Weed Management

J.D. Green, Neil Rhodes, Chuck Johnson, and Matthew Vann

Weeds can impact tobacco production by reducing yield, interfering with crop harvest, and contaminating cured leaf as Non-Tobacco Related Material (NTRM). Many of the common weed problems in tobacco are summer annuals such as foxtails, pigweeds, lambsquarters, and annual morningglories. In addition, some perennials such as johnsongrass, honeyvine milkweed, and yellow nutsedge can be particularly troublesome in some tobacco fields. In locations where troublesome weeds are difficult to control it may become necessary to choose an alternative field site to grow tobacco. Table 1 is a guide to the relative response of selected weeds to various herbicides available for use in tobacco.

Land preparation practices such as moldboard plowing and disking provide initial weed control by destroying early season weeds that emerge before transplanting. Field cultivation and hand-hoeing are also traditional methods to maintain good weed

Table 1. Guide to the relative response of weeds to herbicides.[1]

	Barnyardgrass	**Braodleaf Signalgrass**	**Crabgrass**	**Fall Panicum**	**Foxtails**	**Johnsongrass (seedling)**	**Johnsongrass (rhizome)**	**Yellow Nutsedge**	**Black Nightshade**	**Cocklebur**	**Galinsoga, Hairy**	**Jimsonweed**	**Lambsquarters**	**Morningglory**	**Pigweeds**	**Prickly Sida**	**Purslane**	**Common Ragweed**	**Ragweed, Giant (Horseweed)**	**Smartweed**	**Velvetleaf**
Command, etc.	**G**	**G**	**G**	**G**	**G**	F	P	P	P	F	F	F	**G**	P	P	**G**	**G**	**G**	F	F	**G**
Devrinol	**G**	**G**	**G**	**G**	**G**	F	P	P	P	N	F	N	F	N	F	P	**G**	F	N	P	P
Prowl, etc.	**G**	**G**	**G**	**G**	**G**	**G**	P	N	N	N	P	N	**G**	P	**G**	P	**G**	P	N	F	F
Spartan, etc.	F	F	F	F	F	P	P	**F-G**	**G**	F	F	**G**	**G**	**G**	**G**	**G**	**G**	P	P	**G**	F
Spartan Charge	F	F	F	F	F	P	P	**F-G**	**G**	F	F	**G**	**G**	**G**	**G**	**G**	**G**	P	P	**G**	F
Spartan + Command	**G**	**G**	**G**	**G**	**G**	F	P	**F-G**	**G**	F	**G**	**G**	**G**	**G**	**G**	**G**	**G**	F	**G**	**G**	
Poast	**G**	**G**	**G**	**G**	**G**	**G**	F	N	N	N	N	N	N	N	N	N	N	N	N	N	N
G = Good F = Fair P = Poor N = None - No Data Available																					

[1] This table should be used only as a guide for comparing the relative effectiveness of herbicides to a particular weed. Under extreme environmental conditions, the herbicide may perform better or worse than indicated in the table. If a grower is getting satisfactory results under their own conditions, products should not necessarily be changed as a result of the information in the table.

control post-transplant, but effective herbicide control options decrease the need for mechanical control methods. A foliar burndown herbicide also allows production of tobacco by conservation tillage methods. Specific herbicide options that are currently recommended for use on tobacco fields are discussed in Table 2.

Use of certain herbicides on a previous crop can limit the rotational crops that can be planted in treated fields. For example, when atrazine is applied for weed control in corn during the previous growing season, there is a possibility that tobacco could be injured the year following application. Residual carryover from some pasture or forage crop herbicides can also severely damage tobacco planted in treated fields, sometimes for many years after the original application. Therefore, consult the herbicide labels to determine whether there is a risk to planting tobacco in fields that were used to grow other grain or forage crops. General rotational crop guidelines for herbicides available in grain crops can be found in University of Kentucky Extension bulletin *Weed Control Recommendations for Kentucky Grain Crops* (AGR-6) the University of Tennessee Extension bulletin *Weed Control Manual for Tennessee* (PB 1580), the *North Carolina Agricultural Chemicals Manual*, or the *Virginia Cooperative Extension Pest Management Guide for Field Crops* (456-016).

Be familiar with label guidelines and rotational restrictions when applying tobacco herbicides. Limitations for some rotational crops are highlighted within the remarks for each herbicide listed in Table 2.

Table 2. Herbicides recommended for use in tobacco fields.

