatment (gal/A)	% Sucker Control	Sucker Fresh Wt/A (lbs)
Royal MH-30 (2 gal/A)	95 a	781 d
Royal MH-30 (1.5 gal/A)	94 a	1010 d
Royal MH-30 (1.5) + Flupro (0.5)	93 a	1126 d
Royal MH-30 (1.5) + Butralin (0.5)	94 a	847 d
Royal MH-30 (1.5) + Prime+ (0.5)	91 a	1220 d
Royal MH-30 (1) + Butralin (0.5) + Royal TacM (2 gal)	84 b	2543 c
Royal TacM (2) OT fb	77 c	3938 d
Butralin (0.5) + Royal TacM (2) SRD		
Royal TacM (2) (5 weekly applications)	73 c	5446 a
LSD(0.05)	5.5	1185

powered spray equipment, use 1.5–2.5 gal of contact chemical in 50 gal of total spray solution per acre (3–5% solution). For stalk rundown applications with backpack or hand sprayers, a 3–5% solution is 12–19 oz of contact chemical per 3 gal of total spray solution. Use of agitation is recommended since the fatty alcohols are lighter than water and will float on the water in the spray tank. Fatty alcohols should be added to the spray tank while adding water to promote dispersal. Avoid using cold water when mixing as these products may not totally disperse.

Local Systemics

Butralin[®], Prime+[®], and Flupro[®] are the local systemic products currently available. Butralin and flumetralin (Prime+ and Flupro) are the active ingredients in these products. All three belong to a family of chemicals called dinitroanilines and have similar use recommendations. When properly mixed with water, Butralin makes an orange emulsion while Prime+ and Flupro make a yellow emulsion. Application of local systemics should be made similarly to contacts, so that the chemical runs down the stalk and contacts every leaf axil. Suckers longer than 1 inch should be removed prior to application. Local systemics do not burn suckers like contacts but rather stop sucker growth, with suckers remaining as a pale greenish-yellow tissue for several weeks after application depending on whether the

Figure 1. Burley yield from 2006 Regional Burley Sucker Control Trial, UKREC, Princeton, Ky. Burley variety was TN 90LC.



application was made to dark tobacco or burley. Applications of local systemics can be made with powered spray equipment or with backpack or hand sprayers. Local systemics generally require 3 hours without rain after application to be effective. The activity of local systemics in stopping cell division can also cause distortion of small, upper leaves that come into contact with the chemical. For this reason, applications of local systemics should be delayed until upper leaves are at least 8 inches long. If upper leaves are less than 8 inches long and manual stalk rundown applications are made, direct the spray below these smaller leaves. If a local systemic is being applied alone, a rate of 1 gal/A should be used (1 gal per 50 gal total spray solution or 8 oz [½ pint] per 3 gal spray solution). Local systemics, particularly those that contain flumetralin, are much more persistent in the soil than other sucker control chemicals and severe damage can occur to subsequent crops, particularly grasses. For this reason, care should be taken not to use excessive amounts of these products. If manual stalk rundown applications are made with droplines, backpack or hand sprayers, care should be taken to prevent pooling of the solution at the base of the stalk. Use only enough solution to wet the stalk and suckers on each plant. Reduced rates of local systemics can be used if tank mixed with contacts or systemic products. Use 3 qt local systemic per acre when tank mixing with contacts and 2 qt per acre when tank mixing with systemic sucker control products.

