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## EC88-130 A 1988 Guide for ... Herbicide Use in Nebraska

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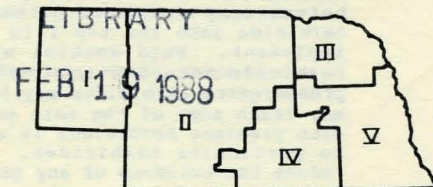
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# A 1988 GUIDE FOR--- HERBICIDE USE IN NEBRASKA...

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RESTRICTED USE HERBICIDES...Tordon, Gramoxone, Bladex, and Hoelon are restricted use herbicides. Other herbicides or some of their uses may be classified as restricted use at some future date. The label will indicate if a product is restricted use. Only certified private or commercial applicators should apply or supervise the application of restricted use herbicides. See your County Extension Agent if you need to be certified.



"Use Crop Production  
Chemicals Wisely"

- READ THE LABEL BEFORE EACH USE.
- APPLY ONLY AS DIRECTED.
- STORE IN ORIGINAL LABELED CONTAINERS.
- ELIMINATE HAZARDS FROM CONTAINERS BY RINSING AND PROPER DISPOSAL.
- DO NOT USE 2,4-D ESTER, BANVEL (DICAMBA), COMMAND, AND SIMILAR HERBICIDES NEAR VEGETABLES, ORNAMENTALS, TREES, SHRUBS, AND BROADLEAF CROPS.

This circular deals principally with herbicides as an aid for crop production. The suggestions for use are based on results at Nebraska research stations and elsewhere. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

Genetic strains, varieties, and hybrids vary in their response to herbicides. Check with your seed dealer for information on the crop you plan to treat.



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## HERBICIDE APPLICATIONS

### Soil Applied

**Early preplant (EPP)** treatments are made 10-30 days before planting. **Preplant surface applied (PPSA)** treatments are made 0-10 days before planting. Soil disturbance by some planters may allow weed growth in row where herbicides are applied PPSA or EPP. **Preplant incorporated (PPI)** treatments are made before planting the crop. Thoroughly incorporate with rototiller or two passes of a tandem disc, field cultivator or similar equipment. **Preemergence (PRE)** treatments are applied from planting time to just before crop emergence or weed seed germination. **Surface mix** is the shallow mixing of a preemergence herbicide into the top 1 to 2" of soil using a rototiller, mulch treader, field cultivator or similar implement. Weed control with preemergence treatments may be poor if there is no rain to move the herbicide into the top inch. To overcome dependence on rainfall and to increase dependability, some preemergence herbicides may be incorporated into the surface soil with a rotary hoe. Excessive rainfall may leach some of the more soluble herbicides into the subsoil, especially on sandy soils. Weed control with preplant herbicides is more satisfactory on surface-planted crops. Some weed species are resistant to particular herbicides. Herbicides should be rotated to control a wider spectrum of weeds and to reduce the build-up of any particular herbicide in the soil.

### Postemergence

**Early post** refers to herbicide applications made soon after the crop has emerged; control of emerged weeds may be reduced. **Postemergence (POST)** treatments are applied after emergence of weeds or crop.

**Layby** treatments are applied at last cultivation to provide an extended period of weed control.

**Harvest aid** treatments are applied late in the growing season to reduce weed seed production and make harvest easier.

**Desiccants** are applied after crop maturity to hasten drying and permit earlier harvest.

Excellent growing conditions make weeds more susceptible to postemergence herbicides. Likewise, crops may be more subject to herbicide damage when growing rapidly. **Adjust herbicide dosages downward** when excellent conditions for growth are present the week before application and **upward** when ideal growth is limited by one or more factors. Rate of carrier should be in accordance with label recommendations.

## CONSERVATION TILLAGE SYSTEMS

### No-Till

Early preplant treatments generally provide the most satisfactory weed control. This involves applying residual herbicides 10 to 30 days prior to planting. The objective is to apply the herbicide prior to the germination of summer annual weeds, especially grasses. This may eliminate the need for a nonselective herbicide like Gramoxone or Roundup. It is important to use treatments with adequate residual control. A split herbicide application with a portion applied early preplant and a second increment at planting can be used. This could be helpful with short residual materials or where heavy rains or delayed planting occurs following the first treatment. Early preplant treatments, properly designed, can often provide consistent weed control at lower cost than planting time treatments. Soil disturbance by planter following a preplant treatment may allow weed growth in the row.

**Planting time** treatments of a preemergence herbicide are made at or immediately after planting. When established weeds are present a postemergence herbicide is combined with the preemergence herbicide. Atrazine, Bladex, Conquest, Extrazine, Gramoxone, Roundup or Bronco will control established broadleaf weeds, grasses or volunteer wheat depending on plant height. If grasses are less than 3" tall, atrazine, Bladex, Conquest and Extrazine will provide acceptable control. Control is improved when crop oil concentrate or 28% nitrogen are added. In corn, 2,4-D ester may also be added for improved weed control. Gramoxone should be applied with X-77 to grasses less than 4" tall. Gramoxone is more effective when applied with a residual herbicide and in  $\frac{3}{4}$  to 5 gal/A spray solution. If grasses are taller than 4" and are growing vigorously, apply Roundup<sup>1</sup> at 1 pt/A. Do not mix Roundup with other herbicides. Kill volunteer wheat and annual bromes in April to prevent soil moisture loss.

### Ridge Planting

With the ridge plant system the row has fewer weeds because the weed seed produced the preceding year is not worked into the soil when the seedbed is prepared. During planting, sweeps or discs move soil containing kernels and ears, sorghum seed and/or heads, and most weed seed from the ridge. A banded herbicide treatment should be used at planting time in the row. If timely cultivation is not possible, weed pressure is heavy, or the field contains many hard to control weeds like velvetleaf, a broadcast herbicide treatment at planting time may be necessary.

Select the herbicide treatment from the preemergence treatments of soil applied herbicides. Herbicides, such as atrazine, Bladex, or 2,4-D can be applied in early April prior to planting to keep early summer annual weeds under control. The rate of atrazine used depends on future crops that will be planted.

The early herbicide treatment should eliminate planting through 4-inch or taller weed growth. Weeds like kochia and Russian thistle are troublesome if not killed. The trouble arises along the cutting edge of the planter sweep, where larger broadleaf weeds may not be uprooted or covered. Most early germinating broadleaf weeds can be controlled effectively and economically with 2,4-D. It is better to apply the 2,4-D at planting time from a spray boom on the front end or underbelly of the tractor rather than after planting. If considerable grass weed growth is present before planting, Gramoxone or Roundup should be used. Another option would be to preplant cultivate for row-middle tillage, leaving ridge top weed removal to the planter sweep. This works extremely well on fields where corn was ensiled. Preplant cultivation also allows for rebuilding ridges, which may be desirable if they have been damaged by harvest equipment or livestock tramping.

## Ecofarming

Ecofarming is a system which controls weeds after wheat harvest and throughout the fallow period by using herbicides and/or tillage with minimum disturbance of crop residues and soils. For a more detailed discussion see page 17.



Certain herbicides can persist in the soil to the extent that rotational crops may be injured. The potential for herbicide carryover increases as one goes westward in Nebraska. Lower rainfall and low soil organic matter increases carryover potential. Herbicide carryover potential is greater on eroded soils and soils with pH greater than 6.8. Carryover is also a function of application accuracy. Carryover will be more apparent in headlands and other areas where sprayer overlap is common. Herbicide applications made late in the season have greater carryover potential compared to earlier applications.

Carryover can restrict crop rotation options as well as limit replant options if a crop is lost due to hail or other disasters. Care should be taken when choosing herbicides to fit your rotation sequence. The following is a partial list of herbicides which have demonstrated carryover potential in Nebraska.

1. Atrazine, AAtrex
2. Atrazine prepacks: Bicep, Conquest, Extrazine, Lariat, Marksman, Prozine, Rhino, Sutazine
3. Princep
4. Command, Commence
5. Scepter, Squadron, Partner
6. Classic, Preview, Lorox Plus
7. Glean
8. Tordon
9. Treflan, Sonalan, Prowl

Consult herbicide labels for rotation intervals and restrictions. Conducting a plant bioassay can be helpful in determining whether carryover will be a problem in your fields. Additional information on conducting bioassays can be obtained in the NebGuide entitled "A Quick Test for Atrazine Carryover", G74-113.

## MINIMIZING GROUNDWATER CONTAMINATION

Pesticide contamination of groundwater is a public concern. Spills and other mishaps which occur during the handling and mixing of pesticides are a major contributing factor. There are several steps we can take to minimize contamination.

Mix pesticides away from wells and other water sources. Many wells are not adequately sealed which increases the risk of contamination in the event of a spill. Using a nurse-tank as a water source helps avoid this problem.

Prevent back-siphoning into the well. Keep the end of the hose above the water level at all times. Anti-backflow devices for hoses can be purchased from irrigation and spray equipment suppliers.

Clean up spills, especially near wells and other water supplies.

Triple-rinse and dispose of pesticide containers and excess pesticides properly.

For help in chemical emergencies involving spills, leaks, fires or exposure, phone 800-424-9300 day or night.

Additional suggestions include following label directions, proper calibration, integrated pest control approaches (rotation, banding, etc.), and using short residual pesticides. It is also helpful to identify high risk areas such as sandy soils low in clay and organic matter, high pH soils, and areas where the water table is near the soil surface.

## MIXING HERBICIDES

Most herbicide labels give mixing sequences for tank mix combinations. If directions are not given, follow these steps:

- (1) Add approximately one-half of the needed water to the tank.
- (2) If called for, add surfactants, wetting agents, fertilizer, or other additives except crop oil.
- (3) Add flowables, dry flowables, or wettable powders and agitate.
- (4) If needed, add emulsifiable concentrates or crop oils and agitate. Don't over agitate.
- (5) Finish filling tank with water and continue agitation.
- (6) Apply as soon as possible after mixing. Avoid holding overnight whenever possible.

Sprayers should provide good agitation of spray solution and be equipped with appropriate strainers and screens to avoid nozzle clogging.

## CLEANING THE SPRAYER

First rinse the sprayer with a material which acts as a solvent for the herbicide. Kerosene and fuel oils carry away oil-soluble herbicides such as 2,4-D ester. Chemicals which form emulsions when mixed with water are oil-soluble. After the oil rinse, a rinse with water containing detergent will help remove the oil. Oil-soluble herbicides are the most difficult to remove. 2,4-D amine salts are water-soluble.

For most water-soluble herbicides repeated rinsing with water is usually enough. Hormone type require extra precautions. If 2,4,5-T, silvex, Banvel or 2,4-D were used, fill the tank with water and ammonia. Add 1 quart of household ammonia to 25 gallons of water. Pump enough solution through the hose and nozzles to fill these parts completely. Then fill these parts completely. Then fill the tank, close and leave for 24 hours before rinsing thoroughly with water.

Activated charcoal can be used after the preliminary rinsing to decontaminate the sprayer. A 3% suspension absorbs the 2,4-D. Agitate the suspension for 2 to 3 minutes and drain, then rinse thoroughly with clear water.

For wettable powder herbicides, see that none of the powder remains in the tank. A thorough rinsing with water is usually sufficient. Thoroughly clean all equipment immediately after use.

### Clean-Cleanup Procedure

- 1) Drain tank, then flush tank, boom and hoses with clean water for a minimum of 10 minutes.
- 2) Fill the tank with clean water, then add 1/2 gallon chlorine bleach (containing 5 1/4% sodium hypochlorite) per 100 gallons of water. Flush through boom and hoses, allow to sit for 15 minutes with agitation, then drain.
- 3) Repeat Step 2.
- 4) Nozzles and screens should be removed and cleaned separately. To remove traces of chlorine bleach, rinse the tank thoroughly with clean water and flush through hoses and boom.



## WEED RESPONSE TO SELECTED HERBICIDES

### Field Corn, Popcorn\* and Sweetcorn\*\*

Plant response may be altered by growing conditions, genetic variation in crops and weeds, soil type, pH, organic matter and rates of application. Ratings may vary from season to season and geographical areas within the state. Ratings apply when herbicides are used as suggested in this publication.

See pages 30-36 for additional problem weeds and their control.

#### Response Ratings:

Ratings are for light to moderate weed populations and favorable conditions. High weed populations or adverse conditions will reduce control.

E = Excellent (90-100%)

G = Good (75-90%)

F = Fair (50-75%)

P = Poor (0-50%)

#### Herbicide

Soil Applied Herbicides																						
AAtrex/Atrazine*,**	E	G	E	G	F	P	G	E	E	E	E	E	E	F	P	E	E	E	E	E	6-24	
Bicep or Dual + AAtrex*,**	G	E	E	F	G	G	E	G	E	E	E	E	E	G	F	P	G	G	G	G	E	6-18
Bladex	E	G	E	G	G	F	G	E	E	E	F	E	E	F	P	E	G	F	E	G	2-4	
Bladex + Atrazine or Extrazine/Conquest*,**	E	G	E	G	G	F	G	E	E	E	G	E	E	F	P	E	G	G	E	G	6-18	
Dual*,**	P	E	G	P	E	E	P	P	G	G	F	P	F	P	P	P	P	P	E	G	2-5	
Dual + Atrazine + Sencor	G	E	E	F	G	G	E	F	G	E	E	E	E	G	F	P	G	G	G	G	6-12	
Dual + Bladex	G	E	E	F	E	E	E	F	E	G	G	E	E	G	F	P	G	F	F	G	2-5	
Dual + Bladex + Sencor	G	E	E	F	E	E	E	F	G	G	G	E	E	G	F	P	G	F	F	G	2-5	
Eradicane/Eradicane Extra*,**	G	E	E	P	E	E	E	P	F	G	G	F	P	G	G	P	P	P	F	G	1-2	
Eradicane/Eradicane Extra + Atrazine*,**	G	E	E	F	E	E	E	G	E	E	E	G	G	G	G	G	G	G	G	E	6-18	
Eradicane/Eradicane Extra + Bladex*	G	E	E	F	E	E	E	G	E	E	G	G	G	G	G	G	F	F	G	G	2-4	
Lasso*,**	P	E	G	P	E	E	E	P	P	G	G	F	P	F	P	P	P	P	E	E	2-4	
Lariat/Lasso + Atrazine*,**	G	E	E	F	G	G	E	F	E	E	E	E	G	F	P	G	G	G	G	E	6-18	
Lasso or Dual + (Atrazine + Bladex) or Extrazine or Conquest	G	E	E	F	E	E	E	F	E	E	E	E	G	F	P	G	G	G	G	G	6-12	
Lasso + Atrazine + Sencor	G	E	E	F	G	G	E	F	G	E	E	E	E	G	F	P	G	G	G	G	6-12	
Lasso + Bladex*	G	E	E	F	E	E	E	F	E	G	G	E	E	G	F	P	G	F	F	G	2-4	
Lasso + Bladex + Sencor	G	E	E	F	E	E	E	F	G	G	G	E	E	G	F	P	G	F	G	G	2-5	
Prowl + Atrazine	G	E	G	F	E	E	E	F	E	E	E	E	E	G	G	F	P	G	G	G	6-18	
Prowl + Bladex	G	E	G	F	E	E	E	F	E	E	E	E	E	G	G	F	P	G	F	F	4-12	
Sutan+/Genate+*,**	F	E	G	P	E	E	E	P	P	G	F	F	P	G	G	P	P	P	F	E	1-2	
Sutan+ + Atrazine*	G	E	E	F	E	E	E	G	E	E	E	E	G	G	G	G	G	G	G	E	6-18	
Sutan+ + (Atrazine + Bladex) or Extrazine*	G	E	G	P	E	E	E	G	E	E	E	E	G	G	G	G	G	G	F	G	6-18	
Sutan+ + Bladex*	F	E	G	P	E	E	E	G	E	E	E	E	G	G	G	G	G	F	F	G	2-4	
Sutazine+ or Rhino*,**	G	E	E	F	E	E	E	G	E	E	E	E	G	G	G	G	G	G	G	E	6-18	

#### Postemergence Herbicides

AAtrex/Atrazine + crop oil*,**	E	F	E	E	F	P	G	E	E	E	E	E	F	F	P	E	E	E	E	G	6-18
Banvel	E	P	G	E	P	P	P	F	G	G	G	G	E	P	P	E	E	E	E	G	1-2
Laddok*,**	G	P	G	E	P	P	P	E	G	G	G	E	P	P	P	E	E	E	E	E	2-6
Bladex	G	F	E	G	G	F	G	E	E	E	G	E	F	F	P	E	G	G	G	F	2
Buctril/Brominal ME4*	E	P	E	E	P	P	P	E	G	G	G	E	G	P	P	E	E	E	E	E	0
Extrazine or Conquest*,**	G	F	E	E	G	F	G	E	E	E	E	E	F	F	P	E	G	E	E	G	6-12
Marksman	E	P	E	E	P	P	P	G	G	E	E	E	E	G	P	P	E	E	E	E	2-6
Tandem + Atrazine + COC	E	G	E	E	F	F	G	E	E	E	E	E	E	F	G	P	E	E	E	E	6-18
2,4-D**	E	P	G	E	P	P	P	G	G	G	G	G	E	P	P	F	G	G	P	F	1
2,4-D + Banvel	E	P	E	E	P	P	P	F	G	G	G	G	E	P	P	E	G	G	E	G	1-2

<sup>a</sup>Crop varieties vary in their response to herbicides.

<sup>b</sup>The lower number applied to eastern Nebraska, the large number to western Nebraska. Values will vary with soil and rainfall or irrigation. For more information see "Herbicide Carryover", G83-637.

\*Registered for popcorn.

\*\*Registered for sweet corn.

\*\*\*Kochia in some areas has developed resistance to atrazine, Bladex and other triazines.

### CORN

#### No-Till

Commercial product per Acre				Application Time	Remarks and Approximate Cost/A Broadcast
Sandy Loam	Silt Loam	Silty-Clay Loam			
Herbicide	<1 % OM	1 -2 % OM	>2 % OM		
<u>Corn, No-Till in Cool-Season Grass Sod</u>					
AAtrex/Atrazine 4L + Gramoxone Super <sup>1</sup>	2 qt + 1.5-2.5 pt	2.4 qt + 1.5-2.5 pt	3 qt + 1.5-2.5 pt	Apply in fall or to new growth in May before corn growth	Weak on warm-season perennial grasses. Cost: \$11.70-\$20.10
<u>Corn, No-Till in Alfalfa Sod</u>					
2,4-D + Banvel followed by: appropriate herbicide at planting	1 qt + 0.5 pt	1 qt + 0.5 pt	1 qt + 0.5 pt	Apply in fall or Apr-May to alfalfa with 4" new growth	2,4-D + Banvel used to kill alfalfa. On sandy soils don't plant corn for 10 days. Cost: \$8.35.



Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam <1 % OM	Silt Loam 1-2 % OM	Silty-Clay Loam >2 % OM		

**Corn, No-Till in Rye or Winter Wheat**

AAtrex 4L	2 qt	2.4 qt	3 qt	Apply when rye and wheat are more than 4"-10" and before corn emerges	Cost: AAtrex + Gramoxone \$11.70-\$20.10; AAtrex + Bronco \$26.00-\$34.85; Atrazine + Bladex + Gramoxone \$13.55-\$28.10.
+ Gramoxone Super <sup>1</sup>	1.5-2.5 pt	1.5-2.5 pt	1.5-2.5 pt		
AAtrex 4L	1.2 qt	1.4 qt	1.6 qt		
+ Bronco	3 qt	4 qt	4.5 qt		
Atrazine 4L	0.5 qt	0.75 qt	1-1.25 qt		
+ Bladex 4L	1.25 qt	1.75 qt	2.5-2.75 qt		
+ Gramoxone Super <sup>1</sup>	1.5-2.5 pt	1.5-2.5 pt	1.5-2.5 pt		

**Corn, No-Till Continuous Row Crop<sup>2</sup>**

AAtrex/Atrazine 4L	2 qt	2.4 qt	3 qt	0-15 days preplant; for 16-30 days preplant in- crease rates 20%	Add 0.5-1 pt of 2,4-D LV ester or 0.5 pt Banvel to control broadleaf weeds. Emerged grass weeds under 1.5 inches are normally controlled with full rates of atrazine or Bladex. Add 1.5-2.5 pt Gramoxone Super <sup>1</sup> to control larger emerged grass. For volunteer corn use Roundup <sup>1</sup> at 0.75-1 pt/A in 5 gpa water before crop emergence. Cost w/o Gram- oxone Super: \$4.80-\$7.20; Bicep \$12.95-\$17.30; Dual + Atrazine \$13.00-\$17.80; Bladex + Atrazine \$6.50- \$13.30; Lariat \$15.00-\$18.65; Extrazine/Conquest + Dual \$11.35-\$23.50; Atrazine + Bladex + Dual \$12.00-\$23.40
Bicep 6L	2.0 qt	2.4 qt	3 qt		
AAtrex/Atrazine 4L + Dual 8E	1.4 qt + 1.5 pt	1.6 qt + 1.75 pt	1.8 qt + 2 pt		
AAtrex/Atrazine 4L + Bladex 4L	0.75 qt + 0.75 qt	1.4 qt + 1.4 qt	2 qt + 2 qt	0-30 days	
AAtrex/Atrazine 4L + Lasso 4EC	1.2 qt + 2.25 qt	1.6 qt + 2.5 qt	2 qt + 2.75 qt		
Lariat	3.5 qt	3.75 qt	4.25 qt		
Extrazine/Conquest + Dual	1.5 qt + 1.5 pt	2.75 qt + 1.75 pt	4.0 qt + 2 pt	0-30 days preplant. On sand use at least 14 days preplant.	
AAtrex 4L + Bladex 4L + Dual	0.5 qt + 1.0 qt + 1.5 pt	0.75 qt + 1.5 qt + 1.75 pt	1 qt + 2 qt + 2 pt		

**FIELD CORN, POPCORN \*, SWEETCORN \*\* Tilled Seedbed**

Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam <1 % OM	Silt Loam 1-2 % OM	Silty-Clay Loam >2 % OM	
*,**AATREX/ATRAZINE 4L	2 qt	2.4 qt	3 qt	EPP**, PPSA, PPI, PRE, SURFACE MIX, SPRINKLER or EARLY POST...May affect sensitive crops the following year especially on high pH soils. Can be used at layby. Cost: \$4.80-\$7.20.
*,**BICEP 6L (3.33 lbs Dual plus 2.67 lbs AAtrex/gal)	1.5 qt	1.8 qt	2.4 qt	EPP**, PPSA, PRE, SURFACE MIX, SPRINKLER, EARLY POST or LAYBY... Cost: \$10.80-\$17.33.
BLADEX 4L	Do not use	2.5 qt	3.25 qt	PPSA, PRE, SURFACE MIX, 4L SPRINKLER or 80W EARLY POST...Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$11.75-\$15.30.
BLADEX 4L and ATRAZINE 4L	0.75-1.25 qt +	2 qt +	2.5 qt +	PPSA, PRE, SURFACE MIX, SPRINKLER, or 80W EARLY POST...Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Carryover could affect some crops. Cost: \$6.40-\$12.00.
*,**CONQUEST 4L (3 lbs Bladex plus 1 lb Atrazine)	1.5 qt	2.75 qt	3.75 qt	
EXTRAZINE 4L (2.7 lbs Bladex plus 1.3 lbs Atrazine)	1.5 qt	2.75 qt	3.75 qt	
*,**DUAL 8E or *,**DUAL 25G	0.75 qt or 6 lb	1.25 qt or 10 lb	1.5 qt or 12 lb	EPP**, PPSA, PRE, SURFACE MIX, or LAYBY ...Dual and Dual + AAtrex may be applied through sprinkler systems or early post. Injury may occur with Dual + Bladex on soils that are calcareous, sandy or below 1% organic matter. Cost: Dual \$9.40-\$18.75; Dual + AAtrex \$10.50- \$16.25; Dual + Bladex \$13.00-\$21.90.
*,**DUAL 8E with *,**AATREX 4L or with BLADEX 4L	0.67 qt + 1 qt or 0.75-1 qt	0.75 qt + 1.25 qt or 1.75 qt	1 qt + 1.67 qt or 2-2.3 qt	



