

Weed Control in Grain Sorghum

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Weed competition in grain sorghum reduces yields, causes harvesting losses and increases seed content of the soil seedbank. Even light weed infestations in the early growing season will reduce yields significantly. Grain sorghum seedlings grow slowly and are weak competitors to most weeds. Research data have shown



Figure 8-1. Weeds compete for light, moisture and nutrients.

that one pigweed plant per 3 feet of row left uncontrolled until sorghum reaches the 3-leaf stage will reduce yields by 10%. Heavy infestations of grassy weeds may cause up to a 20% yield reduction in the first 2 weeks after sorghum germination. Late-season weed infestations have less effect on produced yields but reduce harvesting efficiency and may reduce harvested yields.

Most grain sorghum is planted in early to mid-April throughout the state to allow flowering prior to a large buildup of sorghum midge. Although this early planting reduces insect pressure, it contributes additional stress to the grain sorghum seedling. Grain sorghum was introduced from the warmer climates of Africa and grows best when soil and air temperatures rise above 70°F. Seedlings stressed from cool and wet soils are much more sensitive to weed competition and herbicide injury.

The most troublesome weeds in Arkansas grain sorghum include johnsongrass, broadleaf signalgrass, barnyardgrass, crabgrass, morning-glory, pigweed, prickly sida and sicklepod. There are fewer control options for weed control in grain sorghum than in corn, cotton and soybeans. Grain sorghum lacks tolerance to many of the commonly used grass and broadleaf herbicides and is occasionally injured even by herbicides labeled for use in sorghum. Unfavorable weather conditions such as cool, wet soils, delayed crop emergence, deep planting, seedling diseases, poor soil physical conditions and poor quality seed may contribute to seedling stress and herbicide injury.

Grain sorghum is almost always included in a crop rotation schedule. Herbicides such as Pursuit, Reflex, Flexstar and other generic

fomesafen applied to soybeans the previous year can remain in the soil and cause stand reductions and/or injury to sorghum. ResolveQ, RealmQ and AccentQ in corn and Staple applied to cotton the previous year can also injure sorghum. In addition, Newpath or Clearpath used in rice will carry over to grain sorghum. Often the carryover herbicide injury is not visible in very young sorghum but becomes apparent at the 3- to 6-leaf stage of growth. For carryover information on common herbicides, refer to the Extension publication MP519, *Row Crop Plant-Back Intervals for Common Herbicides* (available at www.uaex.edu).

A combination of tillage and chemical weed control is usually most effective in grain sorghum. Effective chemical weed control is dependent upon proper weed identification and matching herbicide rate and timing to the particular weeds. Cool-season weeds should be destroyed prior to planting to ensure that crop seedlings emerge competition free. Most winter weeds may be controlled with glyphosate, 2,4-D, dicamba or paraquat. (For additional information, refer to Extension publication MP44, *Recommended Chemicals for Weed and Brush Control*, available from county Extension offices throughout the state and at www.uaex.edu.)

Broadleaf weeds may be controlled postemergence, but there are few options for postemergence grass control. Grassy weeds are most effectively controlled with preemergence herbicide applications. Johnsongrass (*Sorghum halepense*) and grain sorghum (*Sorghum vulgare*) are genetically very similar, and there are no approved herbicides that will selectively remove johnsongrass from grain sorghum. Even light infestations of johnsongrass in other crops planted the previous year often turn into heavy infestations in grain sorghum due to lack of selective control. Fields with a history of johnsongrass or bermudagrass should not be planted to grain sorghum.

Herbicide programs for effective weed control must be developed based on weed spectrum and soil type. Your county Extension agent receives extensive training on weed identification and weed control technology and is available to assist in developing economical and effective control programs. MP44, *Recommended Chemicals for Weed and Brush Control*, is updated annually to reflect the most current information on herbicide label changes and revised recommendations based on research data.

Herbicides Used for Weed Control

Effective weed control programs start with clean fields at planting. It is critical to remove existing cool-season weeds with tillage or herbicides prior to planting. Glyphosate and glyphosate in combination with 2,4-D are very effective preplant herbicides.