Systemics

Maleic hydrazide (MH) is the only true systemic product available for sucker control in tobacco. Since it is absorbed through the leaves and moves to actively growing sucker buds, it does not have to directly contact leaf axils to be effective. However, good soil moisture at the time of application is required to allow adequate absorption by leaves. Similar to other types of chemicals, MH does not control larger suckers and these should be removed prior to application. MH should be applied with power spray equipment, as plant-to-plant stalk rundown applications do not allow enough absorption into the plant to be effective. Absorption into the plant is also enhanced by using nozzles that produce coarse spray droplets as opposed to fine mist nozzles. Similar to local systemics, MH retards the growth of small upper leaves and plants should be topped to a leaf no smaller than 6 inches long before MH is applied. MH used alone can be applied at a rate of 1.5–2 gal per 50 gal of total spray solution per acre. MH is most effective if no rain occurs within 12 hours after application. If significant rainfall occurs within 3 hours after application, reapply at the full application rate. If rainfall occurs between 3 and 6 hours after application, reapply at one half of the full application rate on the following day. There is also an increased chance of leaf burning from MH if applied on bright, sunny days where the temperature is above 90°F. Optimum time to apply MH is on overcast or hazy days or in the morning after dew dries on hot, clear days. MH is more active in controlling sucker growth than other chemicals and the most effective sucker control programs include an MH application. However, there has been some concern in the industry about the harmful effects of excessive MH residue on cured leaf and major efforts have been made to reduce or even

eliminate MH residues on burley tobacco. An effective way to reduce MH residues without compromising sucker control is to use the lower 1.5 gal/A rate of MH in combination with 2 qt per acre of a local systemic applied with coarse nozzles. This combination spray controls suckers as well as the full 2 gal/A MH rate and reduces MH residues.

FST-7 and Leven-38

FST-7 and Leven-38 are prepackaged mixtures of MH and the contact n-decanol. Since both contain less MH (0.66 lb/gal) than that in other MH products, the application rate is 3 gal/A. They should be applied as a coarse spray with powered spray equipment at a spray volume of 50 gal/A to cover the top third to half of the plant, allowing the solution to run down the stalk to the bottom of each plant. Since the active ingredients in both products tend to separate in the container, make sure the container is well mixed and shaken before adding to the spray tank. Constant agitation in the spray tank should be used with FST-7, Leven-38, and all other sucker control products.

Application Methods for Sucker Control Chemicals

Four methods of application are currently being used to apply sucker control products to tobacco: power spray equipment, drop lines, backpack or hand sprayers, and jugs.

Powered Spray Equipment for High Clearance Over-the-top Application

Use of powered spray equipment is the most labor efficient method of applying sucker control products, as this method typically requires only one person and many acres can be covered in a day. Any type of sucker control product can be applied through power spray equipment, although adequate coverage to achieve the best control generally requires high volume spray output and straight, uniform tobacco. Coverage is the key to success with any sucker control application. Thorough coverage of all leaf axils requires a minimum of 50 gal/A spray volume and coverage may improve on many crops as spray volume is increased to 60 or 70 gal/A. Pressure should be 20–30 psi.

Nozzle Arrangement

Broadcast applications and applications directed to the tobacco row are two types of nozzle arrangements that can be used. Broadcast or “straight boom” arrangements using 20 inch nozzle spacing provide even coverage over the row and the row middle. Applications directed to the tobacco row involve multiple (3 or more) nozzles per row. This method usually involves a nozzle placed directly over the row and two nozzles placed on either side of the row and directed at a slight angle into the row. Broadcast applications usually provide the best coverage if tobacco is leaning or if row spacing is inconsistent, while directed applications may be preferred if tobacco is straight and row spacing is consistent. Even a slight misalignment of nozzles over each tobacco row with the directed method can result in poor sucker control on those plants. Spraying only 2 or 4 rows at a time instead of using the entire boom can improve alignment with the tobacco.

Nozzle Selection

Nozzles that allow high output and produce coarse spray droplets are preferred for all applications. Coarse droplets tend to penetrate through leaves and reach all leaf axils down the stalk better than fine droplets. Nozzles such as TG-3, TG-4, TG-5, and TG-6 or their equivalents are commonly used with powered spray equipment for over-the-top applications. The 3-nozzle arrangement used for directed applications may be a TG-5 over the row and TG-3's on each side directed toward the row. Other combinations may also be effective. Broadcast applications can be made with all TG-3's or all TG-5's. Use TG-3's for more hilly terrain where traveling speeds are in the 2½–3½ mph range. For flatter ground where speed can be increased to 4–5 mph, use TG-5's or equivalent.

