

Weed Management in Tobacco¹

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Weed control is an important production practice in tobacco since weed competition for moisture and nutrients may result in yield losses. In addition to reduced yields, weeds may also be a serious source of foreign material in mechanically harvested tobacco. Good weed control in tobacco is best achieved by utilizing all available methods of weed control in an integrated program.

Sanitation

Many of the problem weeds in tobacco are the result of seed produced in the field during the preceding crops or seed blown into the field or onto plantbeds from adjacent areas such as fence rows or ditch banks. Preventing weeds from producing seed in these areas may aid in reducing weed problems in succeeding tobacco crops. Destroying weeds around the plantbed area as well as utilizing natural or artificial windbreaks will reduce weed problems. Remember that fumigation leaves no residual for weed control. Thus, do not recontaminate fumigated beds with weed-infested soil that may adhere to shoes or equipment. Also, weeds that grow in fence rows and surrounding areas may harbor aphids, thrips, or other insects and viruses that may attack tobacco.

Crop Rotation

The benefits of crop rotation on reduction of diseases, insects, and nematodes have been well documented. In addition, crop rotation may also be important for reducing weed problems. Many weeds, especially the large seeded broadleaf weeds such as sicklepod, cocklebur, and Florida beggarweed, can be more effectively controlled in other crops such as corn or sorghum. Controlling these weeds in a rotational crop reduces the weed seed available for germination in the tobacco crop.

Residues of some herbicides used in preceding crops are a potential problem, as tobacco is highly sensitive, and this potential should be considered when choosing the herbicide. Label restrictions on rotational crops should be followed.

Weeds may be hosts for certain insects, diseases, and nematodes and weeds which are allowed to grow in the field prior to tobacco may result in increased pest problems.

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Cultivation

Cultivation and occasional hand-hoeing have, and continue to be, an important part of a tobacco weed control program. Currently, there are several weeds in tobacco which can be effectively controlled only by this method. In addition, proper cultivation may aid in better drainage and protection from flooding, a better root system and less lodging, and more efficient mechanical harvesting.

Chemical Control

The use of herbicides in tobacco has become widely accepted by growers and offers several important benefits which supplement other components of the weed management program.

Good early-season weed control with herbicides can be extremely important in reducing competition and allowing the rapid establishment of tobacco, resulting in more effective cultivation. Labor requirements for hand-hoeing and cultivation can be reduced by proper use of herbicides. Herbicides may supply some insurance against fields becoming weedy during wet periods following transplanting. All weeds do not respond the same to all herbicides; therefore, the weeds expected in the field should be known when planning a weed control program. The next step is to select the herbicide or combination of herbicides which are most effective on the anticipated weeds (Table 2). After selecting the herbicide program needed, refer to Table 1 for proper rates, time of application and application procedures. Table 1 and Table 2 are based on current available research from IFAS and other southeastern states; however, for more detailed information on the use of each herbicide, **read the label.**

Table 1. Weed management in tobacco.

Trade Name and Broadcast Rate/Acre of Commercial Product	Common Name and Broadcast Rate/Acre of Active Ingredient	Remarks
TOBACCO PLANT BEDS		
Methyl bromide + Chloropicrin (several brands and formulations)	methyl bromide + chloropicrin rate depends on formulation	Treat when the soil is moist and when temperatures are above 55°F. Inject 6-8" deep with chisels spread 10-12" apart or release with applicator under plastic film. Leave for 48 hours, then remove cover and aerate for 48-72 hours (2 weeks for 75:25 methyl bromide: chloropicrin). Controls most weeds except some hardseeded legumes. Also controls nematodes and soilborne insects and diseases.
Poast (1.0 pt) + Crop Oil Conc. (2.0 pt)	sethoxydim (0.188 lb)	Poast may be applied to plant beds only with ground equipment for the control of emerged annual grasses. Volume should be 5-20 GPA and a crop oil concentrate should be added at a rate of 2 pt/A. Do not cover beds until spray material has dried. See label for further precautions.
TOBACCO FIELDS PREPLANT		
Prowl 3.3EC (1.8 - 2.4 pt)	pendimethalin (0.75 - 1.0 lb)	Apply and incorporate to a depth of 2 to 3". If applying before bedding, incorporate with a power-driven tiller set to operate 2-3" deep or with a disk harrow set to cut 4-6" deep. If a disk is used, a second disking at a right angle will improve results. If applying after beds are formed, incorporate with a power-driven tiller to a depth of 2-3".
Command 3ME (2.0 - 2.7 pt)	clomazone (0.75 - 1.0 lb)	Apply in a minimum of 20 gal of water per acre up to 30 days before transplanting. May assist with grass and small-seeded broadleaf control. May be mixed with other PPI tobacco herbicides. Consult label to avoid off target drift problems. May also be applied immediately after transplanting up to 7 days after transplanting, but prior to weed emergence.
Devrinol 2E (2 - 4 qt) or Devrinol 50DF (2.4 lb)	napropamide ¹ (1.0 - 2.0 lb)	Use lower rates on sandy soils or when tank-mixing with Tillam. A greater range of weed control will be obtained by tank-mixing Devrinol with Tillam than using Devrinol alone.
POST-TRANSPLANT		
Devrinol 50DF (2.0 - 4.0 lb)	napropamide ² (1.0 - 2.0 lb)	Apply over top of transplants. If application delayed several days after transplanting, tillage will be needed to destroy previously germinated weeds. If rainfall is not received within 3-4 days, apply 1/2" of irrigation water to move the herbicide into the zone of weed seed germination.
Command 3ME (2.0 - 2.7 pt)	Clomazone (0.75 - 1.0 lb)	Apply in a minimum of 20 gal of water per acre, immediately or up to 7 days after transplanting, but prior to weed emergence. If weeds have emerged, cultivate shortly before or at the time of treatment. Do not apply post-transplant if a preplant application was made.