Atrazine is the basis of most chemical weed control programs in Arkansas grain sorghum. It is estimated that greater than 90% of the acres planted receive at least one application of atrazine. In sites where weedy grasses are not a problem, atrazine may be the only herbicide applied. Although atrazine has some activity on grassy weeds, it is considered a broadleaf herbicide. It may be combined with the chloroacetamide herbicides such as Dual II Magnum, Outlook and Lasso to broaden the weed control spectrum. **Concep®-treated seed** must be planted if any of the chloroacetamides are to be used. These active ingredients are also sold in premixes with atrazine under different names. Bicep II Magnum and Guardsman Max are examples of atrazine plus chloroacetamide premixes that require Concep-treated seed.

Preemergence herbicides are applied after the sorghum has been planted and prior to emergence. The chloroacetamides such as Dual

Magnum are taken into the weedy plants through the emerging coleoptiles and have little or no activity on emerged weeds. These herbicides must be applied before targeted weeds germinate. Atrazine is effective as a preemergence or early postemergence herbicide. Dual Magnum, Lasso and Outlook primarily control grasses such as crabgrass, barnyardgrass and broadleaf signalgrass but also suppress yellow nutsedge and offer some control of pigweeds. Combinations of these products with atrazine as tank mixes or premixes applied preemergence will control most seedling grasses and broadleaf weeds for 3 weeks.

Rainfall or irrigation is required to incorporate the herbicides with the soil for activity. This is often referred to as “activation” of the herbicide. However, large rains immediately after application may move some of the herbicide into contact with the germinating sorghum seedling and may actually be taken into the germinating seed as it imbibes water. This usually results in delayed emergence and some crop injury. Under good growing conditions, the symptoms are usually only cosmetic and the sorghum resumes normal growth 7 to 10 days after emergence.

Applying high rates (2 pounds active ingredient) of atrazine preemergence to sorghum is considered to be **high risk**. Significant stand losses and delayed development of seedlings are common following high rates of atrazine in cool, wet weather. Splitting the atrazine applications and applying no more than 1 pound active ingredient at planting followed by an additional pound early postemergence has proven to be much safer to the sorghum. Atrazine may also cause more injury on sandy soils. To reduce injury, wait until sorghum is up and growing well prior to atrazine application. In fields where grassy weeds are expected to be a problem, a chloroacetamide preemergence alone or in combination with a low rate of atrazine followed by additional atrazine early postemergence is a safe and very effective early-season weed control program.



Figure 8-2. Injury from high rates of Dual and atrazine can occur under cool/wet conditions.

Postemergence Weed Control

Control of weeds once they emerge in grain sorghum can be difficult, especially with grass species. There is currently no available option for control of johnsongrass once it emerges in grain sorghum fields. Other grasses such as broadleaf signalgrass, crabgrass and barnyardgrass can be controlled while they are small with atrazine (AAtrex) and quinclorac (Facet L) applied postemergence. Atrazine applied at rates higher than 1 pound active ingredient per acre postemergence may injure and/or kill sorghum in cool conditions, especially on sandy soils or if it is not actively growing. Other herbicides such as 2,4-D, dicamba (Clarity), prosulfuron (Peak), bromoxynil (Buctril) and Huskie are also effective postemergence broadleaf herbicides for use in sorghum. Paraquat (Gramoxone Max) is labeled for post-directed use in larger grain sorghum to control escaped weeds. Considerable crop leaf burn is expected, and this option should be used only in salvage situations where grassy weeds were not controlled earlier in the season. (See label for special precautions and injury warnings.)

Standard Herbicide Program

General weed control strategy for grain sorghum is as follows:

1. Plant Concep®-treated seed.
2. Dual Magnum 1-1.3 pt/A PRE, or Verdict 10 oz/A PRE, or Dual Magnum 1 pt/A + AAtrex 1.5-2 pt/A PRE.
3. V4 – Atrazine 2 pt/A + 1.3 pt/A Dual Magnum POST for grass and broadleaf weeds
 - Or include Facet L if high grass population.
 - Can include Clarity or Huskie if high populations of pigweeds and morningglories.
4. Huskie can be applied for broadleaf weed control up to 30-inch grain sorghum.



Figure 8-3. Bicep II Magnum 1.3 qt/A PRE followed by 1 qt/A AAtrex on 3-4 leaf sorghum.

Nutsedge Control in Sorghum

Yellow nutsedge and other annual sedges are becoming an increasing problem in grain sorghum. Permit herbicide can be applied for nutsedge control from 2-leaf grain sorghum

through just prior to grain head emergence.