Herbicide	Remarks and Limitations
Before Transplanting—Burndown Herbicides for Use in Conservation Tillage	
Gramoxone SL 2.0 2.74 to 3.75 pt/A (*paraquat* 0.6 to 0.94 lb ai/A) + Non-Ionic Surfactant 2 pt/100 gal or Crop Oil Concentrate 1gal/100 gal [Supplemental label for use in KY, TN, and NC only]	**Weeds Controlled:** Annual grasses and broadleaf type weeds that have emerged or for burn-down of cover crops. Apply when weeds and cover crop are actively growing and between 1 to 6 inches in height. Vegetation 6 inches or taller may not be effectively controlled. ***A copy of the supplemental label should be in the hands of the applicator at time of application***. Apply as a broadcast treatment during the early spring but prior to transplanting tobacco. Use the higher rate on dense populations and/or on larger or harder to control weeds. Weeds and grasses emerging after application will not be controlled. A maximum of 2 applications may be made. Gramoxone may be tank-mixed with other registered tobacco herbicides for improved burndown. Do not graze treated areas or feed treated cover crops to livestock.
Before Transplanting—Soil-applied Herbicides	
Command 3ME 2 to 2.67 pt/A (*clomazone* 0.75 to 1 lb ai/A) Other products containing *clomazone* and labelled for use on tobacco include: **Caravel, Willowood Clomazone 3ME** [consult product labels for application rates, etc.]	**Weeds Controlled:** Barnyardgrass, broadleaf signalgrass, crabgrass, fall panicum, foxtails, jimsonweed, lambsquarters, prickly sida, purslane, common ragweed, velvetleaf Apply COMMAND 3ME as a soil-applied treatment prior to transplanting. Off-site movement of spray drift or vapors of COMMAND can cause foliar whitening or yellowing of nearby sensitive plants. Consult label for spray drift precautions and required setbacks when applied near sensitive crops and other plants. Tobacco plants growing under stressed conditions (cold/wet weather) may show temporary symptoms of whitening or yellowing. COMMAND may be tank-mixed with other herbicides registered for use in tobacco to broaden the weed control spectrum or with other tobacco pesticides. Cover crops may be planted anytime, but foliar whitening, yellowing, and/or stand reductions may occur in some areas. Do not graze or harvest for food or feed cover crops planted less than 9 months after treatment. When COMMAND 3ME is applied alone, rotational crops that may be planted include soybeans, peppers, or pumpkins anytime; field corn, popcorn, sorghum, cucurbits, or tomatoes (transplanted) after 9 months; sweet corn, cabbage, or wheat after 12 months; and barley, alfalfa, or forage grasses after 16 months following application. See label for rotation guidelines for other crops and when tank-mixed with other herbicides.
Devrinol 50DF 2-4 lb/A or **Devrinol DF-XT** 2-4 lb/A or **Devrinol 2-XT** 2-4 qt/A (*napropamide* 1-2 lb ai/A)	**Weeds Controlled:** Barnyardgrass, broadleaf signalgrass, crabgrass, fall panicum, foxtails, purslane Apply to a weed-free surface before transplanting and incorporate immediately, preferably in the same operation. Follow incorporation directions on label. The XT formulations include a UV-light protectant which can be surface applied or incorporated. Small grain may be seeded in rotation in the fall to prevent soil erosion, but may be stunted. Small grains used as rotation crops must be plowed under or otherwise destroyed. To avoid injury to crops not specified on the label, do not plant other rotational crops until 12 months after the last DEVRINOL application.

continued

Table 2. Herbicides recommended for use in tobacco fields.

