

## 2014-2015 Texas Sunflower Weed Control & Desiccation Guide

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**Sunflower Growth Stages:** For assistance in determining differing sunflower growth stages noted below, consult NSA's summary at <http://www.sunflowernsa.com/growers/growth-stages/>

Information is provided as a general education guide only; and no discrimination is intended or endorsement implied. 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. To readily access chemical labels online at any time, see the information at the end this document.

### Pre-plant and Pre-emergence Broadleaf and Grass Herbicides

Trade Name (common name)	Product Rate per Acre*	Major Crop Rotation Restrictions†	General Comments
<b>Aim</b> <i>carfentrazone-ethyl</i>	See label. Up to 6 oz. per season.	None if crop is on label (includes cotton, corn, grain sorghum, small grains), all others 12 months.	Labeled as pre-plant burndown (including tank mixes). Also labeled for hooded sprayer appl. between rows.
<b>BroadAxe (April 2012)</b> <i>sulfentrazone + s-metolachlor</i>	19 to 38.7 oz. In soils with %organic matter < 1.5: Coarse: 19-21 oz. Medium: 19-25 oz. Fine: 21-30 oz.  For soil pH > 7.2 use lowest rate of labeled range. Plant minimum 1.5" deep with complete closure of seed furrow. Do not apply after sunflower seed germination.	Corn, 10 mo. Cotton, 18 mo. Grain sorghum, 10 mo. Peanuts, 4 mo. Soybeans, anytime Sunflower, anytime Wheat/barley/trit (oats = 12), 4.5 mo.	Incorporate < 2" if no rain/irrigation w/i 7-10 days. Rate depends on pH and soil type. Weed control potentially up to 6-8 weeks. Better as a pre-mix than activity from herbicides applied individually. Partial control under dry conditions, heavy weeds or at <25 oz./A thus consider labeled POST herb. to improve control.
<b>Dual Magnum</b> (not Dual II Magnum) <i>s-metolachlor</i>	All soils <3% O.M. fine- 1.33-1.67 pts. med.-1.33-1.67 pts. coarse-1.00-1.33 pts.	Small grain, 4.5 mos. to following spring Next spring-corn, cotton, peanut, sorghum, soybean	Preplant incorporate 0-14 days before seeding or pre-emerge (PRE).
<b>Eptam 7E</b> <b>Eptam 20G</b> <i>EPTC</i>	fine- 3.0-3.5 pts med.- 2.5-3.0 pts coarse- 2.5 pts fine- 15 lbs med.- 15 lbs coarse- 10 lbs	After harvest.	Apply and incorporate just before planting. Can also apply in fall at higher rates. Can tank-mix 7E with Prowl or Treflan.

Trade Name (common name)	Product Rate per Acre*	Major Crop Rotation Restrictions†	General Comments
<b>Micro-Tech</b> <i>alachlor</i>	Incorporated: fine- 3.5-4.0 pts. med.-3.0-3.5 pts. coarse-2.5 pts. Rates slightly lower if surface applied PRE.	Could not clearly identify rotational crop restrictions on the label (Preliminary)	Preplant incorporate 0-7 days before seeding or pre- emerge (PRE). Will not control emerged weeds.
<b>Prowl 3.3EC</b> <b>Pendimax 3.3</b>  <b>Prowl H<sub>2</sub>O</b> <i>pendimethalin</i>	fine- 2.4-3.6 pts med.- 1.8-3.6 pts coarse- 1.2-2.4 pts  fine 3.0 pts med- 2.0 pts coarse 1.5 pts Up to 3.0 on all soil types for no-till fields	Corn, sorghum - following year; soybeans - immediately; wheat - 4 mos	Apply in spring 0-60 days prior to planting and incorporate within 7 days. Plant at a minimum of 1.5- 2.0" deep. See label for additional timing instructions for season and tillage practice.
<b>Sonalan HFP</b>  <b>Sonalan 10G</b> <i>ethalfluralin</i>	fine- 2.5-3.0 pts med.- 2.0-2.5 pts coarse- 1.5-2.0 pts fine- 9.5-11.5 lbs med.- 7.5-9.5 lbs coarse- 5.5-7.5 lbs	Most crops - next season. Refer to label.	Apply preplant 0-21 days prior to planting. Incorporate within 2 days. For no-till, granules are preferred.
<b>Spartan 4F</b> <i>sulfentrazone</i>	<1.5% organic matter, fine- 3.75-5.25 oz med.- 3.0-4.5 oz coarse- 3.0-3.75 oz 1.5-3.0% organic matter fine- 4.5-6.75 oz med.- 3.75-6.0 oz coarse- 3.0-4.5 oz >3.0% organic matter fine- 6.0-8.0 oz med.- 4.5-6.75 oz coarse- 3.75-6.0 oz	Cotton - 18 months Small grains – 4 months Corn, sorghum – 10 mos. Refer to label.	Apply preplant 0-21 days prior to planting, or up to 3 days after planting. For PPI do not exceed 2" deep. If soil pH > 7 use lower range of labeled rate. **Coarse, sandy soils— apply at least 7-14 (preferably ≥ 14 days before planting). Adverse crop response may occur for coarse soils with OM < 1.5% and soil pH > 7.8—reduce rates, esp. if caliche or eroded soils.
<b>Spartan Charge</b> <i>Sulfentrazone</i> <i>+carfentrazone-ethyl</i>	<1.5% organic matter, fine- 5.0-6.5 oz med.- 3.75-5.75 oz coarse- 3.75-5.0 oz 1.5-3.0% organic matter fine- 5.75-8.5 oz med.- 5.0-7.75 oz coarse- 3.75-5.75 oz >3.0% organic matter fine- 7.75-10.2 oz med.- 5.75-8.5 oz coarse- 5.0-7.75 oz	Corn, 4 months Cotton - 12 months Sorghum, 10 months Soybean, anytime Sunflower, anytime All small grains, 4 months	Apply preplant to 3 days after planting. Plant ≥ 1" to avoid injury. If soil pH > 7 use lower rate range. Adverse crop response may occur for coarse soils with OM < 1.5% and soil pH > 7.8—reduce rates, esp. if caliche or eroded soils. Best control req. 0.5-1.0" of rain/irrigation 7 to 10 days after planting.

