

## 2016 Texas Grain Sorghum Weed Control & Harvest Desiccation Guide

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**Using this document as a planning tool:** This guide is a current listing of known brand name or original herbicides labeled for grain sorghum production. In many cases there are numerous generics that also may be available. See the end of the document about [online searching for possible alternatives](#) using the active ingredient or common name. This planning tool will assist producers seeking additional options for weed management in Texas grain sorghum production. It is tedious to study many different labels to determine application rates, timing, rotation restrictions, and other guidelines for herbicides. Thus many of these key points are listed. Once you decide to consider a possible herbicide on this list that you may not have used before, be sure to thoroughly review the product label.

This guide may also be of some assistance with weed control decisions in sorghum family forages, but many of these active ingredients are not labelled for forage crops.

This information is provided as a general education guide only. The use of product names is not intended as an endorsement of the product or a specific manufacturer, other formulations containing the same active ingredient(s) may be equally effective. This guide is not a substitute for herbicide product labels. Refer to individual labels for specific instructions before using any herbicide listed, and consult the label for recent changes.

**Grain Sorghum Growth Stages:** For assistance in determining differing grain sorghum growth stages noted below, consult Kansas State's summary at <http://www.ksre.ksu.edu/bookstore/pubs/s3.pdf>

### Pre-Plant and Pre-emergence Use

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>AAtrex</b> <i>atrazine</i> (4L) <b>AAtrex Nine-0</b> <b>WDG</b> See label for Nine-O rates	Northern High Plains: 0.75-1.2 qts. Southern High Plains: 0.5-0.75 qt. Coarse soil: do not use	Corn, sorghum: immediately. Cotton: can be risky to cotton under prolonged dry conditions. All others: usually the following year.	Apply PRE (to the soil prior to crop emergence). Do not use on soils with less than 1% O.M. or sand, loamy sand or sandy loam textured. Good broadleaf herbicide, particularly pigweed. <b>24c label for Texas use.</b>
<b>Bicep II Magnum</b> <b>Cinch ATZ 5.5L</b> <i>s-metolachlor</i> + <i>atrazine</i>	Fine: 1.6-2.1 qts. Medium: 1.6-2.1 qts. Coarse: do not use Do not use on any soil with <1% OM.	Only corn or sorghum can be planted the following season. See atrazine restrictions.	Apply preplant, PPI or PRE for control of both annual grasses and broadleaves. Excellent pigweed, crabgrass, and barnyardgrass control. <b>Must use safened seed.</b>

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>Bicep Lite II Magnum Cinch ATZ Lite 6.0L</b> <i>s-metolachlor + atrazine</i>	Fine: 1.1-1.5 qts. Medium: 1.1-1.5 qts. Coarse: do not use Do not use on any soil with <1% OM.	Only corn or sorghum can be planted the following season. See atrazine restrictions.	Apply as either PPI or PRE for control of both annual grasses and broadleaves. Excellent pigweed, crabgrass, and barnyardgrass control. <b>Must use safened seed.</b>
<b>Bullet 4EC Lariat 4EC</b> <i>alachlor + atrazine</i>	Fine: 3.0 qts. Medium: 2.75 qts. Coarse: 2.5 qts.	Corn, sorghum: following year. Other crops: follow atrazine restrictions.	Apply PRE for control of annual grasses and broadleaves. Slightly increased rates for minimum and no-tillage systems. <b>Must use safened seed.</b>
<b>Dual Magnum Cinch 7.64EC</b> <i>s-metolachlor</i>	Fine: 1.33-1.67 pts. Medium: 1.33-1.5 pts. Coarse: 1.0-1.33 pts.	Corn, cotton, peanuts, sorghum, soybean: immediately. Wheat: 4.5 mo.	Apply as either PPI or PRE for control of annual grasses, broadleaves and yellow nutsedge. Use high range of rate if no pre- plant incorporation. <b>Must use safened seed.</b>
<b>Guardman Max 5L</b> <i>(dimethenamid + atrazine)</i> See label for <b>G - Max Lite</b> (less ATZ)	Fine: 3.0-4.0 pts. Medium: 3.0-4.0 pts. Coarse: 2.0-3.0 pts. Do not use on coarse soils <1% O.M.	Corn, sorghum: immediately. Cotton, peanuts, soybeans: following year. Other crops: check label.	Apply as either PPI or PRE for control of annual grasses and broadleaves. Reduced rates can be used for less carryover and partial control. <b>Must use safened seed.</b>
<b>Lumax</b> <i>mesotrione + s- metolachlor + atrazine</i>	Up to 2.5 qts. Applications can be split. Do not apply to GS on sandy soils, or in Texas south of I-20 or east of U.S. 277.	Only rotate to corn, cotton, peanuts, sorghum, soybean, small grains the next year. Corn, sorghum: immediately; Small grains: 4.5 mo. All other crops: 18 mo. For TX High Plains, rotate only to corn or grain sorghum, else injury next year to other crops if applied after June 1.	Do not incorporate. May be applied 7 to 21 days prior to planting for low injury risk. If <7 days, esp. with rain or irrigation, injury potential increases. If no rain or irrigation occurs by 7 days then irrigation is advised or shallow incorporation. Good burndown. NIS or COC plus UAN or AMS if spraying on emerged weeds. OK for no-till. <b>Use safened seed.</b>
<b>Micro-Tech 4EC Intrro 4EC</b> <i>alachlor</i>	<u>Preplant</u> Fine: 2.0 - 2.5 qts. Medium: 2.0 - 2.25 qts. Coarse: 1.5-2.0 qts. <u>Preplant incorporated</u> See label.	Corn, sorghum: immediately. Most other crops: after harvest.	Apply as either PPI or PRE using given rates to control annual grasses and broadleaves. <b>Must use safened seed.</b>