Dropline Applications

Dropline applications involve a high-clearance sprayer with hoses for each row attached to the boom with a spray trigger and coarse nozzle attached to the end of each hose that can be operated by a worker walking behind the sprayer. Droplines are used with plant-to-plant stalk rundown applications of contacts and local systemics. This method provides more direct sucker contact and generally provides better control than over-the-top applications, but is labor intensive and requires a slower pace to accommodate workers. The speed of the sprayer can only be as fast as the slowest worker. Practice may be required for workers to become accustomed to the appropriate rate of application, particularly on crooked tobacco that may require directing the application to several areas on the stalk. On tall tobacco, missed suckers can be common in the top of the plant, but misses are less common than in other methods. 0.5–0.75 oz of spray solution should be applied to each plant, with care taken to avoid applying excessive amounts that will pool on the ground at the bottom of the plant. Product rates per acre are the same for any application method, although volume of spray solution required for dropline applications will be 20–40 gal/A, significantly less than volume used in over-the-top applications. Droplines work well for local systemic applications to plants with upper leaves smaller than 6–8 inches since the applicator can direct the spray below these smaller upper leaves. Where applications are directed below small upper leaves, a second sucker control application should be made to those plants within 7 days to cover leaf axils of upper leaves. Although slow and labor intensive, dropline methods are very effective in sucker control programs that do not include MH. Personal protective equipment (PPE) must be employed when using this application method. Refer to Appendix 2 (Pest Management section) for more information.

Backpack and Hand Sprayer Applications

Backpack and hand sprayer applications are similar to dropline application methods in that each worker applies 0.5–0.75 oz of spray solution to the top of each plant to run down the stalk. The backpack or hand sprayer consists of a small, 2–3 gal spray tank and a wand attachment that can be fitted with a coarse spray nozzle. This method may have an advantage over the dropline method in that each worker is independent of others and speed is not dictated by the slow-

est worker. Small acreage growers using plant-to-plant stalk rundown applications prefer this method. Refer to Appendix 2 in the Pest Management section for PPE requirements.

Jug Applications

Jug applications involve adding the chemical to a gallon jug with water and pouring 0.5–0.75 oz of solution down the stalk of each plant. One gallon of spray solution should treat 170–256 plants. Although the jug method is the simplest of all methods, it is more difficult to apply consistent amounts to each plant. Some small acreage growers may still prefer the jug method. Refer to Appendix 2 in the Pest Management section for PPE requirements.

Sucker Control Strategies for Burley Tobacco

Uniform Crops

For most crops that are uniform and can be topped one time, use 1.5 gal/A MH with 2 qt/A of Prime+, Butralin, or Flupro as an over-the-top application with power spray equipment. Top tobacco at 10–25% bloom and remove all suckers longer than 1 inch. Spray applications can be made within 1 day before or after topping. If upper leaves will be less than 8 inches long at topping, apply a contact at topping and then follow with 1.5 gal/A MH plus 2 qt/A local systemic 7 days later.

Uneven Crops

The most common cause of sucker escapes is a delay in topping until suckers have reached a size that is difficult to control. Tobacco topped later than 50% bloom can have suckers that are more than 1 inch long. These suckers will escape control if not removed by hand at topping, and a second application to these suckers will also result in poor control. This situation commonly occurs in uneven crops. One solution is to make 2 topplings. However, the best solution may depend on the degree of unevenness. Three strategies for uneven crops are:

If the crop is not drastically uneven, the best approach may be to top all plants leaving a small leaf (approximately 6–8") at the top of plants that have not bloomed. Treat the entire crop with 1.5 gal/A of MH (regular concentrate) and 0.5 gal/A of Prime+ or Butralin. Use coarse nozzles only. To reduce labor, some producers may elect to top only those plants with a bud or bloom and spray the entire crop with the combination above allowing the spray material to chemically top those plants in the pre-bud stage.