# **FIELD CORN, POPCORN \*, SWEETCORN \*\*** **Tilled Seedbed (continued)**

Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam <1 % OM	Silt Loam 1-2 % OM	Silty-Clay Loam >2 % OM	
DUAL 8E with ATRAZINE 4L and BLADEX 4L	1.3 pt + 1 pt + 1 pt	1.5 pt + 1 pt + 2 pt	2 pt + 1.25 pt + 2.5 pt	PPSA or PRE...3-way mix. Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$11.95-\$19.85.
DUAL 8E + SENCOR/LEXONE DF with ATRAZINE 4L or with BLADEX 4L	Do not use	1.5 pt + 0.33 lb + 1.5-3 pt or 2.5 pt	2 pt + 0.33 lb + 1.5-3 pt or 3 pt	PRE...3-way mix. Do not use on sandy soils or soils containing less than 2% organic matter. Do not use on calcareous soils or soils with a pH of 7.0 or greater. Cost: Dual + Sencor + Atrazine \$17.45-\$22.25; Dual + Sencor + Bladex \$21.60-\$25.85.
*,**ERADICANE 6.7E	4.75 pt	5 pt	5 pt	PPI or SPRINKLER BEFORE WEED SEED GERMINATION...Apply PPI treatments to dry surface soil and immediately incorporate by cross tandem discing or similar soil mixing. Injury may occur with Bladex on soils that are calcareous, sandy or below 1% organic matter. See page 34 for shattercane control. Repeated use of Eradicane or Eradicane Extra will lead to reduced weed control. Consider crop rotations. Cost: Eradicane \$12.25; Eradicane Extra + Atrazine \$15.10-\$17.10; Eradicane Extra + Bladex \$17.50-\$21.50.
*,**ERADICANE EXTRA	5.25 pt	5.3 pt	5.5 pt	
*,**ERADICANE 6.7E or *,**ERADICANE EXTRA	4.75 pt or 5.25 pt	4.75 pt or 5.3 pt	4.75 pt or 5.5 pt	
*,**ATRAZINE 4L or BLADEX 4L	2 pt or 2 pt	2.4 pt or 3.2 pt	3.2 pt or 4 pt	
EXTRAZINE 4L/CONQUEST 4L + DUAL 8E or LASSO 4EC	1.25 qt + 1.3 pt or 2 qt	1.75 qt + 1.75 pt or 2 qt	2.25 qt + 2 pt or 2 qt	
*,**LASSO 4EC or *,**LASSO II 15G	3 qt	2.5 qt or 17 lb	3 qt or 20 lb	PPSA, PRE, or SURFACE MIX Cost: \$12.30-\$15.00
*,**LASSO 4EC + *,**AATREX/ATRAZINE 4L	2 qt + 1 qt	2 qt + 1.2 qt	2.25 qt + 1.6 qt	PPSA, PRE, or SURFACE MIX, Cost: \$11.25-\$13.00.
*,**LARIAT (2.5 lb Lasso + 1.5 lb Atrazine/gal)	3.0 qt	3.2 qt	3.5 qt	
LASSO 4EC + BLADEX 4L	2 qt + 1 qt	2 qt + 1.7 qt	2 qt + 2 qt	PPSA or PRE ...Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$15.00-\$19.40.
LASSO 4EC + SENCOR DF with ATRAZINE 4L or with BLADEX 4L	Do not use	2 qt + 0.33 lb + 0.75-1.5 qt or 1.25 qt	2 qt + 0.33 lb + 0.75-1.5 qt or 1.5 qt	PRE...3-way mix. Do not use on sandy soils or soils containing less than 2% organic matter. Do not use on calcareous soils or soils with a pH of 7.0 or greater. Cost: Lasso + Sencor + Atrazine \$18.00-\$19.70; Lasso + Sencor + Bladex \$22.20-\$23.40.
LASSO 4EC with ATRAZINE 4L and BLADEX 4L	2 qt + 1 pt + 1 pt	2 qt + 1 pt + 2 pt	2 qt + 1.25 pt + 2.5 pt	PPSA or PRE...3-way mix. Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$13.50-\$17.40.
PROWL 4EC with ATRAZINE 4L or with BLADEX 4L	Do not use	1.5 qt + 1.2 qt or 1.7 qt	1.5 qt + 1.6 qt or 2 qt	PRE or EARLY POST...Corn injury may occur if replanting is necessary. See page ____ for wild proso millet. Prowl + Bladex \$14.90-\$16.30.
PROZINE	Do not use	4.25 lb	4.25 lb	Prowl + Atrazine/Prozine \$10.75
*SUTAN* 6.7E/GENATE PLUS	5 pt	5 pt	5 pt	PPI or SPRINKLER BEFORE WEED SEED GERMINATION...Apply PPI treatments to dry surface soil and immediately incorporate by cross tandem discing or similar soil mixing. Repeated use may lead to reduced weed control. Cost: \$10.50.



## Tilled Seedbed (continued)

Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM	
*SUTAN* 6.7E/GENATE PLUS with *ATRAZINE 4L or with **BLADEX 4L	3.75 pt + 2 pt or 2 pt	3.75 pt + 2.4 pt or 3.5 pt	3.75 pt + 3.2 pt or 4 pt	PPI or SUTAN/GENATE + ATRAZINE AND PACKAGE MIXES THROUGH SPRINKLER... Apply PPI treatments to dry surface soil and immediately incorporate by cross tandem discing or similar soil mixing. Increase rates for sandbur and shattercane control. Injury may occur with Bladex on soils that are calcareous, sandy or below 1% organic matter. Repeated use of Sutan or Genate may lead to reduced weed con- trol. Cost: Sutan/Genate + Atrazine \$9.80-\$11.20; Sutan/Genate + Bladex \$12.30-\$17.00; Sutazine/ Rhino \$12.20-\$14.40.
*SUTAZINE*/RHINO (4.8 lbs Butylate + 1.2 lbs Atrazine/gal)	6 pt	7 pt	7 pt	
*SUTAN* 6.7E/GENATE PLUS with *ATRAZINE 4L and *BLADEX 4L or with EXTRAZINE 4L/CONQUEST 4L	3.75 pt with 1 pt + 1 pt + 1.25 qt	3.75 pt with 1 pt + 2 pt + 1.75 qt	3.75 pt with 1.25 pt + 2.5 pt + 2 qt	PPI...Tank mix. Apply to dry surface soil. Incorporate immediately by cross tandem discing or equivalent soil mixing. Increase rates for sand- bur and shattercane control. Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Repeated use may lead to reduced weed control. Cost: Sutan + Atrazine + Bladex \$10.60-\$12.50; Sutan/Genate + Extrazine/Conquest \$12.10-\$15.10.

OTHER REGISTERED TREATMENTS FOR CORN: AAtrex + Princep (PPI or PRE), Amiben (PRE), Amiben + AAtrex (PRE), Banvel + Lasso (PRE), Knoxweed (PRE), Lorox + AAtrex (PRE), Lorox + Lasso (PRE), Lorox + Atrazine + Lasso (PRE), Princep (PPI or PRE), Prowl (PRE), Prowl + Banvel (PRE), Ramrod (PRE), Ramrod + Atrazine (PRE), 2,4-D (PRE).

## Postemergence

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
*,**AAtrex/ Atrazine 4L or Bicep 6L	2 qt or 2.4 qt	Broadleaf weeds 2-6"; grass weeds 1" or less; also at layby with Atrazine	Use Atrazine with water-crop oil mix- ture. Lower Atrazine rates control broadleaf weeds. Make layby applica- tions when corn is 20-30" tall and weeds less than 1 1/2" tall. Cost: \$4.80-\$17.30.
Bladex 80W or Bladex 90DF	2.5 lb or 2.2 lb	Grass weeds 1" or less; corn before 5-leaf stage	Use with water or vegetable oils or surfactants. Do not use on sand or loamy sand. Do not use Bladex 4L. Decrease rate if Bladex was used earlier. Cost: \$9.00.
*Buctril 2EC or *Brominal ME4 alone or with Atrazine	1-1.5 pt or 0.5-0.75 pt 1 pt	Broadleaf weeds 2-6" tall; corn 3-leaf stage or later	Contact herbicide. Thorough coverage correct nozzles, pressure, spray volume, rate and weed size important. Cost alone: \$5.25-\$7.90; with atrazin \$6.75-\$9.10.
**2,4-D amine or **2,4-D LV ester	1-2 pt or 0.5-1 pt	When corn is small, over 10" use drop nozzles	Later applications may cause brittle- ness and stalk breakage. Use lower rate when good growing conditions exist to reduce corn injury. Do not use Banvel within 1/2 mile of sugar beets, fieldbeans, alfalfa, soybeans, gardens and ornamentals unless drop nozzles are used on corn over 8". Do not apply between June 20 and Sept. 1 if sensitive crops are nearby. Cost: 2,4-D \$.65-\$2.00; 2,4-D + Banvel \$3.90; Banvel \$3.15.
2,4-D amine or ester + Banvel	0.25 pt 0.25 pt + 0.5 pt		
Banvel	0.5 pt	Before corn is 24" high	
Banvel	1 pt	Corn spike to 5"	Use only on silty clay loam soil con- taining more than 2 1/2% organic mat- ter. Observe precautions regarding Banvel use near sensitive crops specified above. Cost: \$6.35.
Extrazine 4L or *,**Conquest 4L	1.25-2 qt	Grass weeds 1" or less, corn before 5-leaf stage	Use with water only. Do not use on sand or loamy sand. Decrease rate if Bladex was used earlier. Cost: \$4.25-\$7.00.
*,**Laddok	2.4 pt	Broadleaf weeds 2-4" high	Use with crop oil concentrate, 20 ga. water and 40 psi. Increase rate 50% on weeds 3-8" tall. Cost: \$5.50.
Marksman	2-3 pt	Before corn exceeds 5-leaf stage	Observe precautions regarding Banvel use near sensitive crops specified above. Cost: \$4.20-\$6.30.
Tandem + Atrazine 4L	1 pt + 3 pt	Grass weeds 1-3 leaf	Use with 1 qt/A crop oil concentrate Cost: \$15.00.
*,**Dual or *,**Bicep 6L	1.5-3 pt 1.5-2.4 pt	Layby before corn is 40" tall	Apply after furrowing or final culti- vation. Weeds less than 1 1/2" tall may be controlled with Bicep. Cost: Dual \$9.40-\$18.75; Bicep \$10.80-\$17.



## FIELD CORN, POPCORN \*, SWEETCORN \*\*

## Postemergence (continued)

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Prowl 4EC alone or with Atrazine Prozine	0.75-1.5 qt 1.0-1.2 qt 4.25 lb	Corn 4" to layby	Cover brace roots by cultivation before application. Incorporate by tillage, irrigation or rain within a week. Cost: Prowl \$3.45-\$6.95; Prowl + Atrazine/Prozine \$5.75-\$9.65.
Treflan EC alone or with Atrazine 4L (Chemigation)	1.5-2 pt 1-1.5 qt	Corn 2-leaf through 30", weeds un- emerged	Apply in 1/2-1" sprinkler irrigation water. Should be used in conjunction with a ppi or pre-treatment. Cost: Treflan \$4.40-\$5.90; Treflan + Atrazine \$6.15-\$8.60.
Treflan MTF	1.5-2 pt	Corn 2-leaf through 30"	Cultivate within 24 hours. Cost: \$4.40-\$5.90
HARVEST AID			
2,4-D LV ester	1 qt	After silk is brown	Rescue for control of sunflower, cocklebur, velvetleaf and other late broadleaf weeds. Only certain brands labeled for this use. Brittleness and kernel fill not affected if silks are dry. Cost: \$2.50.

## WEED RESPONSE TO SELECTED HERBICIDES

## Sorghum-Grain and FORAGE \*

Plant response may be altered by growing conditions, genetic variation in crops and weeds, soil type, pH, organic matter and rates of application. Ratings may vary from season to season and geographical areas within the state. Ratings apply when herbicides are used as suggested in this publication.

See pages 30-36 for additional problem weeds and their control.

## Response Ratings:

Ratings are for light to moderate weed populations and favorable conditions. High weed populations or adverse conditions will reduce control.

E = Excellent (90-100%)

G = Good (75-90%)

F = Fair (50-75%)

P = Poor (0-50%)

## Herbicide

annual morningglory	barnyardgrass	b. nightshade	cocklebur	crabgrass	fall panicum	foxtail	jimsonweed	kochia***	lambsquarters	pigweed	ragweed	R. thistle	sandbur	shattercane/sorghum	smartweed	sunflower	velvetleaf	w. buckwheat	crop safety <sup>1</sup>	soil carryover potential in months <sup>2</sup>
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## Soil Applied Herbicides

AAtrex*/Atrazine	E	G	E	G	F	P	G	G	E	E	E	E	F	P	E	E	G	E	F	6-24
Bicep* + Concep II	G	E	E	F	G	G	E	G	E	E	E	G	F	P	G	G	F	G	F	6-18
Dual* or Lasso + Seed Safener	P	E	G	P	E	E	E	P	P	G	G	F	P	P	P	P	P	P	F	2-5
Dual or Lasso + Atrazine + Seed Safener	G	E	E	F	G	G	E	F	E	E	E	G	F	P	G	G	F	G	F	6-18
Lariat + Seed Safener	G	E	E	F	G	G	E	F	E	E	E	G	F	P	G	G	F	G	F	6-18
Igran + AAtrex	E	G	E	G	P	P	G	G	E	E	E	E	F	P	E	E	G	E	F	6-18
Ramrod	P	G	P	P	G	G	E	P	P	F	G	P	P	P	F	P	P	F	E	1-2
Ramrod + Atrazine	G	G	G	F	G	F	E	F	E	E	E	G	G	P	P	G	G	F	G	6-18
Ramrod + Bladex	G	G	E	F	G	G	E	F	E	G	F	G	G	P	P	G	F	G	F	2-4
Dual or Lasso + Atrazine + Bladex + Seed Safener	G	G	E	F	G	G	E	F	E	G	G	G	F	P	G	F	F	G	F	2-4

## Postemergence Herbicides

AAtrex/Atrazine + crop oil	E	P	E	E	F	P	F	E	E	E	E	F	P	P	E	E	E	E	F	6-18
Banvel	E	P	G	E	P	P	P	F	G	G	G	G	E	P	P	E	G	F	E	1-2
Laddok	G	P	G	E	P	P	P	E	G	G	G	E	P	P	P	E	E	E	E	2-6
Roundup-ropewicks, wipers, etc. <sup>c</sup>	-	-	-	G	-	-	-	G	F	G	G	G	F	-	E	G	F	F	-	0
Buctril	E	P	E	E	P	P	P	E	G	G	G	E	G	P	P	E	E	G	E	0
2,4-D	E	P	F	E	P	P	P	G	G	G	G	G	E	P	P	P	G	F	P	1

<sup>a</sup>Crop varieties vary in their response to herbicides.

<sup>b</sup>The lower number applies to eastern Nebraska, the large number to western Nebraska. Values will vary with soil and rainfall or irrigation. For more information see "Herbicide Carryover", G83-637.

<sup>c</sup>Ratings for weeds tall enough for selective treatment.

\*Registered for forage sorghum.

\*\*Kochia in some areas has developed resistance to Atrazine, Bladex and other triazines.



## No-Till

Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM		
Grain Sorghum, No-Till Continuous Row Crop <sup>2</sup>					
AAtrex 4L	1.6 qt	2.4 qt	3 qt	Apr 1-15	Avoid over 0.8 lb/A Atrazine on sandy soils, eroded soils and soils with pH greater than 7.2. Add 1.5-2.5 pt Gramoxone <sup>1</sup> or 54 oz Land-master if emerged grass weeds are over 2". If only broadleaf weeds are present add 2,4-D LV ester at 1 pt/A. For volunteer corn or sorghum use Roundup <sup>1</sup> at 0.75-1 pt/A in 5 gpa of water prior to planting. If weed population was high last year, use a preemergence herbicide at planting. With Bladex, Conquest or Extrazine, delay planting until at least 10 days after a soaking rain after treatment.\$7.10-\$11.80; Bladex + Atrazine 28 days \$9.40-\$14.15; Bladex + Atrazine 15 days \$11.80-\$16.50; Extrazine 14 days \$6.30-\$11.00; Extrazine 28 days \$8.50-\$12.50; Extrazine 35 days \$10.50-\$14.00.
Bladex 4L	2 qt	2.5 qt	3 qt	28 days preplant	
	2.5 qt	3 qt	3.5 qt	35 days preplant	
Bladex 4L + Atrazine 4L	1.2 qt* + 0.6 qt	1.5 qt + 0.8 qt	2 qt + 1 qt	14 days preplant*	
	1.6 qt + 0.8 qt	2 qt + 1 qt	2.5 qt + 1 qt	28 days preplant	
	2 qt + 1 qt	2.5 qt + 1 qt	3 qt + 1 qt	35 days preplant	
Extrazine/Conquest	1.8 qt*	2.3 qt	3.0 qt	14 days preplant*	
	2.4 qt	3.0 qt	3.5 qt	28 days preplant	
	3.0 qt	3.5 qt	4.0 qt	35 days preplant	
Extrazine/Conquest + Dual 8E	1.25 qt + 0.75 qt	1.6 qt + 0.75 qt	2.0 qt + 0.87 qt	14 days preplant	Seed must be treated with Concep to protect from Dual and Bicep injury or Screen to protect from Lasso injury. Atrazine and Bicep will damage sorghum on sandy and low organic matter soils. If weedy add Gramoxone Super at 1.5-2.0 pt. Cost: Dual + Atrazine \$10.25-\$16.75; Bicep \$19.40-\$29.45; Lasso + Atrazine \$11.70-\$20.70; Extrazine/Conquest + Dual 14 day \$9.00-\$20.70; Extrazine/Conquest + Dual 28 days \$18.75-\$22.25.
	1.6 qt + 1.0 qt	2.0 qt + 1.0 qt	2.5 qt + 1.0 qt	28 days preplant	
Dual 8E + AAtrex 4L	1.5 pt + 0.5-0.75	1.75 pt + 1 qt	2 pt + 1.5 qt	1-20 days preplant; increase rate	
Bicep 6L	1.8 qt on 1-1.5% OM	2.1 qt	2.4 qt	20% for 20-30 days preplant	
Lasso 4EC + AAtrex 4L	2 qt + 0.5-0.75 qt	2.5 qt + 1 qt	3 qt + 1.5 qt	1-5 days preplant	
Igran 4L <sup>1</sup> + AAtrex 4L	Do not use	1.8 qt + 1 qt	2 qt + 1 qt	1-7 days preplant	

## SORGHUM, FORAGE SORGHUM \*\* Tilled Seedbed

AATREX 4L/ATRAZINE 4L**	Do not use	2 qt	2.4 qt	EPP*, PPSA, PPI, PRE or SURFACE MIX... Preplant applications should be made only on fine textured soils. Cost: \$4.80-\$5.75.
BICEP 6L** (3.33 lbs Dual + 2.67 lbs Atrazine/gal)	1.5 qt on 1-1.5% OM	1.8 qt	2.4 qt	EPP*, PPSA, PRE or SURFACE MIX... <b>Seed must be Concep treated.</b> Do not use Atrazine on sandy, high pH or calcareous soils. Rain may leach herbicides especially Bladex and cause sorghum injury. Cost: Atrazine \$4.80-\$5.75; Dual \$9.40-\$15.60; Dual + Atrazine Bladex \$14.00-\$21.30.
DUAL 8E** or DUAL 25G	1.5 pt or 6 lb	2 pt or 8 lb	2.5 pt or 10 lb	
DUAL 8E** with AATREX/ATRAZINE 4L or with ATRAZINE 4L + BLADEX 4L	1.5 pt + 0.5-0.75 qt or Do not use	1.5 pt + 1 qt or 0.4-0.8 qt	1.75-2 pt + 1.5 qt or 0.6-1.0 qt	



## SORGHUM

### Tilled Seedbed

Herbicide	Commercial product per Acre			Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM	
IGRAN 4L	Do not use	1.6 qt	1.6 qt	PPSA, PPI, or SURFACE MIX...Apply within 2 weeks of planting. Do not feed or graze treated forage. Cost: \$11.10.
AATREX 4L		0.8 qt	0.8 qt	
LASSO 4EC	2.5 qt	2.5 qt	3 qt	PPSA, PRE or SURFACE MIX...Seed must be Screen treated. Do not use Atrazine on sandy, high pH or calcareous soils. Rain may leach herbicides especially Bladex and cause sorghum injury. Cost: Lasso + Atrazine + Bladex \$14.50-\$19.00. Lasso + Atrazine/Lariat \$11.25-\$13.25.
LASSO 4EC	2 qt	2 qt	2.25 qt	
with	+	+	+	
ATRAZINE 4L	0.5-0.75 qt	1 qt	1.25 qt	
or with	or	or	or	
ATRAZINE 4L + BLADEX 4L	Do not use	0.4+0.8 qt	0.6+1.0 qt	
LARIAT (2.5 lbs Lasso + 1.5 lbs Atrazine/gal)	Do not use	3 qt	3.5 qt	
RAMROD FLOWABLE or	4 qt or	4 qt or	4 qt or	PRE...May cause skin irritation to applicator. Do not feed treated forage to dairy animals. Leaches on sandy soil. Cost: \$16.80.
RAMROD 20G	20 lb	20 lb	20 lb	
RAMROD FLOWABLE	Do not use	3 qt	3 qt	PRE...In southwest Nebraska hold Atrazine rate to 0.75 qt. Rain may leach herbicides and cause sorghum injury or poor weed control. Do not feed treated forage to lactating dairy animals. Cost: Ramrod + Bladex \$15.50; Ramrod + Atrazine \$13.75; Ramrod & Atrazine Flowable \$14.50.
+ AATREX 4L/ATRAZINE 4L		+ 0.75-1 qt	+ 1.25 qt	
RAMROD FLOWABLE	Do not use	5 pt	5 pt	
+ BLADEX 4L		+ 2.5 pt	+ 2.75 pt	
RAMROD & ATRAZINE FLOWABLE (3 lbs Ramrod + 1 lb Atrazine/gal)	Do not use	4 qt	4 qt	

OTHER REGISTERED TREATMENTS FOR SORGHUM: Bladex + Propazine [Milogard] (PRE), Dual 8E + Igran 80W (PRE), Dual 8E + Milogard (PRE), Dual + Modown (PRE), Igran 80W (PRE), Lasso + Modown (PRE), Lasso + Propazine or Milogard (PRE or SURFACE BLEND), Lorox + Ramrod (PRE), Milogard 80W (PRE), Milogard + Igran (PPI, PRE or SURFACE MIX), Propazine (PRE), Ramrod + Propazine or Milogard.