Application rates should not exceed 1 ounce per acre when nutsedge is 4 to 12 inches tall. However, if nutsedge is allowed to reach 4 to 12 inches tall, severe crop competition has already occurred. Only one application of Permit can be made in season to grain sorghum.

Harvest Aids

The absence of approved herbicides for late-season weed control in grain sorghum often permits escaped weeds to hinder harvesting operations. Roundup, Aim and sodium chlorate are effective harvest aids that will desiccate weeds and improve harvesting efficiency. Roundup provides the best harvest aid to increase efficiency; Aim should be added to desiccate vines. These should be applied 7 to 10 days prior to harvest.

Watch Out for Drift

Grain sorghum is sensitive to herbicide drift from other crops. Glyphosate, Clincher, Ricestar, Select and propanil are especially damaging to grain sorghum in low rates. Symptoms may range from stand losses to non-uniform growth and delayed maturity. Grain sorghum affected by



Figure 8-4. Glyphosate drift on grain sorghum.



Figure 8-5. Grain sorghum injury from Laudis herbicide POST. Grain sorghum fields next to corn should be monitored carefully for drift from corn herbicides.

low rates of grass herbicides often suffers much more damage from sorghum midge due to the non-uniform growth and flowering throughout the field.

Herbicide Resistance

Herbicide-resistant weeds are becoming more of a problem in all crops. Pigweeds (Palmer amaranth) with resistance to atrazine are common in other states but have not been found in Arkansas at this time. There are some johnsongrass populations in Arkansas with resistance to ALS herbicides and glyphosate. Grain sorghum should not be

planted in fields containing potentially high populations of johnsongrass if at all possible. Much of the Palmer amaranth in Arkansas is resistant to the ALS mode of action herbicides such as Peak as well as glyphosate. As more corn and grain sorghum are grown in Arkansas with more dependence on atrazine, triazine resistance is more likely. **If you suspect resistance after a herbicide application, treat with an alternate herbicide and contact your county Extension agent. The University of Arkansas will collect samples and test for resistance. Do not let the weeds go to seed in the field.**

Table 8-1.
Weed Response Ratings for Grain Sorghum Herbicides

HERBICIDES	MODE OF ACTION	GRASSES										BROADLEAVES										SEDGES				
		Barnyardgrass	Broadleaf Signalgrass	Crabgrass	Fall Panicum	Foxtail	Goosegrass	Red Rice	Rhizome Johnsongrass	Ryegrass	Seedling Johnsongrass	Shattercane	Bigroot Morningglory	Cocklebur	Common Ragweed	Honeyvine Milkweed	Horsenettle	Lambsquarters	Morningglory	Pigweed sp.	Prickly Sida			Purslane	Sicklepod	Smartweed
		Preemergence																								
Atrazine	5	6	4	7	3	6	6	8	0	-	2	0	4	9	9	6	5	9	8	9	9	9	8	9	8	0
Verdict	14, 15	8	7	8	7	8	8	7	0	-	-	-	5	-	-	-	-	7	8	9	7	-	5	-	-	-
Dual Magnum/Outlook	15	8	8	9	9	9	9	7	0	9	6	7	2	0	7	-	3	6	2	8	6	6	0	5	4	9
Dual II Magnum + Atrazine	15, 5	8	8	9	9	9	9	9	0	9	4	7	4	8	9	6	3	9	8	9	9	9	8	4	7	7
Degree + Atrazine	15, 5	9	7	9	9	9	9	8	0	8	6	7	4	8	9	6	3	9	8	9	9	9	8	4	7	7
Micro-Tech + Atrazine	15, 5	8	7	9	8	9	9	9	0	8	3	7	3	8	9	5	3	9	8	9	9	9	8	8	6	6
Outlook + Atrazine	15, 5	9	8	9	9	9	9	8	0	8	6	7	4	8	9	6	3	9	8	9	9	9	8	6	6	7
Lexar	15, 5, 27	9.5	9.5	9.5	8	8	7	8	0	9	3	5	4	9	9	7	3	9	9	10	9.5	9	9	9	10	7
Postemergence																										
Peak	2	0	0	0	0	0	0	0	0	0	0	0	-	3	8	-	-	8	8	4	8	-	8	8	8	0
Permit	2	0	3	3	3	0	3	0	3	-	3	0	-	-	5	-	-	5	5	0	7	7	4	6	6	9
Permit Plus	2	0	3	3	3	0	3	0	3	-	3	0	-	-	5	-	-	6	6	0	8	8	5	7	7	10
2,4-D	4	0	0	0	0	0	0	0	0	0	0	0	3	9	9	9	4	8	9	8	8	9	8	5	8	0
2,4-D	4	0	0	0	0	0	0	0	0	0	0	0	8	8	9	9	6	9	9	9	-	-	8	9	8	0
Barvel or Clarity	4	0	0	0	0	0	0	0	0	0	0	0	4	-	6	-	-	6	8	4	-	-	-	0	6	0
Facet L	4	8	9	7	6	7	6	0	0	-	0	0	4	-	6	-	-	6	8	4	-	-	-	0	6	0
Facet L + Atrazine	4, 5	8	9	8	6	8	7	9	0	6	4	0	4	9	8	6	4	8	9	9	8	9	8	9	7	5
Atrazine + oil	5	6	6	6	5	7	6	9	0	5	3	0	4	9	8	6	4	8	8	9	8	9	8	9	7	5
Basagran	6	0	0	0	0	0	0	0	0	0	0	0	3	9	8	5	0	5	4	0	7	7	0	9	8	7
Buctril	6	0	0	0	0	0	0	0	0	0	0	0	7	9	7	7	4	8	7	5	-	-	3	9	7	0
Huskie	6, 27	0	0	0	0	0	0	0	0	0	0	0	7	9	8	7	5	8	8	8	8	-	6	9	7	0
Paraquat directed or Hood	22	9	9	9	8	8	9	9	0	7	8	0	-	4	8	-	7	9	4	9	3	8	9	5	7	3