In uneven crops that will require 2 topplings at 7 days apart, top plants that reach the elongated bud to early flower stage and apply a contact over-the-top to the entire field using power spray equipment. Apply 1.5 gal/A MH plus 2 qt/A local systemic after the second and final topping.

In extremely uneven crops that will require more than 2 topplings or 2 topplings more than 7 days apart, top plants that are ready and apply contacts every 5–7 days or at each topping using power spray equipment over-the-top, or apply a local systemic as a plant-to-plant stalk rundown application only to topped plants at each topping. Prime+ is the local systemic of choice in this situation as it generally provides longer control than other local systemics. If a local systemic is used, do not

retreat plants that have already been treated at a previous topping. At the final topping, apply 1.5 gal/A MH over-the-top using power spray equipment.

MH-free Burley Tobacco

Certain buying companies have offered price incentives for burley tobacco that has not received MH. Although burley tobacco can be grown without MH, labor requirements may be greater and sucker control may be reduced in programs that do not include MH. If sucker control is adequate, some improvement in yield and cured leaf color can be seen in MH-free crops. Crops that have not received MH may also stay in the field longer before harvest. Alternative management and application techniques may need to be employed with MH-free tobacco. The most consistent method for producing MH-free tobacco is to use contacts and local systemics in plant-to-plant stalk rundown applications with droplines or backpack/hand sprayers. As discussed previously, this requires much more labor and time and multiple applications are usually needed. Good yields and sucker control can be achieved in MH-free tobacco using over-the-top applications from power spray equipment, but achieving adequate coverage on all leaf axils can be difficult. For the best chances of success, use multiple contact applications (at least 2) every 7 days beginning at topping followed by a single local systemic application at 1 gal/A either alone or preferably tank-mixed with a contact.

Sucker Control Strategies for Dark Tobacco

Although sucker control strategies for dark tobacco are similar to those in burley, achieving effective sucker control is usually more difficult in dark tobacco. Sucker growth after topping is generally more vigorous than in burley and ground suckers are more common. Dark tobacco is much more prone to blowing over and becoming crooked than burley. Also, dark tobacco typically stays in the field for a longer period between topping and harvest, requiring extended sucker control. The prostrate structure and leaf arrangement of dark tobacco is also not as conducive to achieving good coverage on all leaf axils. Some buyers of dark tobacco have also discouraged the use of MH in the past, except in situations of blow over where stalk rundown is nearly impossible. MH used at topping or at high rates can cause severe upper leaf discoloration and distortion. For these reasons, plant-to-plant stalk rundown applications of contacts and local systemics with droplines or backpack/handsprayers are much more common in dark tobacco. As discussed previously, dark tobacco crops are rarely uniform enough to allow one topping over the entire field.

Plant-to-plant Stalk Rundown Applications

A typical sucker control strategy for dark tobacco is to top plants that are ready (elongated bud to early bloom) and apply a contact at 4% solution (2 gal per 50 gal total solution) to the entire field as a plant-to-plant stalk rundown application. Top the rest of the crop within 7 days if possible and apply either a tank-mix of a contact at 4% solution with a local systemic at 3 qt per 50 gal, or a local systemic alone at 1 gal per 50 gal. The contact/local systemic tank-mix allows a slightly lower rate of the local systemic to be used. Although any local systemic can

be used, Prime+ gives slightly longer sucker control than other local systemics. If more than 2 toppings are required, apply a contact every 7 days and follow with a local systemic or contact/local systemic tank-mix application at the final topping. If a local systemic is applied to plants that have not been topped or have upper leaves less than 6 inches long, direct the application below these smaller leaves. Another strategy is to apply a local systemic or contact/local systemic tank-mix at each topping. With this strategy, only treat plants that have just been topped and do not retreat plants at later toppings.