## SORGHUM

### Postemergence

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Aatrex/Atrazine 4L	1.2 qt	Broadleaf weeds less than 6"	Use with water + crop oil. Atrazine may give partial control of grass weeds under 1". Do not use atrazine on sand or loamy sand. Increase Laddok rate 50% on weeds 3-8" tall. Cost: Atrazine \$3.40; Laddok \$5.50
Laddok	2.4 pt	Broadleaf weeds 2-4"	
Banvel	0.5 pt	Sorghum 3-5 leaves	Observe label precautions when sensitive crops are nearby. Cost: \$3.15.
2,4-D amine or	1 pt or	After sorghum is 5" tall. If over 10" use drop nozzles	Spraying before 5" stage may inhibit root development. Spraying without drop nozzles after 12" through early boot may inhibit head development; do not use 2,4-D from early boot through soft dough stage. Cost: 2,4-D \$.65-\$1.00; Brominal/Buctril alone \$5.28-\$7.90; with Atrazine \$6.75-\$9.10.
2,4-D LV ester	0.5 pt		
Brominal ME4 or	0.5-0.75 pt or	Broadleaf weeds 2-6"; sorghum up to 14"	
Buctril 2EC alone or with Atrazine	1-1.5 pt 1 pt		

#### HARVEST AID

2,4-D LV ester	1 qt	After soft dough	Rescue for late sunflower, cocklebur, velvetleaf and pigweed. Only certain brands labeled for this use. Cost: \$2.50.
Chlorate 3 or Leafex	1.5-2 gal or 1.5-2 gal	7-10 days before harvest	Desiccant. Products are sodium chlorate with a fire retardant. Good coverage required. Do not graze or harvest forage for 14 days after treatment. Cost: \$2.50.



# WEED RESPONSE TO SELECTED HERBICIDES

11

## Soybeans

Plant response may be altered by growing conditions, genetic variation in crops and weeds, soil type, pH, organic matter and rates of application. Ratings may vary from season to season and geographical areas within the state. Ratings apply when herbicides are used as suggested in this publication.

See pages 30-36 for additional problem weeds and their control.

### Response Ratings:

Ratings are for light to moderate weed populations and favorable conditions. High weed populations or adverse conditions will reduce control.

E = Excellent (90-100%)  
G = Good (75-90%)  
F = Fair (50-75%)  
P = Poor (0-50%)

### Herbicide

annual morningglory  
barnyardgrass  
b. nightshade  
cocklebur  
crabgrass  
fall panicum  
foxtail  
jimsonweed  
kochia\*\*\*  
lambquarters  
pigweed  
ragweed  
R. thistle  
sandbur  
shattercane/sorghum  
smartweed  
sunflower  
velvetleaf  
w. buckwheat  
crop safety<sup>1</sup>  
soil carryover  
potential in months<sup>2</sup>

## Soil Applied Herbicides

Commence	P	E	G	F	E	E	E	G	G	E	G	G	-	G	G	E	F	E	-	E	6-15
Command + Treflan or Sonalan or Prowl	P	E	G	F	E	E	E	G	G	E	G	G	-	G	G	E	F	E	-	E	6-15
Dual	P	E	G	P	E	E	E	P	P	G	G	F	P	F	P	P	P	P	E	E	2-5
Dual + Amiben + Sencor/Lexone	P	E	G	F	E	E	E	G	F	E	E	E	G	F	P	G	F	G	E	F	2-4
Dual + Sencor/Lexone or Turbo	P	E	G	F	E	E	E	G	F	E	E	E	G	F	P	G	F	G	E	F	2-5
Lasso	P	E	G	P	E	E	E	P	P	G	G	G	P	F	P	P	P	P	E	E	2-4
Lasso + Amiben + Sencor/Lexone	P	E	G	F	E	E	E	G	F	E	E	E	G	F	P	G	F	G	E	F	2-4
Lasso + Modown	G	G	G	P	G	G	E	G	G	E	E	P	P	F	P	E	P	F	G	F	2-4
Lasso + Sencor/Lexone	P	E	G	F	E	E	E	G	F	E	E	E	G	F	P	G	F	G	E	F	2-4
Lorox + Lasso or Dual	P	E	G	F	E	E	E	F	F	G	E	E	G	F	F	P	G	F	F	G	2-4
Preview + Lasso or Dual	F	E	G	G	E	E	E	G	G	E	E	E	G	F	P	G	G	G	E	G	6-12
Preview + Treflan or Sonalan or Prowl	F	E	F	G	E	E	E	G	G	E	E	E	G	G	G	G	G	G	E	G	6-12
Prowl	P	E	P	P	E	E	E	P	F	G	G	P	G	G	F	P	P	P	G	G	4-12
Prowl + Sencor/Lexone	P	E	P	F	E	E	E	G	G	E	E	E	E	G	F	G	F	G	E	F	4-12
Salute	P	E	P	F	E	E	E	G	G	E	E	E	E	G	G	G	F	G	E	F	6-12
Scepter + Dual or Lasso	P	E	G	G	E	E	E	G	F	E	E	E	-	F	F	E	E	G	-	E	6-15
Scepter + Prowl, Sonalan or Treflan	P	E	F	G	E	E	E	G	G	E	E	E	-	G	E	E	E	G	-	E	6-15
Sonalan	P	E	F	P	E	E	E	P	F	G	G	P	G	G	F	P	P	P	P	G	4
Sonalan + Sencor/Lexone	P	E	F	F	E	E	E	G	G	E	E	E	E	G	F	G	F	G	E	F	4
Squadron	P	E	F	G	E	E	E	G	G	E	E	E	-	G	G	E	E	G	-	E	6-15
Split-Appl.-Treflan/Trifluralin or Prowl + Sencor/Lexone	P	E	P	F	E	E	E	G	G	E	E	E	E	G	G	E	F	E	E	G	6-12
Treflan	P	E	P	P	E	E	E	P	F	G	G	P	G	G	G	P	P	P	P	G	6-12
Treflan/Trifluralin + Sencor/Lexone	P	E	P	F	E	E	E	G	G	E	E	E	E	G	G	G	F	G	E	F	6-12
Treflan + Sencor/Lexone + Command	P	E	G	F	E	E	E	G	G	E	E	E	G	G	G	G	F	E	E	G	6-15

## Postemergence Herbicides

Basagran + Blazer/Tackle	G	P	G	E	P	P	P	E	P	F	G	E	P	P	P	E	E	G	G	E	0
Basagran + Scepter	F	P	P	E	P	P	P	E	P	P	E	G	P	P	P	E	E	E	G	E	2-6
Basagran with Fertilizer	F	P	P*	E	P	P	P	E	P	P	P	G	P	P	P	E	E	G	G	E	0
Blazer/Tackle	E	P	G	F	F	G	F	E	F	F	E	E	P	F	F	E	P	F	-	G	0
Classic	G	P	-	E	P	P	P	E	-	F	E	E	-	P	P	E	E	F	-	E	6-12
Cobra	G	P	G	G	F	G	F	E	F	F	E	E	P	F	F	E	G	G	-	G	0
Fusilade	P	E	P	P	E	E	G	P	P	P	P	P	P	E	E	P	P	P	P	E	1
Poast	P	E	P	P	E	E	G	P	P	P	P	P	P	E	E	P	P	P	P	E	0
Poast + Basagran	F	E	P	E	G	E	G	E	P	P	P	G	P	E	F	G	E	G	G	E	0
Rescue	P	P	P	G	P	P	P	P	P	P	P	G	P	P	P	P	G	P	P	G	0
Roundup-ropewicks, wipers, etc. <sup>c</sup>	-	-	-	G	-	-	-	G	F	G	G	G	F	F	E	G	F	F	-	E	0

<sup>a</sup>Crop varieties vary in their response to herbicides.

<sup>b</sup>The lower number applied to eastern Nebraska, the large number to western Nebraska. Values will vary with soil and rainfall or irrigation. For more information see "Herbicide Carryover", G83-637.

<sup>c</sup>Ratings for weeds tall enough for selective treatment.

\*Kochia in some areas has developed resistance to Sencor, Lexone and other triazines.

## SPECIAL APPLICATION EQUIPMENT

Crop	Applicator	Herbicide and Ratio-(product:water)	Remarks
Soybeans	1. Recirculating sprayer	Roundup 1:19 (5% concentration)	Weeds 10-12" taller than soybeans.
Soybeans and Sorghum	2. Ropewick-- .Pipewick .Wedgewick .Bobar	Roundup 1:2 (33.3% concentration)	Works best on volunteer corn and shattercane. Weeds should be 10-12" taller than soybeans. Travel both directions in heavy stands. In sorghum, too wet or dripping ropes will cause droplet splash and crop injury.
Soybeans	3. Bean Bar-- straight stream nozzles	Roundup 1:19 (5% concentration)	A marking dye can be added to the spray solution so it is easier to see treated plants.



Crop	Applicator	Herbicide and Ratio-(product:water)	Remarks
Soybeans	4. Bean Bar-- spreading nozzles	Basagran 1:100 (1% concentration)	Complete coverage essential. Add 1 gal nitrogen fertilizer to each 25 gal spray. Add Poast and crop oil for <u>shattercane and volunteer corn.</u>
		Poast or Fusilade 1:100 (1% concentration)	Add 1 qt crop oil conc. or 1/2 pt adjuvant per 25 gal mix.
		Rescue 1:14 (7.5% concentration)	Add appropriate nonionic surfactant.
		Amiben DF 3.6 lb + 2,4-DB 2 oz	Use in 25 gal water. Add 1 qt crop oil conc. or 1/2 pt adjuvant. Labeled for use 33 days after soybean emergence.

Herbicide costs per acre vary from \$1.00 with light weed infestations to \$15.00 in heavy infestations.

## SOYBEANS

## No-Till

Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam	Silt Loam	Silty-Clay Loam		
	1 % OM	1 -2 % OM	2 % OM		
<b><u>Soybeans, No-Till Continuous Row Crops</u></b>					
Sencor/Lexone 4L with		0.7 pt	0.8 pt		Atrazine residue from previous crop could kill soybeans. Do not use on sandy soil with less than 1% OM and reduce rates by 1/3 on calcareous soils. Split application of Sencor/Lexone with Prowl, Dual and Surflan improves weed control. Under most conditions increase Sencor/Lexone rate by 25% with split applications. Cost: Gramoxone + Sencor/Lexone with Lasso \$28.75-\$34.35 or with Dual \$34.25; or with Prowl \$21.00-\$28.54; Surflan \$29.25-\$35.75; Bronco+Sencor/Lexone \$41.45; Bronco + Lorox \$41.45-\$44.55; Gramoxone + Lorox with Dual \$23.75-\$40.40; Gramoxone + Lorox with Lasso \$25.15-\$40.95.
Lasso MT	Do not use	2.5 qt	3 qt	10-20 days	
or with		or	or	preplant	
Dual 8E	Do not use	2 pt	2.5 pt		
or with		or	or		
Prowl EC	Do not use	2.5 pt	3 pt		
or with		or	or	Surflan 20	
Surflan AS	Do not use	2 pt	2 pt	days preplant	
+		+	+		
Gramoxone <sup>1</sup> (if weedy)	Do not use	1.5-2.5 pt	1.5-2.5 pt		
Lorox	1.25 pt	1.5 pt	2 pt	With Lasso	
with	with	with	with	1-20 days	
Lasso MT	2 qt	2.5 qt	3 qt	preplant	
	or	or	or	With Dual	
Dual 8E	1.5 pt	2 pt	2.5 pt	1-20 days	
+	+	+	+	preplant	
Gramoxone <sup>1</sup> (if weedy)	2 qt	2.5 qt	3 qt		
Bronco	Do not use	4 qt	4 qt		
+		+	+		
Sencor/Lexone 4L		0.7 pt	0.8 pt	1-5 days	
				preplant	
Bronco	3.25 qt	4 qt	4 qt		
+	+	+	+		
Lorox	1.25 pt	1.5 pt	2 pt		

## Tilled Seedbed

For cocklebur, sunflower and velvetleaf, see Troublesome Weed Section.

COMMAND 4EC	0.75 pt	1.2 pt	1.5 pt	Immediately incorporate, may be surface mixed with Lasso. Use 2.5 qt rate of Lasso for heavy infestation of pigweed and lambsquarter. Command vapor drift may damage green vegetation. Carryover may damage wheat seeded the same fall, or sugar beets and fieldbeans the next year. Cost: Command + Treflan/Commence \$8.65-\$17.25; Command + Sonalan \$8.50-\$17.00; Command + Lasso \$17.50.
with	+	+	+	
TREFLAN 4EC	1 pt	1.5 pt	2 pt	
or with	or	or	or	
SONALAN 4EC	2 pt	2.5 pt	3 pt	
COMMAND 4EC	1 pt	1 pt	1 pt	
with	+	+	+	
LESSO 4EC, MT	2 qt	2 qt	2 qt	
COMMENCE 5.25 EC	1.75-2 pt	2-2.25 pt	2.66 pt	
(3 lb Treflan + 2.25 lb Command)				
DUAL 8E	2 pt	2.5 pt	2.5 pt	EPP, PRE, SURFACE MIX or CENTER PIVOT ...To reduce injury on calcareous soil decrease Sencor/Lexone rates by 1/3. Do not use Turbo on calcareous soil. Turbo also labeled split-shot with additional Turbo or Sencor and tank mix with Command or Scepter. Follow label directions. Cost: Dual \$12.50-\$15.65; Dual + Sencor or Turbo \$18.20-\$22.60.
or	or	or	or	
DUAL 25G	8 lb	8 lb	10 lb	
DUAL 8E	Do not	1.5 pt	2 pt	
+	use	+	+	
SENCOR/LEXONE DF <sup>4</sup>		0.5 lb	0.6 lb	
TURBO 8EC	Do not	2.0 pt	2.5-2.75 pt	
(6.55 lb Dual + 1.45 lb Sencor)	use			



# SOYBEANS Tilled Seedbed

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Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM	
For cocklebur, sunflower and velvetleaf, see Troublesome Weed Section.				
PREVIEW 75 DF (10:1 ai Lexone to Classic) with	6-7 oz	7-8 oz	8-10 oz	PPI with Treflan and Sonalan. PPI or SURFACE MIX with Prowl. PRE or SURFACE MIX ith Dual or Lasso. Rain- fall required to activate all treat- ments. Do not apply to soils with with pH greater than 6.8 or organic matter less than 0.5%. Carryover injury may result, see label for recropping restrictions. Cost: Preview + Prowl or Treflan or Sonalan \$13.00-\$22.50; Preview + Dual \$21.50- \$26.50.
TREFLAN	+	+	+	
or with	1 pt	1.5 pt	2 pt	
SONALAN	or	or	or	
or with	2 pt	2.5 pt	3 pt	
PROWL	or	or	or	
or with	1.5 pt	2 pt	2 pt	
DUAL	or	or	or	PRE, SURFACE MIX or CENTER PIVOT... To reduce injury on calcareous soil decrease Sencor/Lexone rates by 1/3. Cost: Lasso \$13.50; Lasso + Sencor/ Lexone \$19.60-\$20.90.
or with	1.5 pt	2 pt	2 pt	
LASSO	Do not	or	or	
use	2 qt	2 qt	2 qt	
LASSO 4EC	2.5 qt	2.5 qt	2.5 qt	
or	or	or	or	
LASSO II 15G	17 lb	17 lb	17 lb	
LASSO 4EC	Do not	2 qt	2 qt	PRE...Lorox not greatly influenced by soil pH. Do not use on soils with less than 0.5% OM. Cost: Lasso + Lorox \$15.05-\$23.40; Dual + Lorox \$16.75-\$25.10.
+	use	+	+	
SENCOR/LEXONE DF <sup>4</sup>		0.5 lb	0.6 lb	
LOROX L	1-1.3 pt	1.5 pt	2 pt	
with	+	+	+	
DUAL 8E	2 pt	2 pt	2 pt	
or with	or	or	or	
LASSO 4EC	4 pt	4 pt	4 pt	PPI or SURFACE MIX...To reduce injury on calcareous soil decrease Sencor/ Lexone rates by 1/3. Lexone not labeled on sandy soil. Cost: Prowl \$3.45-\$5.75; Prowl + Sencor \$9.75- \$14.70.
PROWL 4EC	1.5 pt	2 pt	2.5 pt	
PROWL 4EC	1.5 pt	2 pt	2 pt	
+	+	+	+	
SENCOR/LEXONE DF <sup>4</sup>	0.33 lb	0.5 lb	0.6 lb	
SCEPTER 1.5EC	0.67 pt	0.67 pt	0.67 pt	
(with or without	+	+	+	
SENCOR)	(0.33 lb)	(0.33 lb)	(0.50 lb)	PRE or SURFACE MIX with Lasso or Dual. PPI Prowl or Squadron 7 days, Treflan 1 day, or Sonalan 2 days. Crop injury and carryover risk may increase on high pH soils or sandy, eroded soils. Carryover from over application may injure corn and sugar beets the follow- ing year. Scepter and Squadron labeled eastern 1/5 of state plus irrigated soybeans elsewhere. Cost: Scepter + Lasso \$24.00; Scepter + Dual \$26.50; Scepter + Prowl or Sonolan or Treflan \$16.50-\$20.00, with Sencor add \$6.00.
with	+	+	+	
LASSO	2 qt	2 qt	2 qt	
or with	or	or	or	
DUAL	2 pt	2 pt	2 pt	
or with	or	or	or	
PROWL	1.5 pt	2 pt	2 pt	
or with	or	or	or	PPI...Incorporate within 48 hours. To reduce injury on calcareous soil reduce Sencor/Lexone rate by 1/3. Increase Sonalan rate by 1/2-1 pt for black nightshade control. Cost: Sonalan \$4.65-\$7.40; Sonalan + Sencor/ Lexone \$9.80-\$18.30.
TREFLAN	1.0 pt	1.25 pt	2 pt	
or with	or	or	or	
SONALAN	2 pt	2.5 pt	3 pt	
SQUADRON	3 pt	3 pt	3 pt	
(2 lb Prowl + 0.33 lb Scepter)				
SONALAN 3EC	1.7 pt	2.3 pt	2.7 pt	PPI...For best results immediately incorporate. To reduce injury on calcareous soil decrease Sencor/ Lexone rate by 1/3. Do not use Salute on calcareous soil. Cost: Treflan/Trifluralin \$2.55- \$4.45; Treflan/Trifluralin + Sencor/Lexone/Salute \$8.85-\$13.95.
SONALAN 3EC	2 pt	2.5 pt	3 pt	
+	+	+	+	
SENCOR/LEXONE DF <sup>4</sup>	0.33 lb	0.5 lb	0.6 lb	
TREFLAN 4EC/TRIFLURALIN	1 pt	1.5 pt	2 pt	
+	+	+	+	
SENCOR/LEXONE DF <sup>4</sup>	0.33 lb	0.5 lb	0.6 lb	
SALUTE 4EC (2:1 ratio Trifluralin + Sencor)	1.5 pt	2.25 pt	3.0 pt	

(Continued next page)



## SOYBEANS Tilled Seedbed

Herbicide (See Weed Response Chart before selecting herbicides)	Commercial product per Acre			Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam	Silt Loam	Silty-Clay Loam	
	1 % OM	1 -2 % OM	2 % OM	
For cocklebur, sunflower and velvetleaf, see Troublesome Weed Section.				
PROWL 4EC	1.5 pt	2 pt	2 pt	SPLIT SHOT, PPI and PRE...Improves broadleaf control. For best results immediately incorporate first ap- plication. On calcareous soils reduce Sencor/Lexone rates by 1/3. Lexone not labeled on sandy soil. Cost: Prowl + Sencor/Lexone + Sencor/ Lexone \$9.75-\$18.35; Treflan/ Trifluralin + Sencor/Lexone + Sencor/ Lexone \$8.85-\$16.40; Prowl + Sencor/ Lexone + Prowl + Sencor/Lexone \$10.90- \$19.50.
or	or	or	or	
TREFLAN 4EC/TRIFLURALIN (PPI) with	1 pt	1.5 pt	2 pt	
SENCOR/LEXONE DF <sup>4</sup> PPI	0.2 lb	0.4 lb	0.5 lb	
followed by	+	+	+	
SENCOR/LEXONE DF <sup>4</sup> PRE (Split application)	0.1 lb	0.2 lb	0.2 lb	
PROWL 4EC	1 pt	1.5 pt	1.5 pt	
+	+	+	+	
SENCOR/LEXONE DF <sup>4</sup> PPI	0.2 lb	0.4 lb	0.5 lb	
followed by	+	+	+	
PROWL 4EC	1 pt	1.5 pt	1.5 pt	PPI...3-way mix. For best results immediately incorporate. To reduce injury on calcareous soil reduce Sencor/Lexone rate by 1/3. Command vapor droplet drift may damage green vegetation. Cost: Prowl or Sonalan or Treflan + Command + Sencor \$14.50-\$27.00
+	+	+	+	
SENCOR/LEXONE DF <sup>4</sup> PRE (Split application)	0.1 lb	0.2 lb	0.2 lb	
PROWL 4EC	1.5 pt	2 pt	2 pt	
or	or	or	or	
SONALAN 3EC	1.5 pt	2 pt	2.5 pt	
or	or	or	or	
TREFLAN 4EC	1 pt	1.5 pt	2 pt	
with	+	+	+	
COMMAND 4EC	0.75 pt	1.0 pt	1.5 pt	
and	+	+	+	
SENCOR/LEXONE DF <sup>4</sup>	0.25 lb	0.33 lb	0.5 lb	

OTHER REGISTERED TREATMENTS FOR SOYBEANS: Alanap (PRE), Amiben (PRE), Amiben + Sencor/Lexone (PRE), Amiben + Treflan (PPI), Command + Sencor/Lexone (PPI), Dual + Amiben (PRE or PPI), Dual or Lasso + Lorox a Lexone (PRE), Dual + Sencor/Lexone + Modown (PRE), Goal (PRE), Goal + Lasso (PRE), Lasso + Amiben (PRE), Lasso + Sencor/Lexone + Modown (PRE), Lexone (PRE), Lorox (PRE), Lorox + Amiben (PRE), Modown (PRE), Prowl Amiben (PRE), Prowl + Lorox (PRE), Prowl + Amiben + Sencor/Lexone (PPI), Ramrod (PRE, seed beans only), Sencor (PRE), Surflan (PRE), Surflan + Lorox (PRE), Surflan + Sencor/Lexone (PRE), Treflan + Amiben + Sencor/Lexone (PPI), Treflan (PPI) + Modown (PRE), Vernam (PPI) + Amiben (PRE), Vernam (PPI) + Lorox (PRE), Vernam + Treflan (PPI), Dual or Lasso + Modown (PRE), Dual or Lasso + Amiben + Sencor/Lexone (PRE or PPI), Lorox Plus + Treflan or Sonalan or Prowl or Dual or Lasso (PRE).