*Rating will be 0 on ALS inhibitor-resistant weeds (Group 2).

**Repeat application may be needed to achieve these ratings.

Rating scale – 0 = No Control 10 = 100% Control.

Table 8-2. Recommended Herbicides for Weed Control in Grain Sorghum

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
GRAIN SORGHUM				
Preplant				
glyphosate @ 1 lb/A	Emerged weeds.	Glyphosate (4 lb/gal formulations) 32 oz/A.	Preplant for vegetation knockdown.	Apply in low volume – 5 to 10 gpa.
glyphosate + 2,4-D @ 1.0 + 0.50 lb/A	Annual grasses and broadleaf weeds.	Glyphosate (4 lb/gal formulations) + 2,4-D 32 oz/A + 1 pt/A of 4SL 2,4-D amine.	Same as above.	Improved control of horseweed, curly dock and primrose.
S-metolachlor @ 0.9 to 1.4 lb/A	Red rice, yellow nutsedge, annual grasses and pigweed.	Dual Magnum 7.64 EC or Cinch 7.64 EC 1 to 1.6 pt/A.	Incorporate thoroughly in top 2 inches within 14 days before planting.	Use with Concep-treated sorghum seed only. If broadleaf weeds emerge, use 2,4-D or atrazine postemergence.
dimethenamid @ 0.56 to 0.98 lb/A	Red rice, yellow nutsedge, annual grasses and pigweed.	Outlook 6 E 12 to 21 oz/A.	Apply up to 45 days preplant.	Use with Concep-treated seed only.
Preemergence				
S-metolachlor @ 0.95 to 1.9 lb/A	Annual grasses and pigweed. For red rice or yellow nutsedge use ppi treatment above.	Dual Magnum 7.64 EC or Cinch 7.64 EC 1 to 2 pt/A.	At planting.	Use with Concep-treated sorghum seed only. May be tank mixed with atrazine according to label directions or may be followed with atrazine or 2,4-D for broadleaf control as recommended below.
S-metolachlor + atrazine @ 1.25 + 1 lb/A	Annual grasses and broadleaf weeds. For red rice or yellow nutsedge, use Dual Magnum ppi above.	Bicep II Magnum 5.5 L or Cinch ATZ 5.5 F 1.3 qt/A.	At planting.	Use with Concep-treated seed only. Good treatments for average weed infestations. However, if red rice is a problem, use Dual ppi and atrazine early post if needed. If heavy cocklebur and morningglory pressure exists, use atrazine preemergence at pre-emergence rates below or use atrazine early post as listed below.
atrazine @ 1 lb/A	Germinating annual grasses and most annual broadleaf weeds, including cocklebur, annual morningglory and sicklepod.	Atrazine 1 qt/A 4L or 1.1 lb/A Nine-0.	At planting.	Do not plant fall cover crops. Do not plant crops other than corn in treated fields during the same season. Thoroughly till soil before planting any spring crop other than corn or sorghum. Planting deeper than 1 inch will increase safety margin. Do not use on coarse-textured soils (sand, loamy sand, sandy loam) or on any soil with less than 1% o.m. For sandy soils, see AAtrex + oil below. All atrazine labels have been revised because of surface and groundwater concerns. Special precautions are required on new labels.