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>Milo-Pro 4EC</b> <i>propazine</i>	Fine: 0.75-1.2 qts. Medium: 0.75-1.2 qts. Coarse: sandy loam only, 0.50-0.75 qts.	Corn, cotton: 12 mo. only if top rate of 1.2 qts./A applied. Applied Wheat & small grains: 120 days.	Apply PRE or preplant. Will NOT control atrazine tolerant weeds. Shallow incorporation when applied preplant can improve weed control under dry conditions. Do not incorporate on sandy loam soil.
<b>Sharpen</b> <i>saflufenacil</i>	1-2 oz. for all soil types	Check Table 4 of label. Corn, sorghum, small grains: immediately. <u>For 2 oz. rate</u> (months): Cotton, 3; Soybean, 1.5; Sunflower & other crops, 4.	Pre-plant, PPI, or PRE timing. Burndown and short-term residual weed control; other herbicides needed for longer-season weed control. 1 oz. rate if <30 days before planting and organophosphate or carbamate insecticide is planned/already applied. 1% v/v MSO + UAN or AMS (latter if with glyphosate). Injures emerged sorghum.
<b>Verdict</b> <i>dimethanamid + saflufenacil</i>	Label is not clear, including whether rate is tied to soil type.	Corn, sorghum, soybeans: immediately. Cotton: should be OK following year. Cereal crops (fall- seeded)cereal crops: > 4 mo.	Apply only as preplant, PPI, or PRE (sorghum not emerged). Not labeled for sorghum/sudan. 1% v/v MSO + UAN or AMS (latter if with glyphosate). <b>Must use safened seed.</b> Injures emerged sorghum.
<b>Warrant 3EC</b> <i>acetochlor</i>	Fine: 1.5-2.5 qts. Medium: 1.5-2.25 qts. Coarse: 1.5-2.25 qts.	Corn, cotton, sorghum, and soybeans: immediately. Wheat: 4 mo. Alfalfa: 9 mo.	Apply as either PPI or PRE using given rates to control annual grasses and broadleaves. Only labeled for TX Panhandle, and fine-textured soils of gulf coast and Blacklands. <b>Must use safened seed.</b>

### Post-emergence Use

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>Aim 40DF</b> <i>carfentrazone-ethyl</i>	0.33 oz.	Corn, cotton, sorghum, soybeans: 1 mo. Wheat: immediately.	Apply to small, actively growing weeds. Does not provide good control of palmer amaranth. Provides good control of velvetleaf. Crop leaf burn may occur after treatment. Add NIS @ 0.25 % v/v as a surfactant.
<b>Ally 60DF + 2,4-D amine</b> <i>metsulfuron</i>	1/20 oz. + 0.25 lb a.i. 2,4- D amine	Corn, cotton, sorghum: following season. Wheat: immediately. Other crops: see label.	Supplemental label. Use for broadleaf weed control. Apply when weeds < 6" tall. <b>Do not use with surfactant or crop oil.</b>

