

## Weed Management in Grain Sorghum (Milo)

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Interest in grain sorghum production in North Carolina is at an all-time high, and growers should evaluate weed management programs before planting a crop. Excellent broadleaf weed control, including Palmer amaranth, can be achieved in sorghum with timely applications of POST herbicides following a PRE herbicide, although timely application to small weeds is essential. A limited number of active ingredients are available for sorghum, however several herbicide pre-mixes exist (Table 1 and 2). Pre-mixes containing atrazine will provide the greatest residual control of grass and broadleaf weeds. Atrazine use is limited to 2.0 lbs in a single application and 2.5 lbs in a season, with severe rotation restrictions based on rate and timing (after June 10); therefore it will be important to plan atrazine applications accordingly. It is critical to apply a full rate of a PRE grass herbicide since there are no effective herbicide options for emerged grass control once sorghum has emerged. Several herbicides which provide residual control of grass and broadleaf species may be applied POST or POST-Directed. See label comments on soil types for residual herbicides listed below.

**Table 1. Herbicide options for preplant or preemergence weed control in sorghum.**

HERBICIDE	Active ingredient	RATE/A	Application guidelines
<b>Burndown prior to crop emergence</b>			
CLARITY	Dicamba	0.5 pt	Apply to actively growing weeds at least 15 days prior to planting. Typically mix with glyphosate.
GLYPHOSATE (multiple)	Glyphosate	22 to 32 oz	Multiple formulations exist; see Table 7-10 in the NC Ag Chem Manual for information.
GRAMOXONE SL	Paraquat	2 to 4 pt	Generic brands of paraquat containing 3 lb active per gal may be applied at 1.3 to 2.7 pt
RAGE D-TECH	Carfentrazone + 2,4-D	8 to 16 oz	Typically mixed with glyphosate. Apply at least 10 days ahead of planting.
EXPERT <sup>1</sup>	S-metolachlor + Atrazine + Glyphosate	2.5 to 3.75 qt	PRE from 21 days before planting through preemergence. Application to emerged sorghum will result in plant death
SEQUENCE <sup>1</sup>	S-metolachlor + Glyphosate	3.5 pt	
<b>PREPLANT or PREEMERGENCE</b>			
AATREX 4L	Atrazine	1 to 1.5 qt	Do not exceed 2.5 lbs atrazine/A/season. <b>See label for comments on rotation restrictions.</b>
BICEP II MAG/CINCHATZ <sup>1</sup>	S-metolachlor + Atrazine	1.6 qt	Caution should be used on coarse textured soils. See label for comments on soil types.
CALLISTO	Mesotrione	6 fl oz	PRE 21 to 7 days before planting. See label for comments on soil types.
DEGREE XTRA <sup>1</sup>	Acetochlor + Atrazine	2.0 to 3.7 qt	PRE after planting before sorghum emergence. See label for comments on soil types.
DUAL II MAG./CINCH <sup>1</sup>	S-metolachlor	1.33 to 1.67 pt	Apply after planting before weeds and crop emerge. See label for comments on soil types.
GUARDSMAN MAX <sup>1</sup>	Dimethenamid-P + Atrazine	3 to 4.6 pt	Caution should be used on coarse textured soils. See label for comments on soil types.
INTRRO / MICRO-TECH <sup>1</sup>	Alachlor	2 to 2.75 qt	PPI (2") within 7 days before planting or PRE after planting before sorghum emergence
LARIAT <sup>1</sup>	Alachlor + Atrazine	2.75 to 3.25 qt	PPI up to 14 days before planting or PRE after planting before sorghum emergence
OUTLOOK <sup>1</sup>	Dimethenamid-P	14 to 20 oz	Apply after planting before weeds emerge
SHARPEN	Saflufenacil	1 to 2 fl.oz	Do not apply after emergence or when an at-planting application of organophosphate or carbamate has been used
WARRANT <sup>1</sup>	Acetochlor	1.5 to 3 qt	See label for comments on soil types.
LEXAR <sup>1</sup>	S-metolachlor + Atrazine + Mesotrione	3 qt	Apply from 21 days before planting through PRE. See label for comments on soil types. Applying < 7 days before sorghum planting will increase risk of crop injury

<sup>1</sup> Use sorghum seed treated with an approved seed safener for chloroacetamide herbicides.