## SOYBEANS Postemergence

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Basagran 4WS	1 pt	Most suscep- tible weeds less than 4" tall	Combining Basagran with Poast reduces effectiveness on volunteer corn and shattercane. Good spray coverage essential. See label for rates and specific weed size. The addition of 2 oz of 2,4-DB improves effectiveness of Basagran and Blazer on larger weeds. Cost: Basagran \$7.60; Blazer/Tackle \$6.85-\$13.40; Basagran + Blazer/Tackle \$10.90-\$13.65; Basagran + Poast \$26.75-\$31.25; Basagran + Scepter + Crop Oil Con. \$18.45.
+	+		
28% UAN	1 gal		
Blazer/Tackle	1-2 pt		
+	+		
Surfactant or	3-6 oz or		
28% UAN	1 gal		
Blazer/Tackle	0.5-1 pt		
+	+		
Basagran 4WS	1 pt		
+	+	Use Basagran and Poast guidelines	Do not apply during periods of stress or weed control will be poor. Do not apply later than 90 days prior to harvest. Use of surfactant or COC recommended if weeds are at or near maximum growth stage. Refer to label for maximum leaf stages for specific weeds. Cost: \$8.50-\$10.00
28% UAN	1 gal		
Basagran 4WS	1.5-2 pt		
+	+		
Poast	1.5 pt		
+	+		
Dash	1 qt		
+	+		
28% UAN	1 gal		
Basagran	1.5 pt		
+	+	Most suscep- tible weeds less than 4" tall	Do not use on soils above pH 6.8. Thorough spray coverage required. Add 28% N for velvetleaf. Cost: \$8.00-\$11.75.
Scepter 1.5L	0.33 pt		
+	+		
Crop Oil Conc.	1 qt		
Cobra 2EC	10-12.5 oz		
+	+		
Surfactant	1-1.5 pt/100 gal		
or	or		
Crop Oil Conc.	0.25-1 pt/A		
Classic	0.5-0.75 oz	Most suscep- tible weeds less than 4"	
+	+		
Surfactant	6 oz		

(Continued next page)



## SOYBEANS Postemergence

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Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Fusilade 2000	1-1.5 pt	Shattercane and corn 12-18"; other annual grasses less than 4"	Crop oil concentrate or surfactant and good coverage essential for effective control. Volunteer corn and shattercane controlled with 3/4 pint Fusilade. Cost: Fusilade \$11.50-\$16.50; Poast \$11.50.
Poast + Dash + 28% UAN	1 pt + 1 qt + 1 gal	Weeds under 30"; soybeans after first bloom	Effective primarily on large sunflower cocklebur and giant ragweed. Add surfactant 1/2% v/v. Cost: \$10.60.

### HARVEST AID

Gramoxone Super	1.25 pt	Desiccant. Apply when 65% of pods are brown. Follow label directions or water volume and X-77 additive. Do not graze for 15 days. Cost: \$6.50.
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## WEED RESPONSE TO POSTEMERGENCE HERBICIDES

### Small Grain

#### Response ratings:

Weeds less than 4" tall except less than 2" for Brominal/Buctril treatments.  
 E = Excellent (90-100%)  
 G = Good (75-90%)  
 F = Fair (50-75%)  
 P = Poor (0-50%)

	blue mustard	erect knotweed	field pennycress	horseweed	kochia	lambsquarters	P. smartweed	prostrate pigweed	redroot pigweed	R. thistle	shepherdspurse	sunflower	tansy mustard	velvetleaf	wild buckwheat	prickly lettuce	wild vetch	soil persistence in months <sup>a</sup>
Ally	E	F	E	-	F	G	F	E	E	G	E	F	F	-	F	E	P	1-22
Ally + 2,4-D	E	F	E	-	G	E	F	E	E	E	E	G	E	G	G	E	F	1-22
Glean (Postemergence)	E	F	E	-	F	G	G	E	E	F	E	G	G	-	F	G	-	6-48
Glean + 2,4-D (Postemergence)	E	F	E	-	G	E	G	E	E	G	E	E	E	G	F	E	-	6-48
Glean (Preemergence to Weeds)	E	G	E	-	E	E	G	E	E	E	E	G	G	-	G	G	-	6-48
MCPA	F	P	G	P	F	G	F	F	F	F	G	F	G	G	P	F	F	1
Brominal 3+3 or Bronate	F	E	E	F	F	E	F	E	G	G	E	E	G	G	E	-	G	1
Brominal/Buctril	G	E	E	G	F	G	G	F	G	G	E	E	G	E	E	G	F	1
2,4-D	E	F	E	F	G	E	G	E	E	G	E	E	E	E	P	E	G	1
2,4-D + Banvel	F	G	E	F	E	E	E	E	E	E	E	E	E	G	E	G	G	1-2
2,4-D + Brominal/Buctril	E	E	E	F	G	E	E	E	E	E	E	E	E	E	E	E	G	1

<sup>a</sup>The lower number applies to eastern Nebraska, the large number to western Nebraska. Values will vary with soil and rainfall or irrigation. For more information see "Herbicide Carryover", G74-180.

## BARLEY AND SPRING WHEAT

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
2,4-D amine or 2,4-D LV ester	1-1.5 pt or 0.5-1 pt	Spring 5-leaf thru tillering	Do not treat winter barley with 2,4-D in the fall. Follow with small grain on Glean treated fields. For wild buckwheat use Brominal/Buctril as listed for winter wheat. Cost: 2,4-D \$.65-\$1.50; Glean \$2.85; Ally + 2,4-D \$3.00.
Glean	0.17 oz	Broadleaf weeds less than 2"	
Ally + 2,4-D LV ester	0.10 oz + 4 oz	Before May 1	

### HARVEST AID

2,4-D LV ester	1 qt	Hard dough 7 or more days before harvest	Rescue for control of late broadleaf weeds. Only certain brands labeled for this use. Cost: \$2.50.
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## OATS

MCPA	0.5-1 pt	Weeds and oats in 3-4 leaf stage	Cost: MCPA \$.75-\$1.50; Buctril + 2,4-D \$6.15-\$9.00; Brominal
Brominal ME4 or Buctril 2EC	0.5-0.75 pt or 1-1.5 pt		
+ 2,4-D amine or MCPA	0.5 pt		
2,4-D amine	0.5-1 pt	3-4 leaf stage of oats	Some injury from 2,4-D may be expected at any stage. Cost \$1.00.
Glean	0.17 oz	Broadleaf weeds less than 2"	Follow with small grain. Cost: \$2.85.

### HARVEST AID

2,4-D LV ester	1 qt	Hard dough 7 or more days before harvest	Rescue for control of late broadleaf weeds. Only certain brands labeled for this use. Cost \$2.50.
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## WINTER WHEAT

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
2,4-D amine or 2,4-D LV ester	1-1.5 pt or 0.5-1 pt	Early spring before joint stage or late fall after tillering	Do not spray winter wheat until well tillered. Spray broadleaf weeds as soon as good growing conditions occur. For blue mustard control, spray Nov. 15-Mar 15 before stem elongation. Cost: \$.65-\$1.50.
Bronate 4EC or Brominal 3+3 Brominal ME4 or Buctril 2EC + 2,4-D amine	1-1.5 pt or 0.7 + 1 pt 0.5-0.75 pt or 1-1.5 pt + 0.5 pt	Wheat well tillered	Most broadleaf weeds should be in 2-4 leaf stage or mustards in early rosette stage. Cost: \$.65-\$1.50.
Banvel + 2,4-D amine	4 oz +	Before wheat joints	Controls most troublesome broadleaf weeds. Cost: \$2.35.
Glean + Surfactant	0.75-1 pt 0.17-0.5 oz +	Fall after wheat is in 2-3 leaf stage and broadleaf weeds under 2"; about Apr 1	Controls most troublesome broadleaf weeds. Add 0.25% surfactant if weeds are present. Do not use on soils with pH above 7.9. Use in wheat, wheat-allow or wheat-spring small grain rotations. Cost: Glean \$2.85-\$7.50; Ally + 2,4-D \$3.00.
Glean + 2,4-D LV ester Ally + 2,4-D LV ester	0.17-0.5 oz +	2-4" broadleaf weeds	
	4 oz		
	0.10 oz + 4 oz	Spring only	

## HARVEST AID

2,4-D LV ester	1 qt	Hard dough 7 or more days before harvest	Rescue for control of late broadleaf weeds. Only certain brands labeled for this use. Cost: \$2.50.
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## PROSO MILLET Tilled Seedbed

Herbicide	Commercial product per Acre			Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM	
AATREX/ATRAZINE 4L	1-2 pt	2 pt	3 pt	EPP, PPSA, PPI or PRE...Do not use on foxtail millets. Cost \$1.20-\$2.40.

## PROSO MILLET Postemergence

Herbicide	Rate Per Acre <sup>7</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
2,4-D amine + Banvel	0.67 pt +	Proso in 2-5 leaf stage	Broadleaf weeds should be small. Observe all Banvel precautions when susceptible crops are within 1/2 mile of application site. Cost: \$2.25.
	0.25 pt		

## SUNFLOWER Tilled Seedbed

Herbicide	Commercial product per Acre			Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM	
TREFLAN 4EC	1 pt	1.5 pt	2 pt	PPI...For best results immediately incorporate. Read label for carryover precautions. Sensitive crops may be injured the following year. Cost: \$3.00-\$6.00;
SONALAN 3EC	1.5 pt	2 pt	3 pt	PPI or PRE...Incorporate into the upper 0-2 inches of soil. Cost: \$15.12-\$22.68.
PROWL	1.5 pt	2 pt	2.5 pt	
AMIBEN DS	2.4 lb	3 lb	3.6 lb	
LAISO 4EC	2 qt	2.75 qt	3.5 qt	Surface mix within 7 days before planting or apply PRE within 5 days after planting. Cost: \$10.00-\$17.00.

## SUNFLOWER Postemergence

Herbicide	Rate Per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Poast + Dash + 28% UAN	1 pt +	Shattercane and corn 12-18"; other annual grasses less than 4"	Good coverage essential. Cost: \$11.50
	1 gal + 1 qt		



Ecofarming (Ecofallow) is a system based on quality winter wheat stubble. Good quality stubble is the result of growing a winter wheat variety competitive with weeds along with good disease and insect resistance. Proper planting date, fertilized according to needs, weed control in the growing wheat, harvested with minimum grain loss and good chaff and long straw distribution all contribute to the success of this program. Also required is excellent herbicide application. If non-selective herbicides are being applied, weather and weed conditions need to be correct for good results. Atrazine, Bladex, Conquest, Extrazine, Gramoxone, Cyclone, Roundup or Landmaster will control established broadleaf weeds, grasses or volunteer wheat depending on plant height. If grasses are less than 3" tall, atrazine, Bladex, Conquest or Extrazine will provide acceptable control. Control is improved when crop oil concentrate or 28% nitrogen are added. When planting corn, 2,4-D ester may also be added for improved weed control. Gramoxone and Cyclone should be applied with X-77 to grasses less than 4" tall. If grasses are taller than 4" and are growing vigorously, apply Roundup<sup>1</sup> or Landmaster<sup>1</sup>. Do not mix Roundup with other herbicides. Kill volunteer wheat and annual bromes in April to prevent soil moisture loss.

Volunteer winter wheat and/or downy brome are not usually controlled in the fall and spring with July and early August atrazine treatments. A split after harvest treatment with the early application atrazine rate reduced so 1 lb/A of atrazine can be applied in September can be an effective control measure. If maximum rates of atrazine have been applied the previous fall do not add additional atrazine in the spring. Lower rates of atrazine or Glean (or none at all) should be used on eroded areas, on soils with less than 1.2% OM, on soils with a pH of 6.8 or greater, some terraces, Canyon and Rosebud soils, and caliche outcroppings. High atrazine rates may carryover and destroy wheat on these areas. Total atrazine applied last year after wheat harvest plus this years treatment should not exceed 3.75 lb 80W or 3 qt 4L/A.

Fields not treated after harvest with AAtrex/Atrazine are not true ecofallow. Therefore, herbicides might not be as effective and grain yields may be poorer than fields treated in fall. If moisture was present after harvest and weeds produced seed, weed pressure may be great enough that weed control with herbicides at rates that do not cause crop injury may be difficult. Also the moisture lost after harvest may be critical to the crop if the moisture during the winter and spring is limited. With these considerations and if one wishes to try the spring only treatment, the following is suggested: Add or increase the AAtrex/Atrazine to the maximum rate the crop can tolerate and still not cause damage to the succeeding crop. Be sure to add a grass herbicide. Add Gramoxone after April 15 at 1.5 to 2 pt depending upon size of weeds. Rates suggested depending on soil type, pH, OM, time of application and weed size.

For corn 1.5 to 2.5 qt/A AAtrex/Atrazine  
For grain sorghum 1.25 to 2.25 qt/A AAtrex/Atrazine  
For proso millet 0.75 to 1 qt/A AAtrex

Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam	Silt Loam	Silty-Clay Loam		
	1 % OM	1 -2 % OM	2 % OM		
<b>Winter Wheat Stubble, to be Seeded 2-3 Months Later to Winter Wheat (Continuous Wheat)</b>					
Bladex 90DF	2.2 lb	3.1 lb	3.1 lb	70 days prior to planting	For grasses more than 2" tall add 1.5-2.5 pt Cyclone <sup>1</sup> /A or 54-86 oz Landmaster <sup>1</sup> /A with Bladex. For broadleaf weeds add 1 qt/A 2,4-D LV ester to Bladex treatment. If volunteer wheat develops later, treat with Roundup <sup>1</sup> , Cyclone <sup>1</sup> or Landmaster <sup>1</sup> . To facilitate drilling stubble should be no taller than 12" with good straw and chaff distribution. Cost: Bladex 70 days \$11.55-\$17.50; 45 days \$10.15-\$12.25; Roundup \$9.25-\$17.50; Landmaster \$6.25-\$8.50.
	1.8 lb	2.7 lb	2.7 lb	45 days prior to planting	
Roundup <sup>1</sup>	1-2 pt	1-2 pt	1-2 pt	Postemergence; two or more applications required. Wait 30 days before planting wheat	
Landmaster <sup>1</sup>	54-64 oz	54-64 oz	54-64 oz		

**Winter Wheat Stubble to be Seeded 12-14 Months Later to Winter Wheat**

Winter Wheat Stubble Free of Grass Weeds				
AAtrex 4L	1 pt	2 pt	2 pt	
Bladex 90DF	1.8 lb	2.2 lb	2.2 lb	Aug 10-Sept 10 (12 months or more before seeding)
+ Atrazine 4L	+ 1 pt	+ 1.5 pt	+ 1.5 pt	
Glean	0.33 oz	0.5 oz	0.5 oz	
+ AAtrex 4L	+ 1 pt	+ 2 pt	+ 2 pt	

Add 1 qt/A 2,4-D LV ester for broadleaf weed control. Volunteer wheat and downy brome control are better with late Aug. and early Sept. application. Cost: AAtrex \$1.20-\$2.40; Bladex + Atrazine \$9.75-\$12.75; Glean + AAtrex \$6.85-\$10.90.

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Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM		
Winter Wheat Stubble with Grass Weeds					
AAtrex 4L + Cyclone <sup>1</sup>	1 pt + 1.5-2 pt	2 pt + 1.5-2 pt	2 pt + 1.5-2 pt		Spray before weeds produce seed. Volunteer wheat and Downy brome control are better with late Aug. and early Sept. application. Add 1 pt 2,4-D LV ester to AAtrex + Cyclone and 1 qt 2,4-D LV ester to Igran + AAtrex to improve control of emerged grass and broadleaf weeds. Cost: AAtrex + Cyclone \$7.65-\$14.55; Igran + AAtrex \$10.55-\$14.15; Bladex + Atrazine + Cyclone + 2,4-D \$13.00-\$19.20; AAtrex + Cyclone + Glean \$13.30-\$23.05; AAtrex + Roundup + Glean \$15.35-\$29.60; AAtrex + Landmaster + Glean \$15.00-\$24.40; AAtrex + Landmaster + Ally \$11.80-\$18.40; AAtrex + Cyclone + Ally \$10.10-\$15.55; AAtrex + Cyclone + Glean \$12.85-\$21.55; AAtrex + Roundup + Ally \$12.25-\$24.75.
Igran 4L <sup>1</sup> + AAtrex 4L	1.6-2 qt + 1 pt	1.6-2 qt + 2 pt	1.6-2 qt + 2 pt		
Bladex 90DF + Atrazine 4L + Cyclone <sup>1</sup> + 2,4-D LV ester	1.1 lb + 1 pt + 1.5-2 pt + 1 pt	1.1 lb + 1.5 pt + 1.5-2 pt + 1 pt	1.1 lb + 1.5 pt + 1.5-2 pt + 1 pt	Aug 10-Sept 10 (12 months or more before seeding)	
AAtrex 4L + Cyclone <sup>1</sup> with Glean or with Ally	1 pt + 1.5-2 pt 0.33 oz 0.1 oz	2 pt + 1.5-2 pt 0.5 oz 0.1 oz	2 pt + 1.5-2 pt 0.5 oz 0.1 oz		
AAtrex 4L + Roundup <sup>1</sup> or Landmaster <sup>1</sup> with Glean or with Ally	1 pt + 1 pt 54-86 oz 0.33 oz 0.1 oz	2 pt + 1 pt 54-86 oz 0.5 oz 0.1 oz	2 pt + 1 pt 54-86 oz 0.5 oz 0.1 oz		
Winter Wheat Stubble to be Seeded 4-5 Months Later to Winter Wheat					
Bladex 90DF + Cyclone <sup>1</sup>	2.7 lb + 1.5-2 pt	2.9 lb + 1.5-2 pt	3.1 lb + 1.5-2 pt	Mar-Apr 15 or before boot stage of weeds	
Roundup <sup>1</sup> or Landmaster <sup>1</sup>	1 pt or 54 oz	1 pt or 54 oz	1 pt or 54 oz	Post in Apr or before boot stage of weeds	
Roundup <sup>1</sup> or Landmaster <sup>1</sup> + Glean	1 pt or 54 oz + 0.33 oz	1 pt or 54 oz + 0.5 oz	1 pt or 54 oz + 0.5 oz		
2,4-D LV ester + Banvel	1 qt + 0.5 pt	1 qt + 0.5 pt	1 qt + 0.5 pt	May-Aug for broadleaf weeds	
Glean	0.33 oz	0.5 oz	0.5 oz	Preemergence in Feb-Aug	
Winter Wheat Stubble to be Planted to Corn, Sorghum, or Proso Millet the Next Spring					
Stubble Free of Grass Weeds					
AAtrex/Atrazine 4L or 1.5 qt	2 qt or 1.5 qt	2.5 qt or 2 qt	3 qt or 2.5 qt	Jul-Aug or Sep-Nov for corn and sorghum	1 qt/A 2,4-D ester or 1 pt Banvel improves annual or perennial broadleaf weed and annual grass control. Spray before weeds produce seed. Use 1-1.2 qt Atrazine 4L in Panhandle. Cost: \$2.40-\$7.20.
AAtrex/Atrazine 4L or 1 qt	1.25 qt or 1 qt	1.5 qt or 1.3 qt	2 qt or 1.6 qt	Jul-Aug or Sep-Nov for proso millet	

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Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM		
Stubble With Grass Weeds					
AAtrex/Atrazine 4L	2 qt or 1.5 qt	2.5 qt or 2 qt	3 qt or 2.5 qt	Jul-Aug or Sep-Nov	Spray after wheat harvest and before weeds produce seed. If grasses such as barnyardgrass recover use sweep plow before weeds develop seed. Use 1-1.2 qt Atrazine in Panhandle. Cost: Atrazine + Cyclone \$10.00-\$19.35; Igran + AAtrex \$12.30-\$18.85; Igran + AAtrex + Cyclone \$14.10; \$23.00; AAtrex + Roundup \$15.85-\$27.70; AAtrex + Landmaster \$13.60-\$20.30.
+ Cyclone <sup>1</sup>	+ 1.5-2 pt	+ 1.5-2 pt	+ 1.5-2 pt	for corn and sorghum	
AAtrex/Atrazine 4L	1.25 qt + 1.5-2 pt	1.5 qt + 1.5-2 pt	2 qt + 1.5-2 pt	Jul-Aug for Proso millet	
AAtrex/Atrazine 4L	2 qt or 1.5 qt	2.5 qt or 2 qt	3 qt or 2.5 qt	Jul-Aug or Sep-Aug	Proso millet--Sep-Nov applications reduce AAtrex/Atrazine rate by 20%.
+ Igran 4L <sup>1</sup>	+ 1.6-2 qt	+ 1.6-2 qt	+ 1.6-2 qt	for corn and sorghum	
AAtrex/Atrazine 4L	2 qt or 1.5 qt	2.5 qt or 2 qt	3 qt or 2.5 qt	Jul-Aug or Sep-Nov	
with Igran 4L <sup>1</sup>	+ 1.6 qt	+ 1.6 qt	+ 1.6 qt	for corn and sorghum	Volunteer wheat and downy brome control better with late Aug.- Nov.
+ Cyclone <sup>1</sup>	+ 1.5 pt	+ 1.5 pt	+ 1.5 pt		
AAtrex/Atrazine 4L	2 qt or 1.5 qt	2.5 qt or 2.0 qt	3 qt or 2.5 qt	Jul-Aug or Sep-Nov	
with Roundup <sup>1</sup>	+ 1-2 pt	+ 1-2 pt	+ 1-2 pt	for corn and sorghum	
or with Landmaster <sup>1</sup>	or 54-86 oz	or 54-86 oz	or 54-86 oz		
AAtrex/Atrazine 4L	1.25 qt with Roundup <sup>1</sup>	1.5 qt + 1-2 pt	2 qt + 1-2 pt	Jul-Aug. for Proso millet	
or with Landmaster <sup>1</sup>	or 54-86 oz	or 54-86 oz	or 54-86 oz		
Winter Wheat Stubble to be planted to Soybeans the following Spring <sup>2</sup> (For Areas With Over 20" Rainfall)					
Landmaster <sup>1</sup>	54-86 oz	54-86 oz	54-86 oz	2 applications	Volunteer wheat may emerge in fall or spring; control with Roundup. Cost: Landmaster \$8.50-\$13.50 app.
Corn Planted in Wheat Stubble Treated with AAtrex/Atrazine After Harvest <sup>1,2</sup>					
Bladex 4L	2 qt	2 qt	2.5 qt	0-30 days preplant	Do not use on sands and loamy sands with less than 1% OM. Cost: Bladex \$9.40-\$11.75; Bladex + Atrazine \$7.40-\$10.65; Bladex + Dual \$16.45-\$21.90.
Bladex 4L	1.25 qt	1.5 qt	1.75 qt	0-15 days preplant	
+ AAtrex/Atrazine 4L	+ 0.75 qt	+ 1 qt	+ 1 qt		
Bladex 4L	1.5 qt	1.75 qt	2 qt		If annual grasses produced seed in the grain stubble or if areas of field have history of high grass population use higher rates of Dual or Lasso. Cost: Dual \$15.65-\$18.75; Dual + AAtrex \$10.30-\$14.90; Lasso + AAtrex \$11.70-\$15.90; Lasso + Bladex \$17.85-\$22.90; Bronco \$28.00-\$32.00; Bronco + Atrazine \$29.80-\$34.40.
+ Dual 8E	+ 0.75 qt	+ 1 qt	+ 1 qt		
Dual	2 pt	2.5 pt	3 pt		
				0-20 days preplant	
Dual 8E	1.5 pt	2 pt	2 pt		0-5 days preplant
+ AAtrex 4L	+ 0.75 qt	+ 1 qt	+ 1 qt		
Lasso 4EC	2 qt	2.5 qt	2.5 qt		
+ AAtrex 4L	+ 0.75 qt	+ 1 qt	+ 1 qt		
or Bladex 4L	or 1.5 qt	or 1.75 qt	or 2 qt		
Bronco	3.5 qt	4 qt	4 qt		
Bronco	3.5 qt	4 qt	4 qt		
+ AAtrex 4L	+ 0.75 qt	+ 1 qt	+ 1 qt		
Proso Millet Planted in Stubble Treated with Atrazine After Harvest <sup>2</sup>					
AAtrex 4L	0.25 qt	0.5 qt	0.5 qt	0-20 days preplant	Add 1.5-2 pt Cyclone <sup>1</sup> if emerged weeds are present. Do not use AAtrex if soil pH is above 7.5. Cost: \$0.60-\$1.20.



Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM		
<b>Soybeans Planted into Wheat Stubble Treated With Sencor/Lexone or Landmaster After Harvest<sup>2</sup></b> (For Areas With Over 20" Rainfall and Fields With Low Weed Pressure)					
Dual 8E + Sencor/Lexone 4L	Do not use	2 pt + 0.75 pt	2.15 pt + 0.9 pt	1-20 days preplant	Add 1.5-2 pt Cyclone <sup>1</sup> if there are emerged weeds. Russian thistle, kochia, sunflower, lambsquarters, and velvetleaf may be difficult to control. Follow Sencor/Lexon label for soil type. Substitute Lorox for Sencor/Lexone if there is Atrazine carryover. Check fields with in 30 days after planting to determine if postemergence herbicides are needed. Cost: Dual + Sencor/Lexone \$22.00-\$27.00; Lasso + Sencor/Lexone \$22.95-\$27.55; Prowl + Sencor/Lexone \$16.35-\$18.25; Surflan + Sencor/Lexone \$25.20-\$28.85; Bronco + Sencor/Lexone \$41.45-\$43.35.
Prowl 4EC + Sencor/Lexone 4L	Do not use	3 pt + 0.75 pt	3 pt + 0.9 pt		
Surflan AS + Sencor/Lexone 4L	2 pt + 0.6 pt	2.25 pt + 0.75 pt	2.5 pt + 0.9 pt	20 days preplant	
Lasso 4EC + Sencor/Lexone 4L	Do not use	2.5 qt + 0.75 pt	3 qt + 0.9 pt	0-5 days preplant	
Bronco + Sencor/Lexone	Do not use	4 qt + 0.75 pt	4 qt + 0.9 pt		
<b>Grain Sorghum Planted in Wheat Stubble Treated With AAtrex/Atrazine After Harvest<sup>2</sup></b>					
Bladex 4L	2 qt 2.5 qt	2.5 qt 3 qt	3 qt 3.5 qt	28 days preplant 35 days preplant	Add 1.5-2 pt Cyclone <sup>1</sup> or 54 oz Landmaster for emerged weeds if Bronco is not used. Seed must be treated with Concep for Dual or Screen for Lasso or Bronco treatments. Cost: Dual \$9.40-\$12.50; Dual + AAtrex \$10.65-\$14.90; Lasso + Atrazine \$12.00-\$15.90; Bronco \$28.00-\$32.00; Bronco + Atrazine \$29.20-\$34.40; Lasso + Bladex \$17.85-\$22.90; Bladex \$9.40-\$14.10; Bladex + Atrazine \$6.40-\$15.30; Bladex + Dual \$20.00-\$24.25;  *21 days or more preplant when used on sandy soil.
Bladex 4L + Atrazine 4L	1.2 qt* + 0.3 qt*	1.5 qt + 0.4 qt	2 qt + 0.5 qt	14 days preplant	
Bladex 4L + Atrazine 4L	1.6 qt + 0.4 qt	2 qt + 0.5 qt	2.5 qt + 0.5 qt	28 days preplant	
Bladex 4L + Atrazine 4L	2 qt + 0.5 qt	2.5 qt + 0.5 qt	3 qt + 0.5 qt	35 days preplant	
Bladex 4L + Dual 8E	1.25 qt + 1.5 pt	1.6 qt + 1.5 pt	2 qt + 1.75 pt	14 days preplant	
Bladex 4L + Dual 8E	1.6 qt + 2 pt	2 qt + 2 pt	2.5 qt + 2 pt	28 days preplant	
Dual 8E	2.0 pt	2.25 pt	2.5 pt	0-20 days preplant	
Dual 8E + AAtrex 4L	1.5 pt + 0.5 qt	2 pt + 1 qt	2 pt + 1 qt		
Lasso 4EC + AAtrex 4L or Bladex 4L	2 qt + 0.5 qt or 1.5 qt	2.5 qt + 1 qt or 1.75 qt	2.5 qt + 1 qt or 2 qt	0-5 days preplant	
Bronco	3.5 qt	4 qt	4 qt		
Bronco + AAtrex 4L	3.5 qt + 0.5 qt	4 qt + 1 qt	4 qt + 1 qt		
Igran 4L	1.6 qt	1.8 qt	2.0 qt	1-7 days preplant	
Igran 4L + AAtrex 80W	1.2 qt + 0.5 lb	1.6 qt + 0.75 lb	1.6qt + 1 lb		

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Herbicide	Commercial product per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM	Silt Loam 1 -2 % OM	Silty-Clay Loam 2 % OM		
<b>Winter Wheat Planted in Less Than Six Months in Wheat Ecofallow Corn/Sorghum-Fallow Rotation</b> (Treat Ecofallow corn or sorghum stubble)					
Bladex 4L + 2,4-D LV ester	3 qt + 1.5 pt	3 qt + 1.5 pt	3.5 qt + 1.5 pt	Mar-Apr 10	Early application necessary to control winter annuals. Use Roundup for control of downy brome before heading, volunteer corn or sorghum. Do not plant wheat for 20 days after using 2,4-D and Banvel. Follow-up weed control may be necessary. Cost: Bladex + 2,4-D \$16.00-\$18.35; Bladex + Cyclone \$20.25-\$22.60; Landmaster + Glean \$14.25-\$17.00; Roundup + Glean \$14.25-\$17.00; Landmaster \$6.26-\$8.40; 2,4-D + Banvel \$5.65.
Bladex 4L + Cyclone <sup>1</sup>	2.5 qt + 1.5-2.5 pt	2.5 qt + 1.5-2.5 pt	3 qt + 1.5-2.5 pt	Apr 15- May 1	
Roundup <sup>1</sup> or Landmaster + Glean	1 pt or 54 oz + 0.33 oz	1 pt or 54 oz + 0.5 oz	1 pt or 54 oz + 0.5 oz	Apr 15- May 1	
Landmaster <sup>1</sup>	40-54 oz	40-54 oz	40-54 oz	Apr 15- May 1	
2,4-D LV ester + Banvel	1 qt + 0.5 pt	1 qt + 0.5 pt	1 qt + 0.5 pt	Broadleaf weeds less than 4"	

## WEED RESPONSE TO SELECTED ALFALFA HERBICIDES

Response Ratings: E = Excellent (90-100%) G = Good (75-90%) F = Fair (50-75%) P = Poor (0-50%)	barnyardgrass	dandelion	downy brome	field pennycress	foxtail	kochia	lambsquarters	pigweed	R. thistle	sandbur	shepherdspurse	tansy mustard	crop tolerance	
	Preplant													
	Balan	E	P	E	P	E	G	E	G	G	G	P	P	G
	Eptam/Genep	E	P	E	P	E	G	G	G	P	G	P	P	G
Treflan	E	P	E	P	E	F	G	G	P	G	P	P	F	
Seedling or Established														
Butyrac/Butoxone	P	P	P	P	P	P	F	P	F	P	P	P	G	
Kerb	G	P	P	P	G	G	F	G	G	G	P	P	G	
Poast	E	P	G	P	G	P	P	P	P	E	P	P	E	
Established														
Karmex	E	F	F	G	E	E	G	G	F	F	E	E	G	
Lexone/Sencor	G	G	E	E	F	E*	E	E	G	P	E	E	G	
Paraquat	F	P	F	P	F	P	P	P	P	P	P	P	G	
Sinbar	F	G	E	E	F	G	E	E	G	F	E	E	G	
Velpar	F	G	E	G	F	G	G	G	G	F	E	E	G	

\*Poor on Atrazine resistant kochia.

## FORAGE CROPS, PASTURES AND RANGES

Area or Use	Herbicide	Commercial Product per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
ALFALFA (Establishing new stands)	Balan 1.5EC	3-4 qt	Preplant	Apply to dry surface soil and immediately incorporate by cross tandem discing or equivalent soil mixing. Use lower rate on sandy soil. Early legume injury may occur. Controls primarily annual grasses. Cost: Balan \$11.10-\$14.80; Eptam/Genep \$7.65-10.70; Treflan \$3.00-\$4.50.
	Eptam 7E/Genep	2.5-3.5 pt		
	Treflan	1-1.5 pt		
	Poast	1 pt	Grasses 4" or less	Good coverage necessary. Use crop oil or surfactant. Cost: \$11.50.



Area or Use	Herbicide	Commercial Product per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
ALFALFA (Seedling or established)	Butyrac or Butoxone (2,4-DB)	1-3 qt	Postemergence. Weeds less than 3" tall; alfalfa 2-4 trifoliate leaves	For broadleaf weeds. Rate varies with formulation and weed size. Do not use treated forage for 60 days. Do NOT confuse with 2,4-D. Use when temperature is above 50 F. Cost: \$3.50-\$10.50.
	Kerb 50W	1-1.5 lb	Pre- or post-emergence to winter annual grasses late Oct thru mid-Mar	Controls downy brome in established or seedling alfalfa with 3 or more trifoliate leaves. Moisture necessary for chemical activity. Kerb helps control sandbur. Cost: \$14.70-\$22.05.
ALFALFA (Established one year or more)	Karmex 80W	1.5-3 lb	Late fall to early spring to dormant alfalfa	Primarily for winter annual weeds such as pennycress and other mustards. Sinbar and Lexone/Sencor also control downy brome. Do not use on sand; use lowest rates on soils with less than 1% organic matter. Karmex works best on high pH soils. Spring application of Karmex controls annual warm season grasses such as foxtail and barnyardgrass. Cost: Karmex \$6.00-\$12.00; Sinbar \$10.50-\$21.00; Lexone/Sencor \$9.50-\$19.00.
	Sinbar 80W	0.5-1 lb	Late fall or early spring	
	Lexone/Sencor DF	0.5-1 lb		
GRASS SEEDLINGS (Cool and Warm season grasses)	2,4-D	1 pt	Grass 5-leaf stage or beyond	For broadleaf weeds. After grasses are well established, increase rate to 1 qt. Cost: \$.65-\$1.50.
WARM-SEASON GRASSES FOR SEED	AAtrex 4L	1.5-3 qt	Spring or fall before weed emergence	Do not use until second year after seeding. Less effective in heavy plant residues. Use lower rate on sandy soils. Cost: \$3.60-\$7.20.
BIG BLUESTEM AND SWITCHGRASS (Established & new seedings)	AAtrex 4L	1-2 qt	Preemergence within 1 week after planting	Makes reduced seeding rates possible. Controls many annual grasses and broadleaf weeds. Use the lower rate on sandy, high pH or low organic matter soil. Do not cut for hay or graze for 3 months. Cost: \$4.80.
RANGELAND	AAtrex 4L	1-2 pt	Fall only	Controls winter annual bromes. Injures cool season grasses. Do not hay or graze for 7 months. Reduce grazing pressure to improve grass stands. Apply only on neutral to acid soils. Cost: \$1.20-\$2.40.
NATIVE GRASS RENOVATION (Eastern Nebraska on non-sandy soil with 1% or more organic matter)	AAtrex 4L	2 qt	Fall or early spring	To renovate native pastures containing big bluestem and switchgrass. If remnants are sparse, sod seed. Controls bluegrass, most annual grasses and broadleaf weeds, suppresses smooth brome. Do not cut for hay. Cost: \$4.80.
SOD SEEDING (Legumes into grass)	Gramoxone Super	1.5-3 pt	Before or immediately after legume seeding	Suppresses established sod. Seed legumes with a sod seeder. If grass is less than 3" use lower rate. During year of establishment, graze intensively for short periods only. Add X-77 surfactant. Cost: \$6.50-\$12.20.
SOD SEEDING (Native grass planted no-till into short grass range)	Roundup	1 qt in 10 gal or less water/A	Aug the season prior to seeding	Suppresses established sod. Seed grasses with a sod seeder. Do not graze seeded area until dormancy after second growing season. Apply in no more than 10 gallons water per acre and add 2 qt X-77 and 17 lb ammonium sulfate per 100 gallons. Cost: \$9.00-\$17.50.
	Roundup	1 pt	Spring on cool season grasses	
ANNUAL OR BIENNIAL BROAD-LEAF WEEDS IN PASTURES AND RANGES (For specific weeds see page ____.)	2,4-D	1 qt	Rosette stage in fall or when weeds are small in spring	Withhold milk cows from grazing treated areas for 7 days. With Banvel mixture do not harvest hay for dairy animals within 37 days. Do not use Banvel within 1/2 mile of sensitive crops. Combination controls greater variety of weed species. Cost: 2,4-D \$2.00; 2,4-D + Banvel \$5.15.
	2,4-D + Banvel	1 qt + 0.5 pt		



Area or Use	Herbicide	Commercial Product per Acre <sup>3</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
PERENNIAL BROADLEAF WEEDS IN PASTURES AND RANGES (includes vervains, broom snakeweed, western ironweed, woolly loco, Flodman thistle, and wavy leaf thistle. For other weeds see page .)	2,4-D	1.5 qt	At bud stage of predominant weed. Oct or Apr for dandelions and musk thistle	Annual treatment for 2-3 years may be necessary. Withhold lactating dairy cows from treated areas for 7 days. With Banvel mixture do not harvest hay for dairy animals for 37 days. Do not use Banvel within 1/2 mile of sensitive crops. Cost: 2,4-D \$3.00; 2,4-D + Banvel \$8.35.
	2,4-D + Banvel	1 qt + 1 pt		

## CRP ACRES

Herbicide	Commercial product/A	Application time	Remarks and approximate cost/A
Roundup	1 pt	Before or at grass seeding	Will control most emerged grass and broadleaf weeds. Apply Roundup in 10 GPA carrier or less and include surfactant at 0.5% v/v. Ammonium sulfate added at 17 lbs per 100 gal solution may improve Roundup performance. Add surfactant at 0.25% v/v to Cyclone. Cost: Roundup \$9.00; Cyclone \$9.00-\$11.70.
2,4-D amine or ester	1-2 pt	At least 30 days before grass seeding	Controls most broadleaf weeds. Both treatments may injure grass seedlings if applied less than 30 days before planting. Cost: 2,4-D \$1.25-\$2.50; Landmaster \$7.00-\$12.60.
Landmaster	40-72 oz		
Glean 75 DF**	0.33 oz	Preemergence to grasses (before or after grass seeding)	Controls most broadleaf weeds. Do not use on soils with pH greater than 7.9. May be tank mixed with Roundup plus surfactant to control emerged grass weeds. Will injure legumes. Cost: \$5.65.
AAtrex 4L	1-2 qt	After planting but before grass emerges	For use on switchgrass and big bluestem stands only. Will injure or kill legumes in grass/legume mixtures. Use lower rate on high pH soils with less than 1% organic matter. May be tank mixed with Roundup or Cyclone to control emerged weeds at application. Cost: \$2.40-\$4.80.
2,4-D amine or ester	1 pt	After 5-leaf stage of grass	Controls most broadleaf weeds. Reduce rate to 0.5-0.75 pint if used on warm-season grasses. Will injure or kill legumes. Cost: \$2.50.
Banvel + 2,4-D	0.25-0.5 pt + 0.5 -1 pt	After 5-leaf stage of grass	Controls most broadleaf weeds. Use lower rates warm-season grasses. Do not use on grass/legume mixtures. Established grasses may be treated with 0.5-1 pt Banvel + 0.5-2 pt 2,4-D for perennial weed control. Cost: \$3.75-\$7.60.
Buctril 2EC or Brominal ME4	1.5-2 pt or 0.75-1 pt	After 3-leaf stage of grass	Controls many broadleaf weeds. Apply in minimum 10 GPA by air. May be used on grass/legume mixtures after third trifoliate leaf stage of alfalfa. May be tank mixed with 2,4-D or MCPA for improved control. Tank mix may injure or kill legumes. Cost: \$8.40-\$11.25.
Glean 75 DF*	0.33-0.5 oz	After 3-4 leaf stage of grass	Controls most broadleaf weeds. Do not use on soils with pH greater than 7.9. Do not use on grass/legume mixtures. Add surfactant at 0.25% v/v when weeds are emerged. Cost: \$5.65-\$8.50.
Ally DF**	0.1 oz	After 3-4 leaf stage of grass	Controls most broadleaf weeds. Do not use on soils with pH greater than 8.0. Do not use on grass/legume mixtures. Add surfactant at 0.25% v/v. Cost: \$2.50.

\* Glean may be applied preemergence (at not more than 0.33 oz/acre) or postemergence (at not more than 0.5 oz/acre) to the following grasses:

Blue grama, bluestem, meadow or smooth bromegrass, buffalograss, galleta, green needlegrass, indian ricegrass, prairie sandreed, sand dropseed, sand lovegrass, side oats grama, switchgrass, wheatgrass, and Russian or beardless wild-rye. Glean may be applied to tillered bentgrass and orchardgrass postemergence only and at not more than 0.5 oz/acre.

\*\* Ally can be applied postemergence only at 0.1 oz/acre to the following grasses:

Meadow and smooth bromegrass, orchardgrass, Russian wild-rye, and crested, intermediate, western, tall, bluebunch, pubescent, slender Siberian, streambank, and thickspike wheatgrass.



## NON-CROP AREAS

Area or Use	Herbicide <sup>3</sup>	Commercial Product <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
ROADSIDES (Broadleaf weed control)	2,4-D	1 qt/A	Broadleaf weeds 2-6"	Repeat treatments may be necessary. <b>Do not use Banvel or Tordon near susceptible plants/trees.</b> Cost: 2,4-D \$2.00; 2,4-D + Banvel \$8.35; Tordon \$46.00.
	2,4-D + Banvel	1 qt/A + 1 pt/A		
	Tordon 212	2 qt/A	Postemergence	
GRASS SUPPRESSION	Oust	1 oz/A	Preemergence or early post to weeds	Do not apply to bare soil. May move if soil moves. Suppresses height and heading of brome grass and other cool season grasses. Controls most annuals. Trace amounts can harm crops and gardens. Imperative that label directions are read and followed. Cost: \$7.50-\$15.00.
IRRIGATION DITCHBANKS	Karmex 80W	5-10 lb/A	Soon after ditches are open. Treat before weeds appear or soon thereafter	Use enough water to insure good coverage. Use 50 mesh to coarser screens. May injure nearby trees and shrubs. Cost: Karmex \$23.00-\$46.00; AATrex/Atrazine \$14.40; Princep \$23.40.
	AATrex/Atrazine 4L <sup>3</sup> or Princep 4L <sup>3</sup>	1.5 gal/A or 1.5 gal/A		
	2,4-D	1 qt/A	Broadleaf weeds 2-6"	Cost: \$2.00.
	Roundup 3WS	1-4 qt in 10 gal or less water/A	Postemergence when good growth is present	Nonselective. No residual control. Use the lower rate on annual weeds and perennial grasses, the higher rates on perennial broadleaf weeds. Cost: \$20.50-\$82.00
	Roundup in Herbie Applicator	1 qt in 1 gal water		
LONG TERM VEGETATION CONTROL	Arsenal	1 oz/1000 sq ft		Kochia has become resistant to triazines in some areas. Consult label for specific instructions on problem weeds and conditions. Do not use near root zones of trees or other desirable plants. <b>Do not use on land subject to erosion unless erosion is controlled.</b> Cost/1000 sq ft: Pramitol \$8.40; Hyvar \$3.25; Krovar \$4.30; Atrazine \$.30-\$.60; Karmex \$1.15-\$2.30; Princep \$.50-\$1.00; Spike \$2.50-\$5.00; Arsenal \$1.00.
	Pramitol 25E or Pramitol 5PS	4 pt/1000 sq ft or 10-20 lb/1000 sq ft		
	Hyvar X 80W or Hyvar XL 2WS	0.5 lb/1000 sq ft or 0.75 pt/1000 sq ft	Treat before weeds appear or soon thereafter	
	Krovar I 80W	0.5 lb/1000 sq ft		
	Atrazine 4L <sup>3</sup>	0.25-0.5 pt/1000 sq ft		
	Karmex 80W	0.25-0.5 lb/1000 sq ft		
	Princep 4L <sup>3</sup>	0.25-0.5 pt/1000 sq ft		
	Spike 80W or Spike 5G	0.12-0.25 lb/1000 sq ft or 2-4 lb/1000 sq ft		
PERENNIAL GRASSES (including brome grass and quack-grass)	Roundup 3WS	2 qt/A in 10 gal or less water/A	Full foliage	
	Amitrol-T/Cytrol-T 2WS	2 gal/A		Nonselective. Perennial grasses should have good top growth. Kills all annuals. Cost: Roundup \$41.00; Amitrol-T \$40.00.



# WEED RESPONSE TO HERBICIDES IN SELECTED CROPS

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Plant response may be altered by growing conditions, genetic variation in crops and weeds, soil type, pH, organic matter and rates of application. Ratings may vary from season to season and geographical areas within the state. Ratings apply when herbicides are used at rates suggested.

## Response Ratings:

Ratings are for light to moderate weed populations and favorable conditions. High weed populations or adverse conditions will reduce control.