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>Clarity 4L</b> <i>diglycolamine salt of dicamba</i>  <b>Banvel</b> also labeled	8 oz.	Corn: immediately. Sorghum: 15 days. Other crops: after harvest.	Apply to sorghum from spike to prior to 15" tall. Use drop nozzles for sorghum >8" tall. Do not apply Clarity in sorghum seed production. Apply to actively growing weeds less than 3" tall. Application may result in leaf rolling or leaning sorghum plants. Plants usually grow out in 10-14 days.
<b>Direx</b> <i>diuron</i>	0.2-0.4 qt.	Corn, cotton: immediate. All other crops: 4 mo. if banded, 6 mo. if broadcast.	Directed sprays only (not over the top). Apply after sorghum is 15" tall. Lower rates for broadleaves up to 2" tall, higher rates on grasses to 2" and broadleaves to 4" tall. Second application possible for lower rates not to exceed 0.4 qt./A. Add surfactant.
<b>Dual Magnum or Cinch 7.64EC</b> <i>s-metolachlor</i>	Fine: 1.33-1.67 pts. Medium: 1.33-1.5 pts. Coarse: 1.0-1.33 pts.	Corn, cotton, sorghum, peanuts, soybean: immediately. Wheat: 4.5 mo.	For POST applications Dual Magnum is safe to emerged grain sorghum (can be applied to emerged crop without safened seed), but no control of emerged weeds. Control of annual grasses, broadleaves and yellow nutsedge. 75 day PHI.
<b>Huskie pyrasulfotole + bromoxynil</b>  Revised label October, 2014.	12.8-16.0 oz.  For all of Texas, Bayer recommends 1 pint Huskie + 1 pint atrazine + 1 lb. AMS+NIS/HSOC.	Corn, sunflower: 9 mo. Cotton: field assay (check label for changes for cotton for 2015), else 18 mo. Sorghum, soybean, millet, alfalfa: 4 mo. Small grains: 1 mo.;	Apply to sorghum 3-leaf to 30" tall or just prior to flag leaf emergence, whichever comes first (no ATZ after 12" tall). Best results on weeds ≤4" tall. Controls many broadleaf weeds including pigweed species. Many tank-mix options. For best control add 1 pt. atrazine. Use <u>AMS at 0.5-1.0 lb./A. &amp; NIS or HSOC</u> . Some leaf burn will occur, but less sorghum injury potential compared to 2,4-D or dicamba. Labelled for seed production, cautious about hay/grazing sorghums. Though not noted on label Bayer staff state that including iron (Fe) may reduce leaf burn.