**Table 2. Herbicide options for postemergence weed control in sorghum.**

HERBICIDE	Active ingredient	RATE/A	Application guidelines
2,4-D amine 3.8 SL	2,4-D amine	3 to 10 fl oz	Apply when sorghum is 6 to 15" tall. Limited to one application <b>POST-DIRECTED APPLICATION</b> when sorghum is 8 to 15" tall
AATREX 4L *	Atrazine	1 to 2 qt	Apply before weeds are 1.5" tall and before sorghum exceeds 12"
AIM EC	Carfentrazone-ethyl	0.5 fl oz	From 4" tall to prior to boot stage
BASAGRAN	Bentazon	1.5 to 2 pt	Excellent crop tolerance. Usually applied at the 1- to 5-leaf stage
BUCTRIL	Bromoxynil	1 to 1.5 pt	Apply at 3- to 4-leaf stage up to boot stage of sorghum
CLARITY	Dicamba	0.5 pt	Best time to apply is the 3- to 5-leaf stage, usually within 25 days after planting. <b>POST-DIRECTED APPLICATION</b> after sorghum is 8 to 15"
DEGREE XTRA*	Acetochlor + Atrazine	2.0 to 3.7 qt	Apply to sorghum up to 12" tall
GUARDSMAN MAX *	Dimethenamid-P + Atrazine	3 to 4.6 pt	
HUSKIE	Pyrasulfotole + bromoxynil	11 to 13 oz	Apply from the 3-leaf stage up to 12" tall. <b>Do not harvest grain within 60 days of Huskie application</b>
MARKSMAN *	Dicamba + Atrazine	1.5 to 2.0 pt	Apply to sorghum up to 8" tall
PEAK **	Prosulfuron	0.75	Apply to sorghum between 5 and 20" tall. <b>POST-DIRECTED APPLICATION</b> when crop is 20 to 30' tall
RAGE D-TECH	Carfentrazone + 2,4-D	8 oz	From 5 inches to V6 growth stage
SANDEA **	Halosulfuron	0.67 oz	Apply from 2-leaf stage but before grain head emergence.
STARANE	Fluroxypyr	0.67 pt	Apply to sorghum from the 3- to 7-leaf stage. <b>POST-DIRECTED APPLICATION</b> when sorghum is 8-leaf stage to boot stage.
WARRANT ***	Acetochlor	1.5 to 3 qt	Apply before sorghum reaches 11" tall
WEEDMASTER	Dicamba + 2,4-D	1 pt	Apply to sorghum in the 3–5 leaf stage (4 to 8" tall). Sorghum may be most sensitive to injury if applied during stressful conditions, such as high moisture, low fertility, or abnormal temperatures
YUKON	Halosulfuron + Dicamba	4 to 6 oz	Apply to sorghum from the 3- to 5-leaf stage. <b>POST-DIRECTED APPLICATION</b> when sorghum is 8 to 15" tall
<b>POST-DIRECTED HERBICIDES</b>			
LINEX	Linuron	1 to 2 lb	<b>POST-DIRECTED APPLICATION</b> when sorghum is at least 15" tall and weeds are 2 to 4" tall. Spray no higher than the lower 3" of the sorghum stalk
GRAMOXONE SL	Paraquat	2 to 4 pt	<b>HOODED APPLICATION</b> when sorghum is at least 15" tall. Keep spray off of the sorghum foliage
PROWL H20 ***	Pendimethalin	1.5 to 3 pt	<b>POST-DIRECTED APPLICATION</b> after grain sorghum is 6" tall

\* Do not exceed 2.5 lbs of atrazine in a single season.

\*\* ALS-Resistant biotypes exist in North Carolina, these will NOT be controlled.

\*\*\* Will NOT control emerged weeds; provides residual control only.

Specific weed control recommendations can be found in the North Carolina Agricultural Chemicals Manual.

For all herbicide applications consult the herbicide label for appropriate rates for your soil type and organic matter content.