Table 8-2. Recommended Herbicides for Weed Control in Grain Sorghum (cont.)

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
Preemergence [cont.]				
saflufenacil @ 0.022 to 0.044 lb/A	Pigweed, velvetleaf, morning-glory and horseweed.	Sharpen 1 to 2 oz/A.	Burndown up to preemergence. Do not apply Sharp-en over the top of emerged sorghum.	For best burndown results, tank mix with glyphosate or paraquat. An MSO and AMS must be used for burndown. See label for further recommendations and restrictions.
dimethenamid + saflufenacil @ 0.31 to 0.62 + 0.044 to 0.088 lb/A	Annual grasses, pigweed, velvetleaf, morningglory and horseweed.	Verdict 10 oz/A.	Burndown up to preemergence. Do not apply Verdict over the top of emerged grain sorghum.	Rainfall or overhead irrigation is required for activation. Verdict can be used as a burndown that leaves behind residual control. For best burndown activity, tank mix with glyphosate and use MSO 1 pt/A + AMS. On medium to fine soils, the rotation interval to soybeans is 30 days if you were to lose the grain sorghum crop. Use with Concep-treated seed. See label for restrictions.
dimethenamid 0.56 to 0.98 lb/A	For annual grasses and pigweed. For red rice or yellow nutsedge, use ppi treatment.	Outlook 6E 12 to 21 oz/A.	At planting.	Use with Concep-treated seed only. Rates depend on percent organic matter. See label.
dimethenamid + atrazine package mix	Annual grasses and broadleaf weeds. For red rice or yellow nutsedge, use ppi treatment.	Guardsman Max 5L 2.5 pt/A.	At planting.	Use with Concep-treated seed only.
Postemergence				
2,4-D amine @ 0.5 lb/A	Most broadleaf weeds such as morningglory, cocklebur and sicklepod.	2,4-D amine 1 pt/A of 4 lb/gal 2,4-D amine. Do not use a surfactant or oil.	Apply when weeds are small and sorghum 6 to 12 inches.	May be applied broadcast overtop to sorghum not over 8 inches. Directed applications later with drop nozzles. Do not treat when sorghum is in bloom. AVOID DRIFT. Do not apply during very active growth, i.e., when combination of good moisture, warm temperatures and high nitrogen exist, or excessive injury may result. Follow all State Plant Board regulations.
dicamba @ 0.25 lb/A	Most broadleaf weeds such as morningglory, cocklebur and sicklepod.	Banvel or Clarity 4 SL 0.5 pt/A. Do not use a surfactant or oil.	From grain sorghum emergence up to 8 inches tall. Best results on weeds 3 inches or less.	Ground application only. Drift is extremely toxic to soybeans. Do not apply after soybeans begin to emerge in general area. Less toxic than 2,4-D to cotton. Follow all State Plant Board regulations.