E = Excellent (90-100%)

G = Good (75-90%)

F = Fair (50-75%)

P = Poor (0-50%)

Herbicide and Application Site  
(pre on soil or post on foliage)

annual morningglory  
barnyardgrass  
cocklebur  
crabgrass  
fall panicum  
foxtail  
jimsonweed  
kochia  
lambsquarters  
nightshade  
pigweed  
ragweed  
R. thistle  
sandsbar  
shattercane/sorghum  
smartweed  
sunflower  
velvetleaf  
w. buckwheat  
crop safety<sup>a</sup>  
soil carryover potential in months<sup>b</sup>

## Potatoes

Eptam/Genep-pre	G	E	P	E	E	E	P	F	G	E	G	F	P	E	E	P	P	F	G	1-2
Eptam/Genep + Treflan or Prowl-pre	F	E	P	E	E	E	P	E	G	F	G	P	F	E	E	P	P	F	E	6-12
Sencor/Lexone-pre	P	G	F	G	G	G	G	F	E	F	E	E	G	P	P	G	F	G	E	2-6
Sencor/Lexone + Dual-pre	P	E	F	F	E	E	G	F	E	G	E	E	G	F	P	G	F	G	E	2-6
Sencor/Lexone-post	P	P	G	F	P	F	P	G	E	P	E	G	E	F	P	G	G	F	G	2-6

## Fieldbeans

Basagran-post	F	P	E	P	P	P	E	P	P	P*	P	G	P	P	P	E	E	G	G	E	0
Dual + Treflan-pre	F	E	P	E	E	E	P	F	G	G	G	P	F	E	E	G	P	P	F	E	6-12
Eptam/Genep or Eptam + Sonalan-pre	G	E	P	E	E	E	P	F	G	E	G	F	P	E	E	P	P	P	F	G	1-2
Eptam/Genep + Treflan or Prowl-pre	F	E	P	E	E	E	P	E	G	G	G	P	F	E	E	P	P	P	F	E	6-12
Eptam/Genep + Dual-pre	F	E	P	E	E	E	P	F	G	E	G	P	F	E	G	P	P	P	F	E	2-5
Eptam/Genep + Lasso-pre	F	E	P	E	E	E	P	G	G	E	E	P	F	E	G	P	P	P	F	E	2-4
Lasso or Dual-pre	P	E	P	E	E	E	P	P	G	G	G	G	P	F	P	P	P	P	P	G	2-4
Lasso + Treflan-pre	F	E	P	E	E	E	P	G	G	G	G	P	F	E	G	P	P	P	F	E	6-12

## Sugar Beets

Antor-pre	P	E	P	E	G	E	P	P	F	G	G	P	P	G	F	P	P	P	P	G	2-3
Eptam/Genep layby	G	E	P	E	E	E	P	F	G	E	G	F	P	E	E	P	P	P	F	G	1-2
Nortron-pre	-	G	F	G	G	G	-	G	G	F	E	-	F	F	-	G	P	-	G	G	5+
Nortron + Antor-pre	P	E	P	E	G	E	P	G	E	F	E	P	F	G	F	G	P	P	G	G	4
Ro-Neet-pre	P	E	P	E	E	E	P	P	G	G	E	F	P	G	G	P	P	P	P	G	1-2
Betanal + Betanex or Betamix-post	F	P	-	P	P	P	F	F	G	F	G	F	P	P	P	F	F	P	G	G	1/2
Betanex-post	F	P	-	P	P	P	P	F	G	F	G	F	P	P	P	F	F	P	F	G	1/2
Herbicide 273-post	P	F	-	P	P	F	P	F	F	F	F	P	P	P	P	G	G	P	G	G	1/2
Poast-post	P	E	P	E	E	G	P	P	P	P	P	P	P	E	E	P	P	P	P	E	0

## Onions

Dacthal 75W-pre	P	G	P	E	P	E	P	P	E	F	E	P	P	G	P	P	P	P	P	G	3-8
Brominal ME4-post	E	P	G	P	P	P	E	F	G	E	G	E	G	P	P	E	E	E	E	G	0
Goal-post	P	P	G	P	P	P		F	G	F	G		F	P	P					G	1-2

## Vine Crops

Dacthal 75W-pre	P	G	P	E	P	E	P	P	E	F	E	P	P	G	P	P	P	P	P	G	3-8
Treflan-pre	P	E	P	E	E	E	P	G	G	P	G	P	G	G	G	P	P	P	P	G	6-12
Prefar 4E + Alanap-pre	P	E	G	E	F	E			G		G	G		F	F			G		G	4-6

<sup>a</sup>Crop varieties vary in their response to herbicides.

<sup>b</sup>The lower number applied to eastern Nebraska, the large number of western Nebraska. Values will vary with soil and rainfall or irrigation. For more information see "Herbicide Carryover", G74-180.

\*Good control of hairy nightshade.



## POTATO AND FIELDBEAN HERBICIDES

Commercial product per Acre				Application Time, Remarks and Approximate Cost/A Broadcast
Sandy Loam	Silt Loam	Silty-Clay Loam		
1 % OM	1 -2 % OM	2 % OM		
Herbicide				
Potatoes				
EPTAM 7E/GENEP	3.5 pt	3.5 pt		PPI, DRAG-OFF or LAYBY...Apply and incorporate before planting or after potato plants have emerged. The Superior variety is sensitive to EPTC. Cost: \$10.70.
EPTAM 7E/GENEP + TREFLAN 4EC	2.5 pt + 1 pt	2.5 pt + 1 pt	2.5 pt + 1 pt	PRE UP TO and JUST BEFORE DRAG-OFF...Incorporate chemical immediately after application. Set incorporation equipment so that herbicide is not concentrated over the row. The Superior variety is sensitive to EPTC and injury may occur. Cost: Eptam/Genep + Treflan \$13.15; Eptam/Genep + Prowl \$11.40-\$12.55.
EPTAM 7E/GENEP + PROWL 4EC	3 pt + 1 pt	3 pt + 1.5 pt	3 pt + 1.5 pt	
SENCOR/LEXONE 4L	0.5-1 pt	0.5-1 pt	0.5-1 pt	POST BEFORE WEEDS ARE 1" TALL...Highest rate for sunflower and kochia. Do not use on red skinned or early maturing white varieties or within 60 days of harvest. Cost: \$6.30-\$12.60.
SENCOR/LEXONE 4L	1 pt	1.5 pt	2 pt	PRE, PPI, or DRAG-OFF AS PER LABEL...Do not plant treated area to sensitive crops such as onions or sugar beets during next growing season. Superior and Atlantic varieties are sensitive to Sencor/Lexone. Cost: Dual + Sencor/Lexone \$25.60-\$28.80; Sencor/Lexone \$12.60-\$25.20; Genep + Sencor/Lexone \$23.10; Prowl + Sencor/Lexone \$15.10-\$16.35.
SENCOR/LEXONE 4L with DUAL 8E or with GENEP 7E or with PROWL	1 pt + 2 pt or 3.5 pt or 1 pt	1 pt + 2.5 pt or 3.5 pt or 1.5 pt	1 pt + 2.5 pt or 3.5 pt or 1.5 pt	
OTHER REGISTERED TREATMENTS FOR POTATOES: Dacthal (PRE), Dowpon M (PRE), Lorox (PRE), and Treflan (PRE).				

## Fieldbeans

BASAGRAN 4WS + CROP OIL CONC. on some species	0.75-1 qt	0.75-1 qt		POSTEMERGENCE...At least one trifoliate leaf fully expanded. Broadleaf weeds 2-4" tall. Weeds showing moisture stress or over 6" tall are poorly controlled. Controls hairy but not eastern black nightshade. Cost: \$11.75-\$16.25
EPTAM 10G or EPTAM 7E/GENEP	30 lb or 3.5 pt	30 lb or 3.5 pt		PPI...Apply to dry surface soil; immediately incorporate with disc or field cultivator. Apply layby at time of last cultivation as a directed spray or direct granules to the base of the plants before bean pods start to form. Do not feed or pasture vines within 45 days after application. Cost: \$10.70.
EPTAM 7E/GENEP with SONALAN 3EC or with PROWL 4EC	2.5 pt + 2 pt or 2 pt	2.5 pt + 2 pt or 2 pt		PPI...Apply to dry surface soil, immediately incorporate with a disc or field cultivator. Sonalan may injure sugar beets and sorghum the following year. Plowing reduces injury. Cost: Eptam/Genep + Dual \$17.00; Eptam/Genep + Lasso \$18.40; Eptam/Genep + Sonalan \$14.20; Sonalan + Dual \$17.60; Sonalan + Lasso \$19.00; Eptam/Genep + Prowl \$12.60.
EPTAM 7E/GENEP or SONALAN 3EC with DUAL 8E or with LASSO 4EC	2.5 pt or 2 pt + 1.5 pt or 4 pt	2.5 pt or 2 pt + 1.5 pt or 4 pt		
EPTAM 7E/GENEP + TREFLAN 4EC	2.25 pt + 1 pt	2.25 pt + 1 pt		PPI...Do not follow with fall seeded small grain. Sugar beets and sorghum may be injured the next year. Plowing reduces injury. Cost: Lasso + Treflan \$12.35; Dual + Treflan \$11.95; Eptam/Genep + Treflan \$9.40.
TREFLAN 4EC with DUAL 8E or with LASSO 4EC	1 pt + 1.5 pt or 4 pt	1 pt + 1.5 pt or 4 pt		
LASSO 4EC or DUAL 8E	3 qt or 2.5 pt	3 qt or 2.5 pt		PRE, PPI or SURFACE MIX...Surface mixing will improve weed control and reduce crop injury. Cost: Dual \$15.65; Lasso \$15.00.
OTHER REGISTERED TREATMENTS FOR FIELDBEANS: Amiben (PRE), Dacthal (PRE), Furloe (PRE), Treflan (PPI).				



# SUGAR BEET HERBICIDES

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Herbicide	Commercial Product per Acre						Application Time, Remarks and Approximate Cost/A Broadcast
	Sandy Loam 1 % OM			Silt Loam 1 -2 % OM			
	Broad-	Product/7" Band		Broad-	Product/7" Band		
	cast	22" Row	30" Row	cast	22" Row	30" Row	

## PPI or PRE

ANTOR 4ES	3 qt	30 oz	22 oz	4 qt	41 oz	30 oz	PPI or PRE...Furrow irrigation apply preplant and incorporate 1 to 2"; for sprinkler irrigation apply preemergence at planting or shortly after and immediately irrigate with 0.5" water. Cost: Antor \$28.00-\$46.60; Nortron \$35.45-\$59.00; Nortron + Antor \$21.10-\$26.40.
NORTRON 1.5EC	3 qt	30 oz	22 oz	5 qt	51 oz	36 oz	
NORTRON 1.5EC +	2.5 qt +	25 oz +	18 oz +	4 qt +	40 oz +	29 oz +	
ANTOR 4ES	1 qt	10 oz	7 oz	1.5 qt	15 oz	11 oz	
RO-NEET 6E or	2.5 pt or	12 oz or	9 oz or	3.3 pt or	17 oz or	12 oz or soil	PPI...Immediately mix into dry with power incorporator 2 to 3". Crop injury may occur on sandy soils below 1% organic matter or with highly saline or alkaline soil conditions. Use lower rate if postemergence treatments are planned. Primarily annual grass control. Cost: \$15.80-\$25.90.
RO-NEET 10G	18 lb	5.75 lb	4 lb	25 lb	8 lb	5.75 lb	

## Layby

EPTAM 7E/GENEP or	2.25 pt or	11.5 oz or	8 oz or	3.5 pt or	18 oz or	13 oz or	Apply Eptam after thinning and clean cultivation; incorporate immediately 2" deep with a cultivator. Cost: \$6.85-\$10.70.
EPTAM 10G	20 lb	6 lb	4.5 lb	30 lb	9.5 lb	7 lb	
TREPLAN 4EC	1 pt	5 oz	3.5 oz	1.25 pt	6 oz	4.5 oz	Sugar beets 2-6" tall. Cover exposed beet roots with soil before Treplan application to reduce root girdling. Cost: \$2.50-\$3.00.

## Postemergence

Herbicide	Rate Per Acre			Application Time	Remarks and Approximate Cost/A Broadcast
	Pints Brdcst	Ounces Per 7" Band	22" Row 30" Row		
Betamix 1.3EC	2 3	10 15	7.5 11	Any stage of sugar beet growth. Weeds cotyledon stage. Repeat in 5-7 days.	Use lower rates on small beets or when using a split-application. Works best on Nortron or Ro-Neet treated fields but wait till 4-leaf stage if beets show signs of injury. Treat in late afternoon to reduce injury. Use highest rate as weed size increases. Cost: Brdcst \$37.10-\$48.20; 22" row \$11.60-\$15.30; 30" row \$8.25-\$11.00.
Betamix 1.3EC	4.5-6	23-31	17-22	Sugar beets past two true leaf stage	
Herbicide 273	2-4	10-21	8-15	Beets 4-6 true leaves; weeds less than 5" tall	Use higher rates on large weeds. Apply when temperatures are above 60 F. Do not apply when sugar beets are past the 8 leaf stage of growth. Primarily for wild buckwheat and sunflower control. Cost: Brdcst \$9.90-\$19.80; 22" row \$3.15-\$6.35; 30" row \$2.30-\$4.55.
Poast	1-2	5-10	3-7	Grass 1-3"	Rates listed for a broadcast treatment. Use higher rate for larger grass or grass under drought stress. Requires 1 qt crop oil concentrate per acre. See label. Cost: \$11.50-\$21.50.

OTHER REGISTERED TREATMENTS FOR SUGAR BEETS: Betanal (POST), Endothall (POST), Endothall (PRE), Eptam (PPI), Pre-Beta (PPI), Pyramin W (PRE), Pyramin W + Dowpon M (POST), Pyramin W + Endothall (PRE), Pyramin W + TCA (PRE), TCA (PRE), Tillam (PPI).



Herbicide	Commercial Product per Acre	Application Time	Remarks and Approximate Cost/A Broadcast
<b>Melons and Cucurbits</b>			
Prefar 4E + Alanap-L	4-6 qt + 4-8 qt	Preplant	Immediately incorporate to a depth of 1". Use lower rate on sandy soil. Controls many annual grasses and broadleaf weeds. Cost: \$45.50-\$75.50.
Dacthal 75W	8-14 lb	Crop 4-5 true leaves	Crop should be weeded prior to application. Controls annual grasses. Use lower rate on sandy soil. Cost: \$36.00-\$63.00.
Treflan	1-1.5 pt	Crop 3-4 true leaves	Direct material to soil between the rows and mechanically incorporate. Controls germinating annual grasses and some broadleaves. Use the lower rate on sandy soils. Cost: \$3.00-\$4.50.

**Onions**

Dacthal 75W	8-14 lb	Preemergence at seeding or transplanting and/or at layby	Preplant incorporation not recommended. Use lower rate on soils with less than 1% organic matter. Cost: \$36.00-\$63.00.
Brominal ME4	0.5-0.75 pt	Postemergence; onions should have 2-5 true leaves	Water volume is important. Use 50-70 gal of water per acre. Do not add surfactants. Cost: \$5.65-\$8.50.
Goal 1.6E	0.6-1.25 pt	Onions 2 fully developed true leaves; weeds 2-4 leaves	Do not apply to onions under drought stress. Do not mix Goal with oil, surfactant or fertilizer. Cost: \$4.30-\$9.00.

**TREES AND SHRUBS INCLUDING CHRISTMAS AND FRUIT \*TREES**

Herbicide	Rate Per Acre	Application Time	Remarks and Approximate Cost/A Broadcast
*Casoron 50W or Casoron 4G or *Norosac 4G	8 lb or 100 lb or 100 lb	Preemergence on trees at least 2 years old	Apply 20" band on each side of tree row after trees are planted. Some injury to trees may result on low organic matter soil. Cost: \$122.00.
Dacthal 75W	14-16 lb	Preemergence	Application must be made before weed seed germination. Two applications may be necessary for season long weed control. Cost: \$63.00-\$72.00.
2,4-D amine	1 qt	Postemergence to weeds	Keep off new bark and foliage. Controls broad-leaf weeds. Cost: \$2.00.
*Fusilade 2000 or *Poast	2 pt or 2 pt	Postemergence before grasses tiller	Use on fruit trees limited to nonbearing trees. Add 1 qt crop oil concentrate per acre. Thorough coverage required. On ornamentals use nonionic surfactant with Fusilade. Cost: Fusilade \$21.50; Poast \$21.50.
Goal 2E	2-4 qt	Pre- or post-emergence to weeds	Conifers only. Grasses should be treated before they are beyond 2-leaf stage. Use before bud break or after new growth hardens. Cost: \$36.00-\$72.00.
*Karmex 80W	2.5-5 lb	Preemergence on trees at least 2 years old	Karmex use limited to conifers, honey locust, green ash, apples and peaches. Cost: \$10.00-\$20.00.
*Gramoxone Super	1.5-3 pt	Directed post-emergence	Nonselective contact herbicide. <b>Keep spray off tree foliage.</b> Add X-77 surfactant. Cost: \$6.50-\$12.20.
*Princep 80W	1-5 lb	Preemergence on trees at least 2 years old; use only on fruit trees planted 1 year or longer	Kochia may become resistant with repeated use. Use 1 lb on sandy, low organic matter, or high pH soils. Apply 20" band on each side of tree row after trees are planted. Some injury to trees may result on low organic matter soils. Gives poor control of Russian thistle. Cost: \$4.90-\$16.25.
*Roundup	1-4 qt in 10 gal water/A	Directed post-emergence	<b>Do not spray green bark or foliage.</b> Spray may contact brown bark. Use lower rate on annuals. Cost: \$17.50-\$68.00.
*Solicam 80WP	2.5-5.0 lb	Preemergence, late fall or early spring	Fruit trees only. May be combined with Karmex and Princep for improved broadleaf control. Cost: \$25.00-\$50.00.
*Surflan A.S.	2-4 qt	Preemergence	Fruit trees only. May be combined with Karmex and Princep for improved broadleaf control. Cost: \$28.00-\$56.00.



Herbicide	Rate Per Acre	Application Time	Remarks and Approximate Cost/A Broadcast
Treflan/ Trifluralin	1-2 pt	Preplant	Incorporate 2-3" deep prior to planting. After planting adjust machine to throw treated soil towards trees in the row. Cost: \$3.00-\$6.00.
Velpar L	1.8-3.6 qt	Pre- or post-emergence to weeds at least 2 months after transplanting	Use on Scotch, Austrian and Ponderosa Pine only. Use lower rates on sandy soils, soils low in organic matter, and on first year plantings. May be applied directly over the trees before bud break. Adjacent broadleaf trees may be injured. Cost: \$38.00-\$76.00.

\*Denotes products registered for use on fruit trees.

## AQUATIC WEED CONTROL

### Slow Moving and Still Water

**Important:** Before treating any body of water containing fish, contact the Game and Parks Commission local representative. Whenever possible treat before aquatic weed growth becomes dense to avoid fish suffocation due to oxygen depletion from decaying vegetation. When dense weed growth is present in fish containing waters, treat no more than one-half of the area. After vegetation in the treated area disappears treat the remainder of the water.

Herbicide	Rate Per AF (Acre Foot) or SA (Surface Acre)	Weeds Controlled	Application Time	Remarks and Approximate Cost
COPPER SULFATE CRYSTALS or COPPER CHELATES (Cutrine plus, Algetol or Algecide)	5.4 lb/SA or 0.67-1.25 gal/AF	Algae (Moss) Chara	When growth first becomes visible	No restrictions on water usage at recommended rates. Copper compounds can be corrosive to equipment. Use Chelated Copper in high pH water. Cost/SA: Copper Sulfate \$3.65.
AQUATHOL G or AQUATHOL K	13-135 lb/AF or 0.3-3.2 gal/AF	Burreed Coontail Milfoil Pondweed Naiad	Water has warmed and growth is visible	Handle with caution, extremely irritating. Overdose can be harmful to fish. Do not use water within 14 days for irrigation or domestic uses. Cost/AF: \$13.00-\$135.00.
AQUAZINE (Simazine)	1.7-6.8 lb/AF	Algae (Moss) Chara Coontail Duckweed Naiad Pondweed Milfoil	Spring before heavy weed growth appears	Treat total water volume. Best suited for still water. Do not use water for irrigation or livestock use. Cost: \$8.85-\$35.35.
DIQUAT	1-2 gal/SA	Arrowhead Cattail Bulrush Elodea Pondweed Coontail Milfoil	Post on foliage or on surface for submerged species	Do not use water for 10 days for swimming, livestock or irrigation. Not effective in water with suspended silt. Cost \$63.20-\$126.40.
NOROSAC 10G	100-150 lb/1000 sq ft	Duckweed Naiad Milfoil	Before weed growth occurs	Do not use water for irrigation, livestock or humans. Do not use fish for 90 days. Cost: \$8.00-\$12.00/1000 sq. ft.
2,4-D amine or ester or 2,4-D 20G	1.50-4 qt/AF or 7.50-20 lb/AF	Water Hyacinth Water Lily Water Primrose Duckweed Arrowhead Pondweed Milfoil	Use sprays on emerged weeds when in full leaf stage. Apply granules when first growth appears	Do not use water for 14 days for livestock or irrigation. Cost: \$3.75-\$10.00.
RODEO + ORTHO X-77	1 gal/SA + 2 qt	Most annual and perennial weeds	Apply to well emerged vegetation	Can be applied to most water situations. No restrictions on use of water for irrigation, recreation and domestic purposes. Cost: \$102.00.

## STOCK AND NURSE TANKS

Dissolve 1 oz copper sulfate in 1 pt of water in a glass jar. Add 7.5 tablespoons of the prepared solution to each 1,000 gallons of water. Mix thoroughly. Water can be used for crop spraying and livestock watering. Increase rate if water is extra hard.



## TROUBLESOME WEEDS AND WOODY PLANTS

Best control will be obtained if treatments are made when plants are actively growing. Plan to make more than one treatment. An application just before flowering and a second application on fall regrowth will give best results on most perennials. Dust on leaves may interfere with herbicide activity.

Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
ALFALFA (for control of alfalfa in corn or sorghum)	2,4-D amine + Banvel (corn only) or Banvel	0.5 pt + 0.5 pt or 0.5 pt	Alfalfa with 4-6" growth	Use drop nozzles on crop taller than 8". See no-till section on pg 9 to kill alfalfa sod. Sorghum 3-5 leaf stage. Cost: 2,4-D + Banvel \$4.20; Banvel \$3.20.
ALFALFA (for control prior to planting soybeans, fieldbeans, wheat, potatoes and sugarbeets)	2,4-D	1.5-2 qt	For potatoes and sugarbeets rotations apply in fall or Apr-May with 4" new growth.	Delay planting wheat 15 days and delay planting fieldbeans and soybeans 30 days after application. Ester formulations are more per- sistent than amine formulations. Cost: \$3.75-\$5.00.
ARTICHOKE JERUSALEM	2,4-D amine + Banvel	0.5 pt + 0.5 pt	12-18" tall	For use in corn. Use drop nozzles on corn taller than 8". Cost: \$4.20.
	2,4-D LV ester	1 qt	18-24" tall	For use where no crop is present. Cost: \$2.50.
BLUE MUSTARD	2,4-D LV ester	0.5 pt	Nov 15-Mar 15 before blue mustard stem elongation	Use only on fully tillered wheat. Cost: \$.65-\$1.00.
	2,4-D amine	1 pt		
	Glean 75DF + Surfactant	0.17-0.50 oz 2 qt/100 gal of spray	After wheat is in 2-3 leaf stage; broadleaf weeds less than 2"	Do not use on soils with pH of 7.9 or higher. Use only in continuous wheat or wheat fallow. Cost: \$2.85-\$5.70; Ally \$2.50.
	Ally 60 DF + 2,4-D LV ester	0.1 oz + 4.0 oz	Ally-spring only	
BUCKBRUSH (snowberry)	2,4-D LV ester	1-2 qt	Full foliage (May 10-25)	Use sufficient water to insure good coverage. Cost: \$2.50-\$5.00.
BUFFALOBUR	Atrazine 4L	3 qt	Preplant or preemergence in corn	Reduced rates less effective. Cost: \$7.20.
	Buctril 2EC or Brominal ME4	1.5 pt or 0.75 pt	Weeds 3-5 leaf stage in corn or sorghum	Plants taller than 4" not con- trolled. Cost: \$8.45.
	Blazer 2S	1 qt	Weeds 3-4 leaf stage in soy- beans	Weeds must be small. Follow-up treatments necessary. Cost: \$20.00.
	Eradicane 6.7E or Eradicane Extra	5 pt or 5.5 pt	Preplant to corn	Apply to dry surface soil and immediately incorporate by cross tandem discing or similar mixing. Cost: \$13.75-\$17.90.
	2,4-D + Banvel	1 pt + 0.5 pt	Postemergence on corn	Plants must be small. Cost: \$4.20.
BURCUCUMBER and WILD CUCUMBER	Buctril 2EC or Brominal ME4	1.5 pt or 0.75 pt	Weeds 3-5 leaf stage in corn	Thorough coverage required. Cost: \$8.45.
	Atrazine 4L	3 qt	Preemergence in corn	Atrazine can also be used post- emergence. Cost: Atrazine \$7.20; Princep \$11.70.
	Princep 4L	3 qt	Preemergence in trees or corn	
	Sencor/Lexone 4L (split-application)	0.5 pt + 0.5 pt	Preplant plus preemergence	Split-shot in soybeans. Cost: \$12.60.
BURSAGE, SKELETON- LEAF AND WOOLLYLEAF	Tordon 22K	2 qt	Flower bud stage or when growing actively	Non-crop areas. Tordon may remain in soil for three or more years. Cost: \$46.00.
	2,4-D + Banvel	1 qt + 1 qt	Jun or when growing actively	See remarks for field bindweed. If soil moisture conditions are poor, use oil-water emulsions as a carrier. Cost: \$5.20.