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
“Inzen” ALS-tolerant grain sorghum system <u>Accent</u> and forthcoming <u>Zest</u> ( <i>nicosulfuron</i> )	***	***	Dupont has not released Inzen ALS tolerant hybrids for 2016. Advanta US’ seed brand ‘Alta’ has one hybrid that is available for demonstration purposes (max. 20 acres) with a stewardship agreement.
<b>Marksman 3.2L</b> <i>dicamba + atrazine</i>	1.5-2.0 pts.	See Clarity and atrazine restrictions.	Apply to sorghum <12” tall. Apply 1.5 pt. rate to redroot pigweed less than 3” tall. Apply 2.0 pt. rate to all other broadleaf weeds. Do not use a surfactant unless a certain amount of crop injury is acceptable.
<b>Paramount 75DF</b> <i>quinclorac</i>	8.0 oz.	Sorghum, wheat: immediately. Alfalfa: 24 mo. Other crops: 10 mo.	Apply to sorghum up to 12” in height. Provides good control of field bindweed. Apply with COC @ 1 qt./A or MSO.
<b>Peak 57WDG</b> <i>prosulfuron</i>	0.5-1.0 oz. Rate depends upon weed species, size and rotational crop.	Corn, sorghum: 1 mo. Cotton, soybean: 18 mo. Sunflowers: 22 mo. Wheat: immediately,	Apply to sorghum between 5 and 30” in height and prior to head emergence. In drier climates, COC is preferred over NIS as an additive. Tank mix with atrazine for improved control of pigweed.
<b>Permit 75WSG</b> <i>halosulfuron</i>	0.67 oz.	Corn: 1 mo. Cotton: 4 mo. Sorghum, wheat: 2 mo. Soybeans: 9 mo.	Apply post emergence to grain sorghum from 2 leaf through layby stage, before head emergence. Provides control of yellow nutsedge, but weak on pigweed. Add NIS @ 0.25% v/v as an additive.
<b>Prowl 3.3EC</b> <b>Pendimax 3.3</b> <i>pendimethalin</i>  <b>Prowl H<sub>2</sub>O</b>	Fine: 3.6 pts. Medium: 2.4 pts. Coarse: 1.8 pts.  Fine: 3.0 pts. Medium: 2.0 pts. Coarse: 1.5 pts.	Corn: next year. Sorghum, 10 mo. (if <20” rain + irrig. 18 months for summer application; delay additional 2 months if fall applied). Small grains, 4 mo. (12 mo. if <12” rain + irrig.). All other crops: next season. Crops labeled for PPI (cotton, etc.) application: immediate.	POST incorporated for grain sorghum 4” tall to last cultivation (lay-by). Do not apply in liquid fertilizer. H <sub>2</sub> O formulation may be applied same as above for spray, but pivot chemigation can apply at 2-3 leaf stage to 30 days before harvest to established grain sorghum.

Trade Name (common name)	Product Rate/Acre (with soil type)*	Major Crop Rotation Restrictions†	General Comments
<b>Starane Ultra</b> <i>fluroxypyr</i>	0.4 pt.	No plant back restrictions for crops listed on the label. All other crops: 120 days.	Apply over-the-top of 3- to 7-leaf sorghum. Drop nozzles may be used for 8-leaf up to boot stage. Good on kochia and morning-glory. Use with NIS. Drift can injure cotton.
<b>Treflan</b> <i>trifluralin</i>	Fine: 1.5-2.0 pts. Medium: 1.0-1.5 pts. Coarse: 0.75-1.0 pt.	Most grass crops: 18 mo. for rainfall <20"; for rainfall >20", 12 mo. (but 14 mo. if fall applied).	Directed or over-the-top spray for 8-24" tall sorghum. Use drop nozzles if foliage prevents soil contact. Cultivate before spraying to remove existing weeds and cover base of sorghum plant with ~1" of soil. Thorough mechanical incorporation of trifluralin within 24 h. Lower rate range for fields with <20" annual rainfall + irrigation. May be chemigated (see label).
<b>Treflan TR-10</b> granular	Fine: 7.5-10.0 lbs. Medium: 5.0-7.5 lbs. Coarse: 4.0-5.0 lbs.		
<b>Yukon</b> <i>halosulfuron + dicamba</i>	4-6 oz.	Follow Clarity restrictions.	Apply from 2-leaf through 15" in height. Use drop nozzles if sorghum is > 8". Use with COC or NIS. Good for nutsedge and volunteer sunflower control.
<b>2,4-D amine 4</b>	0.5-1.0 pt.	Cotton: following year; corn: immediately; sorghum, wheat 0.5 mo.; soybeans: check label.	Apply to sorghum from 6-15" tall. If sorghum >8" tall, use drop nozzles and keep spray off foliage. Do not treat during the boot, flowering, or dough stage as head blasting may occur. Apply to small, actively growing broadleaf weeds. The addition of a surfactant may increase the likelihood of sorghum injury.
<b>2,4-D LV6</b>	0.5 pt.		

Numerous generic brands not mentioned in the table are available.

\*Product rates given for general soil type. **Fine** = silty clay loam, clay loam, sandy clay, silty clay, clay. **Medium** = loam, silt loam, silt, sandy clay loam. **Coarse** = sand, loamy sand, sandy loam.

†For possible crop rotation restrictions to other crops review the label.