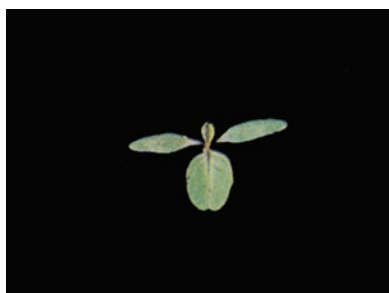
Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
atrazine @ 1 to 2 lb/A	Most small-seeded annuals. More effective on broadleaf weeds. Good control of pigweed, cocklebur, annual morningglory, velvetleaf, spurred anoda, prickly sida, smartweed, sicklepod and red rice.	AAtrex, Atrazine 1.25 to 2.5 lb/A 80W or 1 to 2 qt/A 4L or 1.1 to 2.2 lb/A Nine-0. Use low rate on silt loam soil and high rate on clay soil. No surfactant is recommended on label.	Apply from sorghum emergence up to "close in." Apply before weeds exceed 1½ inches in height. Best grass control obtained before grass weeds exceed ½ inch.	Do not apply if grain sorghum is taller than 12 inches. Do not graze treated areas or feed forage from treated land within 21 days of application. After June 10, do not plant crops other than corn or grain sorghum the following year. Do not use on sands or sandy loam soils. For these soils, use atrazine and crop oil concentrate below. Do not apply more than 2.5 lb/A active atrazine per season.
atrazine @ 1.2 lb/A + oil concentrate	Same as above.	AAtrex, Atrazine + Crop Oil Concentrate 1.5 lb/A 80W or 1.2 qt/A 4L or 1.33 lb/A Nine-0 + 1 qt/A oil concentrate.	Same as above.	Same as above but may be used on sandy loam soil. Less likely to cause injury to milo or carryover to sensitive follow crops.
S-metolachlor + atrazine @ 0.75 to 1.3 lb/A + 1 to 1.2 lb/A	Annual grasses, pigweed, annual morningglory, velvetleaf, smartweed and sicklepod.	Dual Magnum + Aatrex 0.8 to 1.4 pt/A + 1/2 qt/A.	Before sorghum reaches 12 inches tall. Best grass control obtained before grass weeds exceed ½ inch.	Some injury may occur with higher rates on lighter soils.
halosulfuron @ 0.047 lb/A	Yellow nutsedge, flatsedge and hemp sesbania.	Permit or Halomax 75 WG 1 oz/A. Add a nonionic surfactant or crop oil concentrate.	Apply to emerged weeds.	Aerial or ground application. Avoid drift to soybeans.
halosulfuron + dicamba @ 0.075 + 0.2 lb/A	Ragweed, horseweed, nutsedge and broadleaf weeds.	Yukon 67.5 DG 6 oz/A.	From sorghum emergence up to 8 inches tall. Best results on weeds 3 inches or less.	Ground application only. Drift is extremely toxic to soybeans. Do not apply after soybeans begin to emerge in general area. Less toxic than 2,4-D to cotton. Follow all State Plant Board regulations.
prosulfuron @ 0.027 lb/A	Most broadleaf weeds including triazine-resistant biotypes.	Peak 57 WDG 0.75 oz per acre. Add 0.25% nonionic surfactant.	Apply to actively growing sorghum between 5 and 20 inches in height and before head emergence.	Will not control ALS-resistant weeds. See crop rotation section for precautions about rotational crops. Do not apply to sorghum under stress from moisture or cold weather. Do not apply to sorghum that has been treated with an organophosphate insecticide at planting or within 15 days of a postemergence organophosphate insecticide application.
bentazon @ 0.75 to 1 lb/A	Cocklebur, ragweed, jimsonweed, smartweed, prickly sida, velvetleaf and yellow nutsedge.	Basagran 4 S 0.75 to 1 qt/A.	Postemergence. See label for specific timing for weed desired.	May be tank mixed with atrazine. See label. Best treatment for smartweed.

Table 8-2. Recommended Herbicides for Weed Control in Grain Sorghum (cont.)