(Continued next page)



Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
CANADA THISTLE	Tordon 22K	2 qt	Fall-actively growing or spring-early flower bud	For non-crop areas and spot treatment in pasture and range. Tordon may remain in the soil for 3 or more years. Cost: \$46.00.
	2,4-D + Banvel	1 qt + 1 qt	Fall-actively growing or spring-early flower bud	Do not plant small grains for 45 days or sugar beets the following year. See remarks for field bindweed. Cost: \$14.70.
	Roundup	2-3 qt in 10 gal or less water	Flower bud stage or in fall when growing actively	Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for 3 days. Cost: \$34.00-\$51.00.
	Banvel	1-2 qt	Fall-actively growing or spring-early flower bud	Idle ground or grassland. Avoid tillage for 5 days. Injury to forage grasses may occur. Broadleaf crops may be injured for 2 years after treatment. Cost: \$12.70-\$25.40.
	Ally + Surfactant	0.1 oz		Telar for use in non crop land only. Use other herbicides in wheat, barley, or fallow to be planted to winter wheat. One application suppresses Canada thistle. Cost: \$2.85-\$5.70
	Glean + Surfactant	0.5 oz	Rosette to 4-6" stage	
	Telar + Surfactant	0.5 oz		
CATTAILS	2,4-D LV ester	1.5 gal + 5% diesel oil + 0.5% emulsifier	Boot to early flowering	Use the equivalent of 150 gal of water per acre. Retreat regrowth as necessary. Cost: 2,4-D \$15.00; Dowpon \$27.00.
	Dowpon M 74SP	13.5 lb + 0.5% emulsifier	After flowering to fruiting	
	Roundup	3 qt in 10 gal or less water	At flowering	Avoid water contamination. Cost: \$51.00.
CHEATGRASS	See Downy Brome			
COCKLEBUR	See Velvetleaf			
COTTONWOOD, WILLOWS & SIBERIAN ELM	2,4-D LV ester	2-3 qt	Full foliage (Jun-Jul); basal treatment anytime	2,4-D with aerial equipment at least 5 gal carrier/A; annual treatment for 2-3 years may be necessary. Basal or stump treatment: 2 qt of herbicide/10 gal of diesel; apply to point or runoff. Cost: 2,4-D \$5.00-\$7.50; Crossbow \$40.00.
	Crossbow	1 gal		
	Krenite S	2-3 gal in 100 gal water + surfactant	Late Jul, Aug and Sep	Has little effect on grasses. Results show the following spring. Cost: \$81.00-\$121.00.
	Spike 20P	0.25 oz/1" dia	Spring or fall	Apply under drip line. Cost: \$8.00/lb.
	Velpar RP	4 ml/1" dia	Spring with spot gun to tree base	Cost: \$.07/tree inch.
DEVILSCLAW	See Velvetleaf for control in corn & milo			
DOCK; CURLED & PALE	2,4-D + Banvel	1 qt + 0.5 pt	Before flowering in spring or fall	For use on idle ground or grassland. Cost: \$5.20.
DOGWOOD	Banvel	1-2 qt		
	Crossbow	1.0 to 1.5 gal	Full foliage during Jun	Ground application only. Observe all drift precautions when using within 1/2 mile of sensitive crops. Cost: Banvel \$12.70-\$25.40; Crossbow \$60.00.
	Spike 20P	0.25 oz/1" dia	Spring or fall	Apply under drip line. Cost: \$8.00/lb.
DOWNY BROME	AAtrex or Atrazine 4L	2 qt	Preemergence (fall or spring prior to Apr 1)	Use in waste areas such as fence rows and ditchbanks. See pages 24 and 25 for control in alfalfa and rangeland; page 12 for control in fallow. Cost: AAtrex/Atrazine \$4.80; Princep \$7.80; Oust \$7.50.
	Princep 4L	2 qt		
	Oust (non-cropland)	1-2 oz	Early spring	
	Far-Go 10G	15 lb	Preplant to winter wheat	Approx. 80% control. Wheat must be planted with hoe drill. Will not control emerged downy brome. Cost \$13.50.
	Crop Rotation			Include a spring seeded crop in the rotation.

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## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
FIELD BINDWEED (use herbicide rates on pages & when treating crops)	2,4-D	1 qt	Vigorous fall growth or flower bud stage in spring	Avoid tillage 5 weeks before and 1 week after application. Do not plant small grains for 15 days after 2,4-D and 45 days after Banvel. Plant to treat for several consecutive years. Cost: 2,4-D \$2.00; 2,4-D + Banvel \$8.35.
	Banvel	0.5 - 1 pt		
	Tordon 22K	2 qt	Vigorous fall growth or flower bud stage in spring	Tordon for non-crop areas and spot treatment in pasture and rangeland. Carefully observe all label precautions. Cost: \$46.00.
	Roundup 3WS + 2,4-D amine or Banvel	1 pt + 1 pt or 0.5 pt	Late summer or fall when actively growing	Use AMS plus surfactant. For Roundup apply in 10 gal or less water per acre, add 2 qt X-77 or similar surfactant plus 17 lb ammonium sulfate per 100 gallons. Avoid tillage for 5 days. Do not plant small grains for 15 days after 2,4-D and 22 days after Banvel. Broadleaf crops may be injured 2 years after high rates of Banvel in western Nebraska. Cost: Roundup + 2,4-D \$9.80; Roundup + Banvel \$11.65; Banvel \$12.75-\$25.40.
	Banvel	1-2 qt		
GROUNDSEL, RIDDELL GUMWEED	2,4-D LV ester	1 qt	May 15-Jun 15	Cost: \$2.50.
HEMP (Marijuana)	2,4-D	1 qt	June	
HEMP DOGBANE	2,4-D	1 qt	2-12" tall	Cost: \$1.00-\$2.00.
	2,4-D	1 qt	Flower bud stage-spring	Use lower rates in crops. Cost: \$2.00.
	2,4-D amine + Banvel	1 qt + 0.5 pt	After corn silks turn brown or milo is in the soft dough stage. Apply to dogbane before leaves start to turn yellow	Use lower 2,4-D rate in milo. Do not plant small grains for 15 days after treatment. Do not apply Banvel within 30 days of harvest. Dogbane roots should have pink swollen buds. Do not use Banvel within 1/2 mile of sensitive crops before Sept. 1. Cost: 2,4-D \$2.00-\$3.00; 2,4-D + Banvel \$5.15.
	Roundup	4 qt	Late summer or fall	Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for at least 7 days after treatment. Cost: \$68.00.
HOARY CRESS	2,4-D LV ester	2 qt	Rosette stage in the fall or early bud in spring	Suppression only. Growth starts in early spring. Treat twice a year for 2 to 3 years. Cost: \$5.00.
JOHNSONGRASS (see shatter-cane for seedling control)	Fusilade 2000	1.5 pt	12-18" new growth	For use in soybeans. Add 1 qt/A crop oil concentrate. Cost: Fusilade \$16.50; Poast \$16.50.
	Poast + Am sulfate	1.5 pt + 2.5 lb		
	Roundup	2-3 qt	12" through boot stage	Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for 7 days. Cost: \$34.00-\$51.00.
JOINTED GOATGRASS	AAtrex or Atrazine 4L	2 qt	Preemergence (fall or spring prior to Apr 1)	Use atrazine + Princep on waste areas such as fence rows and ditchbanks. See pages 16 and 17 for control in alfalfa and rangeland; page 32 for control in fallow. Fargo will give approx. 80% control. Wheat must be planted with hoe drill. Will not control emerged weeds. Cost: AAtrex/Atrazine \$4.80; Princep \$7.80; Fargo \$13.50.
	Princep 4L	2 qt		
	Far-Go 10G	15 lb	Preplant to winter wheat	

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Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
Crop Rotation -- Include a late spring seeded crop in the rotation. (Corn, sorghum, proso millet, or sunflowers)				
Kochia (triazine resistant). May have to spray twice or cultivate for row crops.				
Preplant				
Corn or Sorghum	Cyclone or Landmaster	1.5 pt 54 oz	Kochia less than 5" tall	Wait 20 days before planting sorghum. Include appropriate preemergence herbicides. Cost: Cyclone \$7.50; Landmaster \$8.40; Banvel \$3.15.
	Banvel	0.5 pt	Kochia less than 2" tall	
Postemergence				
Soybeans	Banvel	0.5 pt	Kochia less than 2" tall	Sorghum must have 3-5 leaves when using Banvel. Buctril + Banvel on corn only. Cost: Banvel \$3.15; Brominal/Buctril \$5.25-\$7.90; Buctril + Banvel \$8.45.
	Brominal ME4 or Buctril 2EC	0.5-1 pt or 1.0-1.5 pt		
	Buctril 2EC alone or with Banvel	1 pt + 0.5 pt		
	Command 4EC	1.5 pt		
Fallow prior to Winter Wheat	Cyclone or Landmaster	1.5 pt or 54 oz	Kochia less than 5" tall	Include appropriate preemergence herbicides. Cost: Cyclone \$7.50; Landmaster \$8.40; Glean \$5.60.
	or Glean	or 0.33 oz		
LEAFY SPURGE	2,4-D LV ester	2 qt	Bud stage spring or late fall	Retreatment necessary. Annual applications gradually reduce infestation. Cost: 2,4-D LV \$5.00; 2,4-D + Tordon \$13.50.
	2,4-D amine + Tordon 22K	1 qt + 1 pt		
	Tordon 22K	2-4 qt	Fall or spring	Tordon for non-crop areas and spot treatment in pasture and range. Cost: Tordon \$46.00-\$92.00; Roundup + 2,4-D \$20.50.
	Roundup + 2,4-D amine	1 qt + 1 qt	Sep to early Oct + spring	
LOCUST, HONEY AND BLACK	Banvel	2 qt	Full foliage during Jun; cut stump or basal treat- ment anytime Spring or fall	Ground application only. Observe all drift precautions. See cottonwood for basal and cut stump treatment. Cost: Banvel \$25.40; Garlon \$18.00-\$54.00. Apply under drip line. Cost: \$8.00/lb.
	Crossbow	1.0 - 1.5 gal		
	Spike 20P	0.25 oz/1" dia		
	Velpar RP	4 ml/1" dia		
MILKWEED, COMMON	2,4-D + Banvel	1 qt + 0.5 pt	Flower bud to bloom stage	Do not plant small grains for 15 days after 2,4-D + Banvel treat- ment. 2,4-D + Banvel suppresses growth for 1 year. Cost: \$5.15.
	Roundup	3 qt in 10 gal or less water/A	Flowering thru maturity; ropewick application in soybeans	Idle ground or spot treatment on cropland before head or pod fill of crop. Avoid tillage for 7 days. Cost: \$51.00.
MILKWEED, HONEYVINE (climbing)	2,4-D amine	1-2 pt	Before vines reach 3' in length	For use in corn or sorghum. Use lower rates in sorghum. Gives suppression only. Cost: \$.65- \$1.30.
	2,4-D LV ester	0.5-1 pt		
MULLEIN, COMMON	Tordon 22K	0.5 pt	Late fall on rosettes or spring before flowering stalks lengthen	Essential to apply in rosette stage. Cost: \$5.75.
MUSK AND PLUMELESS THISTLE	2,4-D	1.5-2 qt	Late fall treatment of rosettes or spring before flowering stalks length- en	Annual treatments necessary for control of new seedlings. Fall applications after trees drop leaves and before leafing out in the spring reduces damage. Do not apply after "soil freeze- up" in the fall. For use on ranges and permanent pastures only. Cost: 2,4-D \$3.00-\$4.00; 2,4-D + Banvel \$5.15; Tordon \$4.30-\$5.75.
	2,4-D + Banvel	1 qt + 0.5 pt		
	Tordon 22K (musk only)	6-8 oz		
OAKS	Banvel	2 qt	Full foliage Jun to Jul; cut stump or basal treat- ment anytime Spring or fall	Non-cropland only for Spike and Crossbow. Cost: Banvel \$25.40; Crossbow \$60.00; Spike \$8.00/lb; Velpar RP \$.07/tree inch.
	Crossbow	1.5 gal		
	Spike 20P	0.25 oz/1" dia		
	Velpar RP	4 ml/1" dia		

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## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
OSAGE ORANGE	Crossbow	1.0 - 1.5 gal	Full foliage Jun to Jul; basal treatment anytime	Non-crop areas only. See remarks for cottonwood. Cost: Garlon \$108.00; Spike \$8.00/lb; Velpar RP \$.07/tree inch.
	Spike 20P	0.5 oz/1" dia	Spring or fall	
	Velpar RP	4 ml/1" dia	Spring. Spot gun. Apply to tree base	
PERENNIAL SOW THISTLE	2,4-D LV ester	1.5 qt	Fall rosette or spring bud stage	See remarks for field bindweed. Cost: \$3.75.
POISON IVY	Crossbow	1.0 - 1.5 gal		
	Amino Triazole/Weedazol 90SP	2 tbs/gal of water	Full foliage (Jun)	Thoroughly wet all vegetation. Do not apply to cropland. Cost: \$1.00/1000 sq ft.
	or Amitrol-T/Cytrol-T 2WS	0.5 cup/gal of water		
POISON HEMLOCK	2,4-D + Banvel	1 qt + 0.5 pt	Rosettes-fall or early spring	Cost: \$5.15.
PRICKLYPEAR	Tordon 22K	1-2 pt	Early summer	Spot treatment in grazing and non-cropland. Cost: \$11.50-\$23.00.
PUNCTUREVINE	2,4-D LV ester	1 qt	Pre-bud stage most effective	Mature burs not affected by 2,4-D. Retreatment necessary on new plants. Cost: \$2.50.
PURSLANE	2,4-D LV ester	1 qt	When growing actively	Till 5-7 days after treatment. Do not plant small grains for 15 days. Cost: 2,4-D \$2.50; Banvel \$3.15-\$6.25.
	Banvel	0.5-1 pt		
	Glean	0.33-0.5 oz	Preemergence or early post	Use Glean only in continuous wheat or wheat fallow. Add surfactant when used postemergence. Cost: Glean \$2.85-\$8.50; Ally + 2,4-D \$2.75.
	Ally + 2,4-D	0.1 + 4 oz	Early post	
RAGWEED, WESTERN (perennial)	2,4-D LV ester	1 qt	Early summer	Follow-up treatments may be necessary. Cost: \$2.50.
RED CEDAR	Spike 20P	0.5 oz/1" dia	Spring or fall	Spike for use in non-crop areas only. Tordon and Velpar RP can be used on grazingland. Cost: Spike \$8.00/lb; Tordon \$92.00; Velpar RP \$.07/tree inch.
	Tordon 22K	4 qt/100 gal	Spring or fall	
	Velpar RP	4 ml/1" dia	Spot gun in spring to tree base	
RUSSIAN KNAPWEED	Banvel 4WS	1-2 qt	Early flower bud stage	Idle ground or grassland. Avoid tillage for 7 days. Injury to forage grasses may occur. Broad-leaf crops may be injured for 2 years after treatment. Cost: Banvel \$12.70-\$25.40; Tordon \$46.00.
	Tordon 22K	2 qt		
RUSSIAN OLIVE	2,4-D + Banvel 4WS	2 qt + 1 qt	Full foliage (early Jun)	See remarks for cottonwood. Cost: \$16.70.
	Spike 20P	0.5 oz/1" dia	Spring or fall	Use on non-cropland only. Cost: \$8.00/lb.
SAGEBRUSH (sand and fringed and green sagewort)	2,4-D LV ester	1.5-2 qt	4-8" new growth (Jun)	1.5 qt/A 2,4-D adequate on sand sagebrush. Cost: \$3.75-\$5.00.
SANDBUR	Tandem + Atrazine 4L + Oil	1 pt + 3 pt + 2 pt	Postemergence in Corn. Sandbur 1-3 leaf	Cost: \$15.00.

Treatments listed for shattercane also control or suppress sandbur.



Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
SHATTERCANE	<u>Eradicane Extra 6E</u>	<u>5.3 pt</u>	Preplant to corn	Incorporate immediately by cross tandem discing or equivalent soil mixing. Do not use Princep or Bladex treatment on sand. Plant corn the year following Princep treatment. Repeated use of Eradi cane Extra or Sutan+ will lead to reduced weed control. Under high shattercane population, herbicides may not give acceptable control. Rotate to small grain, soybeans, or alfalfa. Lasso and Dual pro vides suppression of light infesta tions. Cultivation improves control. For Treflan chemigation apply in 1/2-1" sprinkler irri gation water. Cost: Treflan \$3.00-\$6.00; Treflan + Atrazine \$6.15-\$8.60; Eradicane Extra \$12.75-\$16.75; Sutan/Genate \$15.00 Eradicane Extra + Bladex \$22.15- \$25.60; Eradicane Extra + Princep \$20.50-\$23.80; Sutan + Bladex \$24.15; Sutan + Princep \$24.60; Treflan \$5.10-\$6.40; Lasso \$22.60; Prowl \$6.90; Dual \$15.65; Fusilade \$9.00; Poast \$11.50. Sonalan
	<u>Sutan+/Genate Plus</u>	<u>7.3 pt</u>		
	Princep or Bladex 4L	2 qt		
	+ Eradicane Extra	+		
	or	5-5.3 pt		
	<u>Sutan+/Genate Plus</u>	<u>7.3 pt</u>	Preplant to corn. Repeat at 1/2 rate at planting	
	<u>Lasso 4EC</u>	<u>4 qt</u>		
	Dual 8E	2.5 pt		
	<u>Prowl 4EC</u>	<u>3 pt</u>	Preplant to soybeans	
	Sonalan or	3 pt		
	<u>Treflan 4EC</u>	<u>1 - 2.5 pt</u>		
Treflan 4EC alone or with	1.5 - 2 pt	Corn 2-leaf through 30 weed unemerged		
Atrazine 4L (chemigation)	1 - 1.5 pt			
<u>Fusilade 2000</u>	<u>0.75 pt</u>			
Poast	1 pt	Postemergence in soybeans. Cane 6-18"		

An alternate system -- Ridge or till-plant corn and apply Dual or Lasso with Princep or Bladex and cultivate.

SOAPWEED (Yucca)				No labeled herbicide.
SPOTTED Knapweed	2,4-D	1 qt	Rosette stage	
SUMAC	2,4-D LV ester	1-2 qt	Full foliage	Use sufficient water for good coverage. Cost: \$2.50-\$5.00.
SUNFLOWER	See Velvetleaf			
SWAMP	2,4-D LV ester	1 qt	When growing vigorously	On crops use lower rates and amine formulations. Cost \$8.85.
SMARTWEED (tanweed, shoestring)	+ Banvel	+ 1 pt		
	Roundup	3-4 qt in 10 gal or less water/A	Full foliage mid to late summer	Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for 7 days. Cost: \$51.00.

Corn and Sorghum treatments (also control cocklebur, Devils claw & Common sunflowers)

VELVETLEAF	AAtrex/ Atrazine 4L	1.2 qt	Velvetleaf less than 4"	Use crop oil concentrate with AAtrex/Atrazine and Laddock. Cost: AAtrex/Atrazine \$4.40; Basagran \$7.60-\$14.60; Brominal/Buctril \$5.25/\$7.90; 2,4-D \$.65-\$1.25; Marksman \$4.80-\$8.40. Laddock \$5.50-\$7.50.
	Basagran	1-2 pt		
	+ 28% N	+ 1 gal		
	Laddock	2 2/5 - 3 3/5 pt		
	Brominal ME4 or Buctril 2EC	1-1.5 pt		
	+ Atrazine 4L	+ 1-2 pt		
	2,4-D LV ester	0.5-1 pt		
	Marksman	2-3.5 pt	Before 5-leaf stage of corn	

## VELVETLEAF

## Soybean treatments

Command 4 EC + other soil applied herbicides	1-1.5 pt	PPI to soybean planting	Command drift may damage green vegetation. Command residue may damage wheat planted the same fall. Cost: Command \$7.50-\$11.75 and additional herbicide costs.
Basagran + 28% N	1 pt + 1 gal	Velvetleaf less than 4"	Basagran \$7.60.

OTHER HELPFUL TREATMENTS FOR VELVETLEAF: Corn and milo--full rates of atrazine applied PPI; Soybeans--Vernam + Amiben (PPI), Amiben + Sencor (PRE), Vernam (PPI) + Sencor/Lexone (PRE), Treflan + Sencor/Lexone Split-Application, Vernam or Reward + Prowl + Sencor (PPI).



Weed	Herbicide <sup>3</sup>	Product Per Acre or Per 100 Gallons <sup>5,6</sup>	Application Time	Remarks and Approximate Cost/A Broadcast
WILD OATS	In Nebraska probably weedy annual brome. See Downy brome.			
WILD PROSO MILLET	Eradicane Extra or Sutan <sup>†</sup> 6.7/ Genate Plus	5-5.3 pt or 5 pt	Preplant to corn	Apply to dry surface soil and incorporate immediately with disc or field cultivator. Repeated use of Eradicane extra or Sutan <sup>†</sup> will lead to reduced weed control. Cost: Eradicane/Extra \$12.75-\$16.25; Sutan/Genate \$10.50.
	Prowl 4EC + Bladex 80W	1 qt + 1.25 lb	Spike stage of corn. Wild proso millet less than 1"	Cost: \$9.10.
	Prowl 4EC	1.5 qt	Layby to corn	Direct weed spray to cover the base of the corn plant and in between corn rows. Incorporate with irrigation water or with cultivation. Cost: \$6.90.
	Fusilade 2000	0.5 pt	Postemergence on 4-8" wild proso millet	Fusilade and Poast on soybeans; only Poast on sugar beets. Add 1 qt crop oil concentrate per acre. Cost: Fusilade \$6.50; Poast \$6.50.
	Poast	0.5 pt		
	Eptam/Genep	3.5 pt	Preplant to fieldbeans	Apply to dry surface soil and incorporate immediately with a disc or field cultivator. Cost: Eptam/Genep \$11.20; Ro-Neet \$20.00-\$23.00.
	Ro-Neet	3.3-4 pt	Preplant to sugar beets	
	Tandem 4L + Bladex 80W	1.5 pt + 1.25 lb	Wild proso millet 1-3 leaf stage. Corn 4 true leaves or less	Follow label directions. Cost: \$18.00.

<sup>1</sup>Add X-77 spreader 2 pt per 100 gal spray solution for Gramoxone, 4 pt per 100 gal if Gramoxone is used a less than 10 gal water per acre. For Roundup and Landmaster application, apply 10 gal or less water per acre; add 2 qts X-77 or similar surfactant plus 17 lbs ammonium sulfate (fluid or feed grade) per 100 gal spray solution to enhance Roundup performance. (Landmaster contains sufficient surfactant.)