Over-the-top Applications with Power Spray Equipment

Although plant-to-plant stalk rundown applications are more common in dark tobacco, success can be achieved with over-the-top applications. Coverage on all leaf axils will be more difficult on dark tobacco, and higher spray volumes can improve coverage. Spray volumes of 60–70 gal per acre are recommended for contact and local systemic applications. Dark tobacco that is straight is rare, and crooked tobacco is usually the cause of missed suckers with over-the-top or plant-to-plant applications. If tobacco leans due to wind, try to straighten the tobacco before it grows crooked if possible, as this will improve coverage in over-the-top applications. If tobacco is relatively straight, directed applications with 3 nozzles per row will provide better coverage than broadcast, straight boom applications on dark tobacco. A good strategy for over-the-top applications is to apply a contact at 4% solution at the first topping and again 7 days later. Follow with a local systemic at 1 gal/A or contact/local systemic tank-mix as described previously. Since more suckers will escape control with over-the-top applications to dark tobacco, including an MH application is recommended.

Use of MH in Dark Tobacco

Although MH use in dark tobacco has been discouraged in the past, buying companies have become more lenient on its use in recent years. The key to avoiding discoloration and distortion of upper leaves is to not apply MH at topping. Allow at least 7 days after the final topping before applying MH. Application rate is also important. Five to 6 qt (1.25–1.5 gal) per acre is recommended. Rates lower than 5 qt/A will provide marginal sucker control and rates higher than 6 qt/A may cause upper leaf discoloration, even when applied at 7 days after topping. Recommended MH programs for over-the-top applications to dark tobacco are to apply a contact at the first topping and every 7 days through the last topping. Seven days after the final topping, apply 5–6 qt/A MH alone or tank mixed with 2 qt/A of a local systemic. If one topping can be made, apply a contact and follow with MH or MH/local systemic tank mix 7 days later. Be sure to top down to at least a 6-inch leaf.

Harvest Management for Burley and Dark Tobacco

One of the most important management decisions in producing high quality burley or dark tobacco is deciding when to cut. Maturity of the crop should be the primary consideration, although weather conditions and the availability of labor are also influential factors. Tobacco cut at maturity but not allowed to become overripe will be easier to cure and have better cured leaf quality than immature or over-mature tobacco.

Burley Tobacco

Burley tobacco should be allowed to ripen until nearly all of the upper leaves show a distinct yellow color. Stalks and main leaf stems will lose much of their original greenish color and take on a cream-to-white appearance. This usually occurs between 3 and 5 weeks after topping, depending on variety and environmental conditions. Many growers hesitate to allow upper leaves to ripen for fear of losing lower leaves. However, added growth of upper leaves usually more than compensates for any loss of lower leaves. Harvesting at 6 weeks after topping usually does not increase yield and may decrease leaf quality.

If possible, try to schedule burley harvest when at least a few days of fair weather are expected. Burley tobacco can be cut and put on sticks (“speared” or “spiked”) in the same operation. Do not put more than six plants on a stick unless plants are extremely small. Tobacco can then be left on the standing stick in the field to wilt before being picked up for housing. Tobacco that is adequately field wilted will be lighter and easier to handle and house (up to 20% less fresh weight), and will incur less leaf loss and bruising. Tobacco that sunburns or has light frost damage may require a few (3-4) days of sunlight to remove chlorophyll staining. It is especially important not to let harvested tobacco get excessively wet and muddy in the field and it should not be left standing in the field longer than 4 days, even if weather conditions are good.

Burley tobacco can be loaded onto flat bed wagons or scaffold wagons for transport from the field. Flat bed wagons can be used if tobacco will be housed immediately. Tobacco loaded onto scaffold wagons can remain on the wagon for additional wilting prior to housing if needed. While loading, tobacco can be regulated on sticks so that plants are spaced equally apart and leaves hang straight down the stalk. Some producers prefer to regulate tobacco when housing.