Table 1. Weed management in tobacco.

Trade Name and Broadcast Rate/Acre of Commercial Product	Common Name and Broadcast Rate/Acre of Active Ingredient	Remarks
Poast (1.5 pt) + Crop Oil Conc. (2.0 pt)	sethoxydim (0.282 lb)	Poast may be applied 3 weeks after transplanting and until 7 weeks after transplanting with ground equipment for the control of emerged annual grasses. Volume should be 5-20 GPA and a crop oil concentrate should be added at a rate of 2 pt/A.
LAY-BY		
Prowl 3.3 EC (1.2 - 1.8 pt)	pendimethalin (0.5 - .75 lb)	Apply with drop nozzles to the row middles following the lay-by cultivation. If rainfall is not received within 3 to 4 days, apply 1/2" of irrigation water to move the herbicide into the zone of weed seed germination. Do not spray in the bud of tobacco plants. Do not plant any root crop for 12 months after application.
Devrinol 50DF (2.0 - 4.0 lb)	napropamide ² (1.0 - 2.0 lb)	Similar remarks as for Prowl lay-by above.
POST DIRECTED AFTER FIRST HARVEST		
Aim EC (2 lb ai/gal) 0.8 - 1.5 fl oz	carfentrazone (0.013 - 0.023 lb ai)	<p>Aim EC may be applied with drop nozzles or other spray equipment capable of directing the spray to the target weeds and away from sensitive plant parts. Aim EC may be applied up to the maximum rate for the target crop for the control of larger weed sizes or weeds not controlled with lower use rates.</p> <p>Directed spray after first priming (Flue-Cured Tobacco Only) Aim EC may be applied as a directed spray application after the first priming in only flue cured tobacco only for the control of emerged and actively growing broadleaf weeds. Directed spray equipment should position nozzles a minimum of 3 to 4 inches above the soil, with nozzles directed underneath the crop canopy. Spray solution should be directed at the base of tobacco plants for minimal contact with foliage while maintaining maximum contact with broadleaf weeds that are at appropriate treatment size. Do not apply when conditions favor drift or wind is above 10 mph.</p> <p>Use Aim EC for postemergence control of many broadleaf weeds (including most morningglory species other than small flower) up to 4 inches high growing in between the rows of tobacco. Use higher rates when treating more mature weeds or dense vegetative growth. COVERAGE IS ESSENTIAL FOR GOOD CONTROL. Use adequate spray volume to achieve thorough coverage.</p>
<p>¹ See labels for tank-mixes with other pesticides or fertilizers.</p> <p>² The following crops may be injured if planted within 12 months of Devrinol or Tillam + Devrinol application; alfalfa, small grains, sorghum, corn, lettuce, sugarbeets. The total napropamide applied in a season should not exceed 2 lb active ingredient per acre.</p>		

Table 2. Estimated effectiveness of herbicides on common weeds in Florida tobacco¹.

WEEDS	Herbicides				
	Prowl	Command	Devrinol	Poast	Prowl
Time of Application	PPI	PPI or PT	PT or LB	POST	LB
ANNUAL GRASSES					
Crabgrass	E	E	E	E	E
Goosegrass	E	E	E	E	E
Sandbur	E	E	G-E	E	E
Crowfootgrass	E	E	E	E	E
Texas panicum	G-E	G	--	G	G-E
ANNUAL BROADLEAVES					
Florida pusley	E	F	G-E	P	E
Pigweed (redroot & spiny)	G	F	G-E	P	E
Lambsquarter	E	F	G-E	P	E
Morningglories	P	P	P	P	P
Sicklepod (coffeeweed)	P	P	P	P	P
Florida beggarweed	P	P	P	P	P
Cocklebur	P	P	P	P	P
PERENNIALS					
Nutsedge	P	P	P	P	P
Bermudagrass	P	P	P	P	P
<p>¹ Estimated effectiveness based on herbicide rates recommended in this report. Effectiveness may vary depending on factors such as herbicide time of application, soil type, and weather conditions.</p> <p style="text-align: center;"><u>Time of Application</u> PPI = Preplant Incorporated PT = Post Transplant LB = Lay-by</p> <p style="text-align: center;"><u>Weed Control Symbols</u> E = 90-100% control G = 80-89% control F = 60-79% control P = Less than 60% control -- = insufficient observations</p>					