Trade Name (common name)	Product Rate per Acre*	Major Crop Rotation Restrictions†	General Comments
<b>Treflan HFP</b>	fine- 1.5-2.0 pts med.- 1.25-1.5 pts coarse- 1.0 pt	Most grass crops - 18 mos.	Apply as fall or spring preplant. Incorporate immediately. Prefer granular for heavy residue.
<b>Treflan TR-10</b> <i>trifluralin</i>	fine- 7.5-10.0 lbs med.- 6.25-7.5 lbs coarse- 5.0 lbs		

\*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.

### Additional Pre-plant and Burndown Herbicides

In addition to the pre-emerge herbicides above several other herbicides are labeled for pre-plant burn down applications in sunflower including:

- Glyphosate
- Paraquat dichloride
- Flumioxazin (Valor, Chateau—application a minimum 30 days at 2 oz./A prior to planting)
- Pelargonic acid (Scythe)

Assert (imazamethabenz) is labeled for sunflower in the Northern Plains (MN, ND, SD—mustard control), but is not currently labeled in Texas.

### Postemergence Broadleaf & Grass Herbicides

Trade Name (common name)	Product Rate per Acre*	Major Crop Rotation Restrictions†	General Comments
<b>Beyond</b> only for imi-tolerant Clearfield or Clearfield Plus sunflower (supplemental label) <i>imazamox</i>	4 oz. NIS and N fertilizer required for application. Clearfield Plus hybrids allow replacement of NIS with stronger COC or MSO but there is no change in rate or timing of Beyond.	Clearfield crops, soybean—anytime. Wheat – 3 mos. Other small grains, 4-18 mos. Corn, grain sorghum, cotton, peanut – 9 mos.	Apply at 2-8 true leaf stage (V2-V8), e.g. within ~3 weeks of planting. Apply for broadleaves ≤3” and grasses ≤4-5 leaves. Label recommends that grass herbicide such as pendimethalin be used before Beyond
<b>Express</b> only for DuPont ExpressSun tolerant sunflower (Pioneer, Croplan, Seeds2000) <i>tribenuron methyl</i>	0.25-0.50 oz. 1% methylated crop oil. Maximum 1.0 oz./A if more than one application (minimum 14 days apart).	Express tolerant crops anytime. Wheat, barley, triticale-anytime. Corn, grain sorghum, cotton, soybean – 14 days. Most other crops, 45 days.	Temporary yellowing may occur after application. Apply when sunflower is 2-leaf stage to just prior to bud initiation (R-1, may be up to ~40 days after planting if growth is slow). Minimum 70 days interval to harvest.