Good housing practices are essential for high quality cured tobacco. Good cured leaf can be obtained in conventional curing barns or in outdoor curing structures if proper management is used. In conventional curing barns, all available space should be uniformly filled as air does not circulate well through tobacco in partially filled barns. Sticks should be spaced at least 7-8 inches apart on the tier rail in conventional barns to allow air movement between sticks. Insure that plants are spaced equally on sticks and leaves are shaken out to hang down the stalk if this was not done at loading in the field. Fill each bent in the barn completely from top to bottom. If possible, fill the entire barn in the same time period as greener tobacco does not cure as well when hung with partially cured tobacco. Tip leaves should hang between sticks of lower tiers and not overlap.

Burley tobacco can usually be hung at higher densities in open-sided, low-profile outdoor curing structures without increased risks of houseburn or barn rot. Burley tobacco hung on these structures should have a stick spacing of 4–6 inches. Since natural airflow is greater in these structures than in conventional barns, closer stick spacing helps to prevent the tobacco from drying too fast and setting undesirable colors in the cured leaf.

Dark Tobacco

Similar to burley tobacco, dark tobacco that is allowed to ripen before harvest will cure much more easily and with a better color. Dark tobacco does not show distinctive yellowness in the field at maturity like burley and is therefore more difficult to estimate ripeness. Dark tobacco is ready for harvest when leaves begin to show a very faint yellow cast. At this stage, the upper leaves will be thick and oily and will crack readily when doubled between the fingers. Depending on variety and environmental conditions, this usually occurs between 5 and 7 weeks after topping. An exception is TN D950, an early-maturing variety that is typically ready for harvest between 4 and 5 weeks after topping.

Dark tobacco that is ripe when harvested will have brittle leaves that will break and bruise easily. For this reason, dark tobacco should not be cut and put on sticks in the same operation as is typically done in burley. Due to its more prostrate leaf structure, dark tobacco should be carefully cut, with caution being taken not to break lower leaves, and allowed to wilt in place or “fall” before being put on sticks. Depending on temperature and sunlight intensity, this wilting period may take anywhere from 30 minutes to several hours. Tobacco cut late in the day can be left to wilt overnight if there is no chance of rain that will leave the tobacco excessively wet or muddy. Once tobacco is flexible enough to be put on sticks, it should be spiked and picked up as soon as possible. Dark tobacco is very susceptible to sunburn. Caution should be taken to not cut more tobacco than can be spiked and loaded in a day. Many growers may pile the tobacco after initial wilting in groups of six plants to make spiking easier and temporarily reduce the risk of sunburn. No more than six plants should be put on a stick, and five plants per stick works better for large tobacco. Whether the tobacco is spiked from piles or directly from the ground, it should not be allowed to stay in the field for more than a few hours before being picked up and loaded. When loading, space plants equally on sticks and shake leaves so that they hang straight down the stalk.

Scaffold wagons are the preferred means of loading and transporting dark tobacco. Scaffolded tobacco is less likely to sunburn and can remain on the wagons for several days of additional wilting before housing if wagons are placed in shade or are covered with shade cloth.

Dark tobacco housed in newer barns with wider tier spacing should have a stick spacing of at least 8–9 inches. In older barns with narrow tier spacing, place sticks at least 12 inches apart. Narrow tier spacing in older barns may only accommodate tobacco topped to 12 or 14 leaves, whereas wider tier spacing in newer barns will accommodate tobacco topped to the current market standard of 16–18 leaves. Use alternating placement on tier rails so that tobacco does not overlap tobacco on lower tiers, or only hang tobacco on every other tier if barns space allows.

For dark fire-cured and dark air-cured tobacco, fill the entire barn in the same time period as tobacco will not cure as well when housed at different stages. Fill each bent of the barn from top to bottom, ensuring that plants are spaced evenly on sticks and leaves hang straight down the stalk. Due to increased risk of weather damage, the use of outdoor curing structures for dark air-cured tobacco is not currently recommended.