Crop, Situation, and Active Chemical Per Broadcast Acre	Weeds Controlled	Formulated Material Per Broadcast Acre	Time of Application	Method of Application and Precautions
Postemergence [cont.]				
bentazon + atrazine @ 0.5 to 0.75 + 0.5 to 0.75 lb/A	Most broadleaf weeds.	Basagran + Atrazine 1 to 1.5 pt/A + 1 to 1.5 pt/A 4L or 0.6 to 0.9 lb/A 80W or 0.55 to 0.8 lb/A 90DF. Add crop oil concentrate. Package mix is Laddock . 2½ pt/A Laddock = 0.5 to 0.5 lb/A a.i. rate.	Postemergence from emergence to boot.	Use low rate on small weeds and higher rate on larger weeds. All atrazine labels have been revised because of surface and groundwater concerns. Special precautions are required on new labels.
bromoxynil @ 0.25 to 0.375 lb/A	Cocklebur, smartweed, morningglories and pigweed.	Buctril 2 E 1 to 1½ pt/A. On larger weeds, tank mix with 0.5 lb/A active Atrazine.	Postemergence to weeds in seedling (2- to 4-leaf) stage.	Use high rate on morningglories and pigweed. Weeds must be small. Expect some temporary burn.
bromoxynil + pyrasulfotole @ 0.175 to 0.22 lb/A + 0.03 to 0.39 lb/A	Annual broadleaves including pigweed and morningglories.	Huskie 12.8 to 16 oz/A. Add 0.25% NIS.	Apply on or after 3-leaf stage until grain sorghum reaches 30 inches tall, or flag leaf emerges.	Use high rate on morningglories and pigweed. Weeds must be small. Expect some temporary injury if tank mixed with atrazine.
paraquat @ 0.5 lb/A	Annual grasses and broadleaf weeds.	Paraquat (2 or 3 lb/gal formulations) 32 or 21 oz/A. Add 0.25% nonionic surfactant.	After sorghum is 12 inches.	Directed spray with hoods. Spray must not touch more than lower 3 inches of stalk. Some injury will occur.
quinclorac @ 0.25 to 0.375 lb/A	Annual grasses and broadleaf weeds.	Facet L 22 to 32 oz/A.	Apply to weeds less than 2 inches tall.	Apply prior to 12-inch grain sorghum. Tank mix with 1 lb/A atrazine for improved control. Do not drift on cotton or tomatoes.
Preharvest				
sodium chlorate @ 4.5 to 6 lb/A	Desiccation of green vegetation.	Sodium Chlorate Several brands and trade names available. 2 gal of 3 lb/gal or 1 gal of 6 lb/gal.	7 to 10 days prior to harvest.	Use a labeled brand and follow label directions.
carfentrazone @ 0.016 lb/A	Desiccation of morningglories.	Aim 2 EC 1 oz/A.	3 days prior to harvest.	Coverage is important. Use 10 gallons of spray solution per acre. Can be tank mixed with sodium chlorate.
glyphosate @ 1 to 1.3 lb/A	Desiccation of green vegetation.	Glyphosate (4 lb/gal formulations) 32 to 40 oz/A.	7 days prior to harvest.	Coverage is important. Use 10 gallons of spray solution per acre. Can be tank mixed with sodium chlorate.
glyphosate + carfentrazone @ 1 lb/A + 0.016 lb/A	Improved desiccation of vines/morningglories.	Glyphosate (4 lb/gal formulations) + Aim 2 EC 32 oz/A + 1 oz/A.	7 days prior to harvest.	Coverage is important. Use 10 gallons of spray solution per acre. Can be tank mixed with sodium chlorate.

Figure 8-6. Common Weed Seedlings in Grain Sorghum

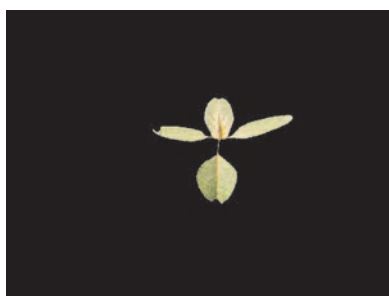
smooth pigweed, redroot pigweed



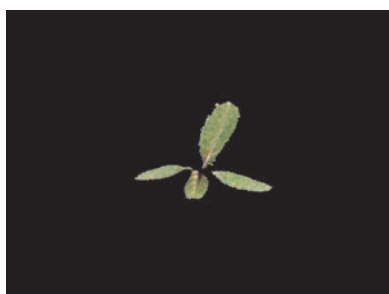
common cocklebur



Palmer amaranth



tall waterhemp



ivyleaf morningglory



common lambsquarters



Figure 8-6. Common Weed Seedlings in Grain Sorghum (cont.)

pitted morningglory



smallflower morningglory



palmleaf morningglory



entireleaf morningglory



bigroot morningglory



purple moonflower



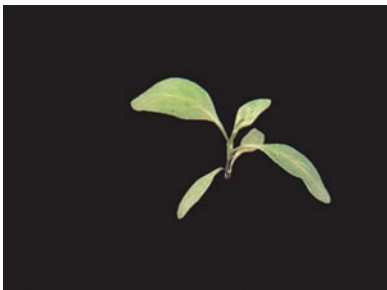
spotted spurge



prickly sida



Pennsylvania smartweed



nutsedge



large or southern crabgrass



goosegrass



Figure 8-6. Common Weed Seedlings in Grain Sorghum (cont.)

broadleaf signalgrass



fall panicum



red rice



barnyardgrass



johnsongrass