## Postemergence Grass Herbicides

Trade Name (common name)	Product Rate per Acre	Major Crop Rotation Restrictions†	General Comments
<b>Assure II</b> <b>Targa</b> <i>quizalofop-P-ethyl</i>	5-12 oz. 1 qt. NIS	Small grain, cotton, soybean—immediate; corn & sorghum, 120 days.	60 day PHI. Best applied when most grasses are 2-6 inches tall.
<b>Poast</b> (Not Poast Plus) <i>sethoxydim</i>	Up to 2.5 pts./A in one application, max. 2.5 pts//A season long + 1.0 qt COC	No restrictions.	Apply to actively growing grasses at sizes and rates specified in label. Sun- flowers are tolerant to Poast at all stages. Do not apply within 70 days of harvest.
<b>Select 2EC</b> <b>Prism, Arrow 2EC</b> <b>Intensity One</b>  <b>Select Max</b> <i>clethodim</i>	6.0-16.0 fluid ounces/A + 1.0 qt COC + 1-2 qts./A AMS  Annual grasses, 9-16 oz./A Perennial grasses, 12-32 oz/A; NIS, 0.25% or COC/MSO at 1 qt/A See label for reduced rates when treating small annual grasses.	No restrictions.	Apply to actively growing grasses at sizes and rates specified in label. Sun- flowers are tolerant to clethodim at all stages. Do not apply within 70 days of harvest. AMS gives improved grass control for johnsongrass, other grasses. Labeled for application with Asana or Warrior T insecticide.

## Desiccation, Drying, and Harvest Aids

Herbicide use for drying and desiccation of sunflower 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 (R-9, back of head lemon yellow and bracts turning brown) with seed moisture <35% and at least 7 days before harvest, nor should applications be made to seed sunflowers.

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

- Drexel Defol (*sodium chlorate*)
  - When to Apply—Backside of sunflower heads are yellow and bracts turning brown; seed moisture content below 35%.
  - Remarks—For use on confection and oil-type varieties. Thorough coverage of plant is essential. Apply aerially at five to 10 gpa, or at 20 to 30 gpa by ground sprayer.
- Gramoxone Inteon (*paraquat*)
  - When to Apply—Backside of sunflower heads are yellow and bracts turning brown; seed moisture content below 35%.
  - Remarks—For use on confection and oil-type varieties. Apply with NIS. Randomly sample 10 average heads for seed moisture. Allow a seven day post-harvest interval.
- Roundup (*glyphosate*)
  - When to Apply—Backside of sunflower heads are yellow and bracts turning brown; seed moisture content is less than 35%.

- Remarks—This is registered for late season weed control but functions like a desiccant.
- Sharpen (Kixor, *saflufenacil*), Additional information at <http://www.sunflowernsa.com/media/news/details.asp?NewsID=229>
  - When to Apply—When sunflower seed moisture is 36 percent or less.
  - Remarks—For optimum desiccation an adjuvant must be used such as methylated seed oil and a ammonium nitrogen-based adjuvant for best burndown (see main Sharpen label for rates). Sharpen can be tank mixed with one or more labeled herbicides such as glyphosate. Apply at least seven days prior to harvest. This is not a restricted use pesticide.
  - Unlike other desiccants, saflufenacil has crop rotation restrictions that could affect double cropping after sunflower. However, for late season applications at the single application rate of 2 fluid ounces per acre, all rotation restrictions are 5 months or less (3 months for cotton) for the subsequent year.

### **For ready online access to multiple chemical labels:**

- Chemical Management Data Systems, <http://www.cdms.net> To use the free database, log in then: 1) click ‘Services’ then ‘Labels/MSDS,’ 2) enter the desired product name in the search box (keep the name simple, for example ‘Prowl’ rather than ‘Prowl H<sub>2</sub>O’ to ensure you return all labels for Prowl products), 3) select the label of your choice, then 4) choose the main label or any supplemental labels you might need. You may also search by active ingredient (Click ‘Services’ then ‘Other search options,’ register with CDMS to search by crop, active ingredient, chemical type, state, etc.). This URL works well on a smart phone.
- 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 [Is there a good national toll free number?](#)

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

- Dr. Paul Baumann, Texas A&M AgriLife Extension Service, College Station, (979) 845-4880, [p-baumann@tamu.edu](mailto:p-baumann@tamu.edu)
- Mr. James Grichar, Texas A&M AgriLife Research, Beeville, (361) 358-6390, [w-grichar@tamu.edu](mailto:w-grichar@tamu.edu)

For additional production information for Texas sunflower view <http://lubbock.tamu.edu/programs/crops/sunflowers/> and beginning in late 2014, <http://sunflower.tamu.edu>

**This publication is no substitute for the herbicide product labels! It is intended to serve only as a guide for controlling weeds in sunflower. 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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