

Dark Tobacco Sucker Control

Andy Bailey, Department of Plant and Soil Sciences

The emergence of the flower bud in a tobacco plant signals the beginning of maturity in the crop. Timely topping, or removal of the flower bud, is an essential practice to direct the plant's energy toward vegetative leaf production and away from reproductive flower and seed production.

Removal of the terminal flower bud breaks apical dominance and results in immediate chemical and hormonal changes in the plant that induce vigorous growth of lateral shoots or suckers at leaf axils. Failure to adequately control suckers in dark tobacco can result in yield losses of 250 to 1,000 pounds per acre, additional labor requirements at harvest, and poor curing in the barn.



Topping Dark Tobacco

Timely topping is an important part of an effective sucker control program. Dark air-cured and dark fire-cured tobacco should be topped to a minimum of 16 leaves, and the timing of topping should be between the elongated bud stage and 50% bloom (50% of the plants in the field have at least one open flower). Dark tobacco crops exceeding 50% bloom will have suckers longer than 2 inches on many upper leaf axils at the time of topping, which will require hand removal and may lessen the effectiveness of chemical sucker control applications. Topping the entire crop at the same time is ideal, but uneven growth of dark tobacco usually necessitates at least two toppings.

Types of Sucker Control Chemicals

Contacts are not absorbed by plants and must have direct contact with suckers and leaf axils where they physically burn tender sucker growth. Fatty alcohols are the active ingredients in contact sucker control products. Suckers should be no more than 1 inch long at application of contacts for effective control. There are many contact sucker control products available.

Local systemics must also have direct contact with leaf axils but are absorbed into the plant at the leaf axil area. They retard sucker growth by inhibiting cell division. Butralin or flumetralin is the active ingredient in local systemic products. Butralin®, Prime+®, and Flupro® are the local systemic products currently available.

Systemics do not have to come into direct contact with suckers. They are absorbed by the plant and move to leaf axil areas where they retard sucker growth by inhibiting cell division. Maleic hydrazide

(MH) is the only systemic sucker control chemical currently available. There are several products that contain MH as an active ingredient.

UK Extension

This is a joint publication of the Cooperative Extension Services of the University of Kentucky and the University of Tennessee.

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. Unevenness, blow-over, and crooked stalks are also much more common in dark tobacco than in burley. The short, spreading structure and leaf arrangement of dark tobacco is also not as conducive to achieving good coverage on all leaf axils when making over-the-top applications with power spray equipment. An extended period of sucker control is also required, as dark tobacco remains in the field longer than burley after topping.

Manual Stalk Rundown Applications with Droplines, Backpacks, or Hand Sprayers

Manual stalk rundown applications put the chemical in direct contact with leaf axils and sucker buds and generally result in better sucker control than with over-the-top applications with power spray equipment. However, manual methods are labor intensive and require a much slower pace to accommodate workers. Three-fourths of an ounce of spray solution per plant will be enough to run down the entire length of the stalk, even on taller plants topped high. Applying more than this amount of local systemic will result in pooling of the material at the base of the stalk and potential damage to cover crops. 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.

A typical sucker control strategy used with manual applications in 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. 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 0.75 (3 qt) to 1 gal per 50 gal, or a local systemic alone at 1 gal per 50 gal. Field research with stalk rundown applications has shown that if a contact/local systemic tank-mix is used, the reduced rate of 3 qt/A local systemic will be as effective as the full 1 gal/A rate of the local systemic alone. The contact fatty alcohol will burn small suckers on contact and also appears to aid in the movement of the local systemic down the stalk. Although any local systemic can be used, Prime+ gives slightly longer sucker control than other local systemics. If more than two toppings are required, apply a contact every 7 days at 4% solution in the first application and 5% solution in later applications, and follow with a local systemic or contact/local systemic tank-mix application at the final topping. Another strategy is to apply a local systemic or contact/local systemic tank-mix at each topping. With this strategy, treat only plants that have just been topped, and do not re-treat plants at later toppings.

Over-the-Top Applications with Power Spray Equipment

Although manual 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 55 to 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 applications or manual rundown applications. If tobacco leans due to wind, try to straighten the tobacco quickly if possible before it becomes crooked, as this will improve coverage in over-the-top applications. If tobacco is relatively straight, use directed applications with three nozzles per row as this will provide better coverage than broadcast, straight boom applications on dark tobacco. With the directed 3-nozzle-per-row system, coarse nozzles are used with a larger nozzle such as a TG-5 or equivalent placed directly over the row, and smaller nozzles such as TG-3s or equivalent placed on short drops 15 to 20 inches on either side of the center nozzle and directed slightly toward the plants.

A good strategy for over-the-top applications is to apply a contact at 4% solution at the first topping and again at 5% solution 7 days later. Follow with a local systemic at 1 gal per acre or contact/local systemic tank-mix (4% contact and 1 gal/A local systemic). Since more suckers will typically escape control with over-the-top applications to dark tobacco, including an MH

application is recommended. If you do not plan to use MH, manual stalk rundown applications are recommended. The addition of MH is strongly recommended in crops with a high degree of crooked stalks.

Using 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 to 1.5 gal) per acre is recommended. Rates lower than 5 qt per acre will provide marginal sucker control, and rates higher than 6 qt per acre may cause some upper leaf discoloration.

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 to 6 qt per acre MH alone or tank-mixed with 2 qt per acre 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 before applying MH. Use coarse spray nozzles and spray volume of 50 gal per acre. Dry conditions will lessen the effectiveness of MH applications. Morning applications are usually most effective, and applications in the heat of the day should be avoided. If rainfall occurs within 6 hours of application, reapply at the full rate used. If rainfall occurs within 12 hours of application, reapply at half the rate used.

Basic Points

- Remove all suckers longer than 1 inch by hand at topping, as no sucker control product will control suckers longer than 1.5 to 2 inches.
- Use a sucker control strategy that does not inhibit upper leaf expansion, cause discoloration, or otherwise damage leaves.
- Always read and follow label directions for sucker control products. Absence of residues of products not registered for tobacco, or excessive residues of registered products, is an important quality concern for dark tobacco buyers.

Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement and does not imply approval to the exclusion of other suitable products or firms.