Herbicide	Remarks and Limitations
Prowl 3.3EC 3 to 3.6 pt/A [medium soil texture] (*pendimethalin* 1.25 to 1.5 lb ai/A) [Use maximum 2.4 pt/A (1 lb ai/A) on course texture soils NC & VA] or **Prowl H2O** 3 pt/A [medium soil texture] (*pendimethalin* 1.4 lb ai/A) [Use maximum 2 pt/A (0.95 lb ai/A) on course texture soils NC & VA] Other products containing *pendimethalin* and labelled for use on tobacco include: **Acumen, Framework 3.3EC, Pendimethalin, Pin-Dee 3.3EC, Satellite Flex, Satellite HydroCap, Stealth** [consult product labels for application rates, etc.]	**Weeds Controlled:** Barnyardgrass, broadleaf signalgrass, crabgrass, fall panicum, foxtails, lambsquarters, pigweeds, purslane Apply to prepared soil surface up to 60 days prior to transplanting. Incorporate within 7 days after application within the top 1 to 2 inches of soil. Consult incorporation directions on label. Emerged weeds will not be controlled. Tobacco plants growing under stress conditions (cold/wet or hot/dry weather) may be injured where pendimethalin is used. Wheat or barley may be planted 120 days after application unless small grains will be planted in a no-tillage system.
Spartan 4F 8 to 12 fl.oz/A [medium soil texture] (*sulfentrazone* 0.25 to 0.375 lb ai/A) [Use 4.5 to 6 fl.oz/A (0.14 to 0.19 lb ai/A) for soils with course texture, <1.5% OM] Other products containing *sulfentrazone* and labelled for use on tobacco include: **Blanket, Helm Sulfentrazone 4F, HM-1512 AG, Shutdown, Sulfin 4SC, Willowood Sulfentrazone 4SC,** [consult product labels for application rates, etc.]	**Weeds Controlled:** Black nightshade, jimsonweed, lambsquarters, morningglories, pigweeds, prickly sida, purslane, smartweed Use the higher rate of SPARTAN when weed pressure is heavy with morningglory or yellow nutsedge. Apply from 14 days before up to 12 hours prior to transplanting tobacco as a soil-surface treatment or preplant incorporated (less than 2 inches deep). Perform all cultural practices for land preparation, fertilizer/fungicide incorporation, etc. prior to application of SPARTAN. If the soil must be worked after application but prior to transplanting, do not disturb the soil to a depth greater than 2 inches. Temporary stunting or yellowing of tobacco and localized leaf burns may be observed under some conditions with this treatment. Unacceptable crop injury can occur if applied post-transplant. Spartan may be impregnated on dry bulk fertilizers (consult label). Proper mixing and uniform spreading of the impregnated fertilizer mixture on the soil surface is required for good weed control and to avoid crop injury. Rotational crops which may be planted include soybeans or sunflowers anytime; wheat, barley, or rye after 4 months; field corn after 10 months; alfalfa and oats after 12 months; and popcorn, sweet corn, and sorghum (for rates above 8 oz/A) after 18 months. See label for rotation guidelines with other crops.
Spartan Charge 10.2 to 15.2 fl.oz/A [medium soil textures] (*carfentrazone* 0.028 to 0.042 lb ai/A + *sulfentrazone* 0.25 to 0.38 lb ai/A) [Use 5.7 to 7.6 fl.oz/A (0.16 to 0.21 lb ai/A) for soils with course texture, <1.5% OM]	**Weeds Controlled:** Black nightshade, jimsonweed, lambsquarters, morningglories, pigweeds, prickly sida, purslane, smartweed Use the higher rate of SPARTAN CHARGE when weed pressure is heavy with morningglory or yellow nutsedge. Apply from 14 days before up to 12 hours prior to transplanting tobacco as a soil surface treatment or preplant incorporated (less than 2 inches deep). Perform all cultural practices for land preparation, fertilizer/fungicide incorporation, etc. prior to application of SPARTAN CHARGE. If the soil must be worked after application but prior to transplanting, do not disturb the soil to a depth greater than 2 inches. Temporary stunting or yellowing of tobacco and localized leaf burns may be observed under some conditions with this treatment. Unacceptable crop injury can occur if applied post-transplant. Rotational crops that may be planted include soybeans or sunflowers anytime; field corn, wheat, barley, or rye after 4 months; alfalfa, popcorn, sweet corn, and oats after 12 months; and sorghum (for rates above 10.2 fl.oz/A) after 18 months. See label for rotation guidelines with other crops.
After Transplanting—Postemergence Herbicides	
Poast 1.5E 1.5 pt/A (*sethoxydim* 0.28 lb ai/A) + Crop Oil Concentrate 2 pt/A or Methylated Seed Oil 1.5 pt/A [NOTE: *Consult labels for lower use rates if using other additives such as High Surfactant Oil Concentrates*]	**Weeds Controlled:** Barnyardgrass, broadleaf signalgrass, crabgrass, fall panicum, foxtails, johnsongrass, volunteer wheat POAST herbicide provides selective postemergence control of annual and perennial grasses. Apply any time from transplanting up to 7 weeks after transplanting tobacco, but avoid applications within 42 days of harvest. For adequate control, ensure good spray coverage using a spray volume from 5 to 20 GPA (gallons per acre). *Use of spray additives such as High Surfactant Oil Concentrates may result in increased risk of crop injury*. Do not cultivate within 5 days before or 7days after applying POAST. For rhizome Johnsongrass, more than one application may be needed. Make the first application of POAST (1.5 pt/A) when johnsongrass plants are 20 to 25 inches, followed by a second application of POAST (1 pt/A) when regrowth is 12 inches. A maximum of 4 pt/A of POAST can be applied per season to tobacco. As a spot treatment, prepare a 1% to 1.5% solution (1.3 oz/gal to 2 oz/gal) of POAST plus a 1% solution of Oil Concentrate (1.3 oz/gal) and apply to the grass foliage on a spray-to-wet basis. Do not apply more than 4 pt/A per season to tobacco, including POAST applied to seedbeds.