## Desiccation, Drying, and Harvest Aids

Herbicide use for drying and desiccation of grain sorghum as a **harvest aid** at or after physiological maturity is more common in Texas than in the past. Label directions state that applications should be made at physiological maturity (seed black layer, seed moisture <30%).

See labels for recommended rates. Check for generics with the same active ingredient that are

also labeled for grain sorghum.

- Drexel Defol (*sodium chlorate*)  
Remarks—Desiccates leaves but does not kill the plant and regrowth may occur.
- Roundup (*glyphosate*)  
Remarks—Kills the plant and lodging is a potential problem if harvest is delayed (7 day post-harvest interval). This has become a popular choice as a late-season weed control option.
- Aim (*carfentrazone*)  
Remarks—Labels emphasizes clean-up of problem weeds rather than crop drydown, 1-2 oz./A. NIS, COC, or AMS recommended.
- Diquat 2L (Aceto) or RowRunner (Rotam), but not Reglone (Syngenta) (*diquat dibromide*),  
Remarks—Only for **seed** hybrid grain sorghum.

## Managing Herbicide-Resistant Weeds

Occasionally, biotypes of weeds may exist that are resistant to specific herbicides. In order to prevent the spread of these resistant biotypes, proper management strategies must be implemented:

- Combine herbicide use with mechanical, cultural, or biological control methods,
- Rotate or mix herbicides with different modes of action within a season.
- Where feasible, rotate crops, which will allow for rotation of herbicides.
- Scout fields regularly, if resistant weeds are suspected, control weed escapes in a timely manner before they produce seed.

## For Ready Online Access to Multiple Chemical Labels:

- Chemical Management Data Systems, <http://www.cdms.net> To use the free database (which also works well on a smart phone) access the webpage then:
  - 1) Starting at the top click 'Label Database'.
  - 2) You then have two options. A) The primary one is to click "Search" then type your brand name in the box then click "Search" again (keep the name simple, for example 'Treflan' rather than 'Treflan HFP' or 'Treflan TR-10' to ensure you return all labels for branded Treflan products). B) You can also click "Manufacturers" then select an individual company to obtain a list of all chemicals that company markets.
  - 3) To search by active ingredient: Like #2A above click on "Search" but instead of entering a brand name, click 'Other Search Options'. You will be prompted to either register for a free Username and Password, or if you have already done so enter your information. Once logged in you can check several options for the type of chemical you want, what kind it is, the target crop, etc.
  - 4) To learn more about how to use CDMS, review "Ready On-Line Access to Chemical Labels for Agricultural Production" at <http://publications.tamu.edu>
- Greenbook, <http://www.greenbook.net>, where your search category includes product name, active ingredient, crop, or pest (registration required).

## Chemical & Worker Safety

Herbicide safety is paramount. For emergency medical treatment information call the emergency number listed on your chemical label, or your local 9-1-1 if you can't get the label. If you have an accident and must

require examination and possible treatment take the chemical label with you. For emergency chemical information for any material, call American Association of Poison Control Centers, (800) 222-1222, [www.poisoncontrol.org](http://www.poisoncontrol.org) Answered 24/7. Enter this number in your phone. Your product label will also have an emergency number, but you might be in no shape to read it if you get chemical in your eyes. Take the label with you if you go for emergency medical care.

**Additional Texas A&M AgriLife Extension weed control expertise may be obtained from the following:**

- Dr. Peter Dotray, Texas A&M AgriLife Extension, Lubbock, (806) 746-6101, [pdotray@ag.tamu.edu](mailto:pdotray@ag.tamu.edu)
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**For additional production information for Texas grain sorghum** view <http://publications.tamu.edu/>, <http://lubbock.tamu.edu/programs/crops/sorghum/>, <http://amarillo.tamu.edu>, <http://varietytesting.tamu.edu/grainsorghum/index.htm>, or your region's pocket grain sorghum production guide (United Sorghum Checkoff Program, prepared by Texas A&M AgriLife), <http://sorghumcheckoff.com/for-farmer/production-tools/>

This publication is no substitute for the herbicide product labels! It is intended to serve only as a guide for controlling weeds in grain sorghum. Because labeled rates and restrictions may change, consult a current product label before use.

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas A&M AgriLife Extension Service is implied.

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