<sup>2</sup>If Russian thistle or kochia is present and not triazine resistant, the addition of 0.5 to 1 pt 2,4-D LV ester improves control. Do not apply 2,4-D after planting sorghum.

<sup>3</sup>Low volatile ester and salt formulations preferred over volatile esters such as butyl and isopropyl because of fume hazards. 2,4-D and MCPA calculated on the basis of 4 lb/gal of acid equivalent (the chemicals responsible for herbicidal effects). For other formulations see Conversion Table page 39.

<sup>4</sup>Do not use on soils with less than 1% organic matter. Increased injury risk on soils where triazine carryover exists.

<sup>5</sup>For spot treatment add 1 1/2 tablespoons of herbicide per gallon of water for each 1 qt per acre required broadcast, and apply to 1000 sq ft.

<sup>6</sup>Rates per 100 gallons pertain to handgun on a power sprayer.

## CONVERSION TABLES

### Rate Per Acre To 1000 Square Feet

#### 1. Known Facts and Assumptions:

1 acre = 43,560 sq ft  
1 pt = 16 oz; 1 qt = 32 oz  
1 oz = 2 tablespoons = 6 teaspoons  
Herbicide rate per acre from bulletin or label  
Hand sprayers apply about 1 gal per 1000 sq ft

#### 2. Convert Herbicide Rate Per Acre to Ounces:

For example, 2 qt per acre = 64 oz

#### 3. Convert 64 oz per acre to oz per 1000 sq ft

64 43 = 1.50 oz or 3 tablespoons per

#### 4. Add 3 tablespoons of the product to 1 gal of water and apply uniformly to 1000 sq ft

NOTE: Wettable powder herbicide rates would be determined by the same procedure; however, since volume or density of wettable powder herbicides varies, the calculated rate per 1000 sq ft should be carefully measured by weighing on a precision scale.

### Active Ingredient Per Gallon Conversions

Pounds of active material per gal of commercial product	Pints of commercial product needed per acre to give the following pounds of herbicide per acre		
	1/4 lb	1/2 lb	1 lb
2.00	1	2	4
2.64	3/4	1 1/2	3
3.00	2/3	1 1/3	2 2/3
3.34	3/5	1 1/5	2 2/5
4.00	1/2	1	2
6.00	1/3	2/3	1 1/3

### Metric Conversions

Symbol	When You Know	Multiply By	To Find	Symbol
lb	pounds	0.45	kilograms	kg
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
oz	ounces	30.00	milliliters	ml
A	acres	0.40	hectares	ha
ha	hectares	2.50	acres	A

### Equivalent Amounts of Different Formulations

1 qt AAtrex or Atrazine 4L = 1.25 lb AAtrex or Atrazine 80W = 1.1 lb AAtrex Nine-0  
1 qt Bladex 4L = 1.25 lb Bladex 80W = 1.1 lb Bladex 90DF  
1 qt Ramrod Flowable = 1.5 lb Ramrod 65W  
0.5 pt Sencor/Lexone 4L = 0.5 lb Sencor/Lexone 50W = 0.33 lb Sencor/Lexone DF



AAtrex--A trade name for atrazine. Ciba-Geigy.

Alachlor--Active ingredient in Lasso and Arena. Monsanto.

Alanap (naptalam)--A pre- and postemergence broadleaf and grass herbicide for soybeans and vine crops. Uniroyal.

Ally (metasulfuron methyl)--Used in wheat, barley, and fallow for broadleaf and certain grass weed control. 3-6 week residual. DuPont.

Amiben (chloramben)--A pre- and early postemergence herbicide for grass and broadleaf weeds in soybeans. Union Carbide.

Amino Triazole--Trade name for amitrole. American Cyanamid.

amitrole--A translocated herbicide that inhibits chlorophyll formation and regrowth from root buds. Trade names are Amino Triazole, Cytrol and Weedazol.

Amitrol-T--Amitrole + ammonium thiocyanate. Union Carbide.

Amizine (amitrole + simazine)--A combination of amitrole and simazine for use in tree plantings and non-crop areas. Union Carbide.

Antor--A selective soil applied herbicide for weed control in sugar beets. NOR-AM.

Arena--Generic alachlor. Monsanto.

Aquathol (endothall)--An aquatic herbicide for use in still water. Pennwalt.

Aquazine (simazine)--An aquatic herbicide for use in still water. Ciba-Geigy.

Arsenal--Provides total vegetation control for non-crop areas. American Cyanamid.

Assert--Control wild oats not annual bromes in wheat. American Cyanamid.

Asulox (asulam)--For postemergence weed control in turf, ornamentals, Christmas trees and non-crop areas. Rhone-Poulenc.

Assure (DPX-Y6202)--A postemergence grass herbicide for use in soybeans. DuPont.

Atrabute+--A 1.2 lbs atrazine + 4.8 lbs butylate combination. Griffin.

Atrabute+ II--A 1.7 lb atrazine + 4.3 lb butylate combination. Griffin.

Atrazine--A preplant, preemergence and postemergence s-triazine for broadleaf and certain grass weeds in corn, sorghum and rangeland. Available under several private labels.

Avenge (difenzoquat)--Controls wild oats not annual bromes postemergence in spring small grain. American Cyanamid.

Balan (benefin)--A preplant incorporated herbicide for annual grass control in alfalfa. Elanco.

Banvel (dicamba)--A post- and preemergence herbicide for selective broadleaf weed control in corn, sorghum, small grains and grasses. Sandoz.

Basagran (bentazon)--A postemergence fieldbean, corn, sorghum and soybean herbicide for velvetleaf, cocklebur and other broadleaf weeds under 6". BASF-Wyandotte.

Betamix (phenmedipham + desmedipham)--A prepackaged combination of Betanol + Betanex for postemergence broadleaf weed control in sugar beets. NOR-AM.

Betanal (phenmedipham)--Postemergence broadleaf

weed control in sugar beets. NOR-AM.

Betanex (desmedipham)--Used postemergence for redroot pigweed control in sugar beets. NOR-AM.

Bicep 6E (metolachlor + atrazine)--A combination of 3.33 lbs Dual + 2.67 lbs AAtrex for preemergence use in corn and sorghum safened with Concep II. Ciba-Geigy.

Bladex (cyanazine)--A short residual triazine for grass and broadleaf weed control in corn and sorghum. DuPont.

Blazer (acifluorfen)--A postemergence herbicide for broadleaf weed control in soybeans. Rohm & Haas.

Brominal ME4--Name changed to Torch 4EC. Union Carbide.

Brominal 3+3--A combination of bromoxynil and MCPA for use in small grains. Union Carbide.

Bronate--A combination of bromoxynil and MCPA for use in small grain. Rhone-Poulenc.

Bronco (alachlor + glyphosate)--A prepackaged combination of Lasso + Roundup for use in no-till corn, soybeans, and screen safened sorghum. Monsanto.

Buctril (bromoxynil)--A contact herbicide for broadleaf control in corn, sorghum and small grains. Rhone-Poulenc.

Butoxone (2,4-DB)--For selective control of cocklebur in soybeans and some small broadleaf weeds in seedling alfalfa. Vertac.

Butyrac (2,4-DB)--Similar to Butoxone. Union Carbide.

Canopy--Combinations of 10.7% Classic and 64.3% metribuzin, for preemergence use in soybeans. DuPont.

Carbyne (barban)--Used for wild oat control in spring small grain. Sandoz.

Casoron (dichlobenil)--Used for preemergence weed control in woody plants and certain herbaceous perennials. Uniroyal.

Chem-Hoe (propham)--Used pre- and postemergence for winter annual grasses in alfalfa. PPG Industries.

Chlorate-3 (sodium chlorate)--Used as a sorghum desiccant. Midwest Companies.

Chloro IPC (chlorpropham)--Similar to Chem-Hoe, PPG.

Cinch (cinmethylin)--An experimental soybean herbicide primarily for annual grass control. DuPont.

Classic (chlorimuron ethyl)--A postemergence herbicide for broadleaf weed control in soybeans. DuPont.

Cobra (lactofen)--Used postemergence for broadleaf weed control in soybeans. PPG.

Command (FMC 57020)--A preplant incorporated herbicide for grass and broadleaf weed control in soybeans. FMC.

Commence--A prepack of 3 lbs Trifluralin + 2.25 lbs Command for use in soybeans. FMC, Elanco.

Concep II (cyoxmetrinil)--A protectant for sorghum seed to prevent Dual and Bicep injury. Ciba-Geigy.

Confidence--Generic Alachlor.



Conquest (cyanazine + atrazine)--A combination of 3 lbs Bladex and 1 lb atrazine. DuPont.

Copper Sulphate--Available as crystals or in chelated form for algae control in moving and still water. Several brand names.

Crossbow (2,4-D + trichlopyr)--Ester formulation of 2,4-D and Garlon for broadleaf weeds and woody plants. Dow.

Curtail--A twin package of clopyralid + 2,4-D for postemergence broadleaf control in small grain. Dow.

Cyclone (paraquat)--A 2 lb/gal formulation of paraquat for weed control in fallow situations. ICI Americas.

Cytrol--Trade name for amitrole. Am. Cyanamid.

Dacamine--An oil soluble amine salt formulation of 2,4-D. SDS Biotech Corp.

Dacthal (DCPA)--Used preemergence for annual grass and certain broadleaf weeds in turn, ornamentals and horticultural crops. SDS Biotech Corp.

dalapon--Primarily for perennial grass control. Vertac.

Diquat (diquat)--Used for aquatic weed control and desiccation of legume, soybean and grain sorghum seed crops. Chevron-Ortho.

Direx (diuron)--Similar to Karmex. Griffin.

Downpon--Trade name for dalapon. Vertac.

Dual (metolachlor)--Used preplant or preemergence for annual grass and some broadleaf weeds in corn, sorghum and soybeans. Ciba-Geigy.

Embark (mefluidide)--Controls and suppresses growth of grasses. 3M Company.

Endothall (endothall)--Used preemergence and postemergence for annual grass and broadleaf weeds in sugar beets and as a desiccant. Penwalt.

Enide (diphenamid)--Used preemergence for annual grasses and some broadleaf weeds in potatoes and other horticultural crops. Upjohn.

Eptam (EPTC)--Used preplant soil incorporated for grass and certain broadleaf weeds in corn, legumes, sugar beets and many horticultural crops. Stauffer.

Eradicane (EPTC + R-25788 antidote)--Used preplant incorporated in corn. The antidote provides greater crop safety. Stauffer.

Eradicane Extra (EPTC + R-25788 antidote + R-33865 extender)--The extender restores performance on soils where Eradicane has ceased to perform. Stauffer.

Evik (ametryn)--Used as a directed postemergence contact spray for weeds in corn. Ciba-Geigy.

Express--A short residual herbicide for broadleaf weed control in cereal crops. EUP. DuPont.

Extrazine (cyanazine + atrazine)--A combination of 2.7 lbs Bladex + 1.3 lb atrazine for PPI or preemergence use in corn. DuPont.

Far-Go (triallate)--For preplant control of downy brome and other grasses in winter wheat. Monsanto.

Furloe (chlorpropham)--Used PPI and preemergence for smartweed in soybeans. PPG Industries.

Fusilade 2000 (fluazifop)--A selective postemergence herbicide for shattercane, volunteer corn and other grasses in soybeans, nursery stock and ornamentals. ICI Americas.

Garlon (trichlopyr)--Used postemergence for woody

plant and broadleaf weeds on rights-of-way. Dow.

Gemini--4.6% Classic + 55.4% linuron (Lorox) on an active ingredient basis for preemergence use in soybeans. DuPont.

Genate Plus (butylate)--Similar to Sutan+. PPG.

Genep (EPTC)--Similar to Eptam. PPG.

Glean (chlorsulfuron)--A pre- and postemergence broadleaf herbicide for small grains. DuPont.

Goal (oxyfluorfen)--A preemergence herbicide for soybeans, onions and nursery stock. Rohm & Haas.

Gramoxone--Trade name for paraquat. ICI Americas.

Graslan (tebuthiuron)--Used for brush control in rangeland. Elanco.

Harmony--Chemistry and uses similar to Glean and Ally with reduced residual activity. DuPont.

Herbicide 273 (endothall)--A postemergence sugar beet herbicide especially effective against broadleaf weeds. Penwalt.

Hoelon (dichlorofop)--Used postemergence for annual grass in soybeans and wheat. American Hoechst.

Hyvar (bromacil)--Used as a soil sterilant and for woody plant control. DuPont.

Igran (terbutryn)--A short residual s-triazine for use in sorghum. Generally combined with AAtrex or Milogard for broader spectrum control and reduced carryover. Ciba-Geigy.

Judge--Generic Alachlor.

Karmex (diuron)--A substituted urea for selective annual weed control at low rates and as a soil sterilant at higher rates. DuPont.

Kerb (pronamide)--Used preemergence and early postemergence in alfalfa. Rohm & Haas.

Knoxweed--A combination of Eptam and 2,4-D for preemergence annual weed control in corn. Do not use on sandy soils. Stauffer.

Krenite (fosamine)--A water soluble brush control agent that can be used on noncropland areas adjacent to water. DuPont.

Krovar--A combination of Hyvar and Karmex. DuPont.

Laddok (bentazon + atrazine)--A combination of Basagran + atrazine for postemergence broadleaf weed control in corn. Various Distributors.

Landmaster--A combination of 1.2 lb glyphosate (Roundup) and 1.6 lb 2,4-D primarily for no-till. Monsanto.

Lariat--A prepack of 2.5 lbs Lasso + 1.5 lb atrazine. Monsanto.

Lasso (alachlor)--Used preplant and preemergence for annual grass and some broadleaf weeds in corn, sorghum, soybeans and fieldbeans. Monsanto.

Lasso-Atrazine Flowable--A prepackaged combination of 2.5 lbs Lasso and 1.5 lb atrazine. Monsanto.

Leafex-3 (sodium chlorate)--Used as a sorghum desiccant. Occidental.

Lexone--Trade name for metribuzin. DuPont.

Linex--Trade name for linuron. Griffin.

Linuron--Used primarily preemergence for broadleaf weeds in corn, sorghum and soybeans. Linex and Lorox.

Lorox--Trade name for linuron. DuPont.



Lorox Plus--A 16:1 ratio of Lorox + Classic. DuPont.

Marathon--A formulation Ro-Neet with antidote for preplant use in corn. Weed spectrum control similar to Sutan+. EUP. Stauffer.

Marksman--A combination of 1.1 lb dicamba and 2.1 lbs atrazine for postemergence weed control in corn. Sandoz.

Matrix (Express + Harmony)--A non-residual herbicide for broadleaf weeds in wheat, barley and fallow. EUP. DuPont.

MCPA--A phenoxy similar to 2,4-D but safer on oats and legumes. Often used in combination. Many trade names. Union Carbide, Rhone-Poulenc.

metribuzin--Used for annual broadleaf weeds in soybeans, alfalfa and potatoes; often used in combination. Trade names - Lexone and Sencor.

Milocep (metolachlor + propazine)--A combination of Dual + Milogard for use on sorghum planted with Concep II treated seed. Ciba-Geigy.

Milogard (propazine)--Used preemergence in sorghum. Performs best on soils low in organic matter. Often combined with Aatrex and Igran for improved annual grass control. Ciba-Geigy.

Modown (bifenox)--Used preemergence for broadleaf and certain grass weeds in soybeans, corn and sorghum. Rhone-Poulenc.

MSMA (monosodium methanearsonate)--Used for selective crabgrass control in turn and johnsongrass in noncrop areas. Union Carbide, Vineland.

Norosac--Same as Casoron. PBI-Gordon.

Nortron (ethofumesate)--A preemergence or preplant incorporated herbicide for sugar beets. NOR-AM.

Oust (sulfometuron methyl)--A noncropland herbicide that also provides suppression of perennial grasses at lower rates. DuPont.

paraquat--A nonselective contact herbicide used for no-till and ecofarming, soybean and sunflower desiccation, and on noncropland. Gramoxone Super. ICI Americas.

Paraquat+Plus--Now Gramoxone Super. ICI Americas.

Partner--A prepack of Scepter + Lasso. Monsanto.

pendimethalin--Common name for Prowl. Also active ingredient in some preemergence turf herbicides.

Phytar (cacodylic acid)--Nonselective contact herbicide used for weed control on noncropland.

picloram--Common name for Tordon.

Poast (sethoxydim)--A postemergence herbicide for shattercane, volunteer corn and other grass weeds in soybeans and other broadleaf crops. BASF-Wyandotte.

Pramitol (prometon)--Used primarily for season long control of annual and perennial weeds in noncropped areas. Ciba-Geigy.

Prefar (bensulide)--Used preplant for grass and broadleaf weeds in cantaloupe, cucumbers and watermelons. Stauffer.

Preview--10 parts Lexone + 1 part Classic on an active ingredient basis. For use in soybeans. DuPont.

Princep (simazine)--A long lasting preemergence or preplant herbicide for corn, shelterbelts and for fall weed control in alfalfa. Ciba-Geigy.

Probe (methazole)--For many annual broadleaf weeds and grasses pre- and postemergence in soybeans,

onions, potatoes and ornamentals. Experimental. Sandoz.

propachlor--Active ingredient in Ramrod. Used for grass weed control in corn and sorghum.

propazine--See Milogard.

Prowl (pendimethalin)--Used preemergence on corn and preemergence or preplant on soybeans grown on soils with more than 1.5% organic matter. American Cyanamid.

Prozine--A prepack of Prowl + atrazine. American Cyanamid.

Pursuit (AC 263,499)--Same family as Scepter under development for use in soybeans. American Cyanamid.

Pyramin (pyrazon)--Used for preemergence for broadleaf weeds in sugar beets. BASF-Wyandotte.

Racer (fluorochloridone)--Used for broadleaf weeds in wheat and sunflowers. Stauffer.

Ramrod--Trade name for propachlor. Monsanto.

Ramrod-atrazine Flowable--A combination of 3 lbs Ramrod and 1 lb atrazine for broad spectrum weed control in corn and sorghum. Monsanto.

Randex (CDAA)--A preemergence grass herbicide for corn, sorghum and soybeans grown for seed. Randex T for use on corn only, combines Randex with TCBC for improved broadleaf weed control. Monsanto.

Rescue (Alanap + 2,4-DB)--Used postemergence in mid-season for broadleaf weeds in soybeans. Uniroyal.

Reward (vernolate + R-33865 extender)--The extender lengthens the control span of Vernam. Stauffer.

Rodeo (glyphosate)--Special formulation of glyphosate for aquatic weed control. Similar to Roundup. Monsanto.

Ro-Neet (cycloate)--Used preplant incorporated in sugar beets for annual grass and some broadleaf weeds. Stauffer.

Roundup (glyphosate)--A postemergence nonselective translocated herbicide for annual and perennial grasses and broadleaf weeds. No soil residual. Monsanto.

Saddle--Generic Alachlor

Salute 4EC--Package blend of 1.33 lb metribuzin (Sencor) and 2.66 lbs trifluralin for soybeans. Mobay.

Salvo--A low volatile ester of 2,4-D. Vertac.

Scepter (imazaquin)--A preplant incorporated, preemergence and postemergence grass and broadleaf weed control herbicide for soybeans. American Cyanamid.

Screen--A protectant for application to sorghum seed to prevent Lasso injury. Monsanto.

Seige (DPX R7910)--Sister compound to Lexone for annual brome and other weed species in winter wheat. EUP. DuPont.

Sencor--Trade name for metribuzin. Mobay.

Sinbar (terbacil)--Used for dormant season control of annual grass and broadleaf weeds in established alfalfa. DuPont.

Solicam (norflurazon)--Used preemergence in fruit trees. Sandoz.

Sonalan (ethalfluralin)--Used preplant incorporated for annual grasses and certain broadleaf weeds in soybeans. Elanco.



**Spike** (tebuthiuron)--Used for total vegetation and selective brush control in grassland and noncrop areas. Elanco.

**Squadron**--Package mix of Prowl and Scepter. American Cyanamid.

**Stall**--Generic Alachlor.

**SULV** (2,4-D amine)--A 4 lb per gallon 2,4-D amine for aerial application undiluted or by ground equipment in 3 to 5 gallons of water. Uniroyal, Gordon.

**Surflan** (oryzalin)--Used preemergence for annual grasses in soybeans. Often used in combination. Elanco.

**Surpass** (vernolate + R-25788 antitode)--Vernam plus a safener for preplant incorporated grass control in corn. Stauffer.

**Sutan +** (butylate + R-25788)--A preplant incorporated herbicide for annual grasses in corn. Stauffer.

**Sutazine +** (Sutan+ + atrazine)--A combination of 4 parts Sutan+ and 1 part atrazine for preplant incorporated weed control in corn. Stauffer.

**2,4-D**--A growth regulating phenoxy herbicide for broadleaf weed control in grass crops. Many trade names.

**Tackle** (acifluorfen)--A postemergence herbicide for broadleaf weed control in soybeans. Rhone-Poulenc.

**Tandem** (tridiphane)--A postemergence herbicide for weed control in corn. Use in combination with atrazine or Bladex. Dow.

**TCA**--Used postemergence for annual and perennial grasses on noncropland; also preemergence in sugar beets. Vertac.

**Telar** (chlorsulfuron)--An industrial formulation of the active ingredient in Glean. DuPont.

**Telone** (dichlorophene)--A fumigant used preplant for quackgrass in potatoes. Dow.

**Tillam** (pebulate)--Registered preplant incorporated

for annual grass control in sugar beets. Stauffer.

**Touchdown** (sulphosate)--A nonselective, nonresidual translocated postemergence herbicide. Stauffer.

**Tough** (pyridate)--Used in combination with Bladex or atrazine for postemergence weed control in corn. Label pending. Terra.

**Treflan** (trifluralin)--Used preplant incorporated in soybeans and nursery stock for annual grass control. Elanco.

**Tricep**--A prepack of trifluralin + Scepter. Registration expected for 1988. American Cyanamid.

**Trifluralin**--The active ingredient in Treflan.

**Trimec**--A three way combination of 2,4-D, micoprop and dicamba for lawn weed and woody plant control. PBI-Gordon.

**Turbo 8EC**--A package mix of 6.55 lbs Dual and 1.45 lb Sencor for use in soybeans. Mobay.

**Tycor**--Sister compound to Sencor for control of annual brome and other weed species in winter wheat. EUP. Mobay.

**Velpar** (hexazinone)--Used for nonselective postemergence weed control on noncropland, Christmas tree plantings and alfalfa. DuPont.

**Velpar R.P.**--A liquid formulation used undiluted for spot spraying woody plants in range and pasture. DuPont.

**Vernam** (vernolate)--Used preplant incorporated in soybeans for annual grass and some broadleaf weeds. Stauffer.

**Vistar** (mefluidide)--A growth regulator for grass control and suppression. 3M Company.

**Weedazole**--Trade name for amitrole. Union Carbide.

**Whip** (fenoxaprop)--A postemergence grass herbicide for use in soybeans. Similar to Poast and Fusilade. Hoechst-Roussel.

## APPROXIMATE RETAIL PRICES OF SELECTED HERBICIDES

Herbicide	Price	Herbicide	Price	Herbicide	Price
Ally	\$25.00/oz	Crossbow	\$40.00/gal	Norosac 4G	\$ 1.20/lb
AAtrex 4L	\$ 9.60/gal	2,4-D amine	\$ 8.00/gal	Oust	\$ 7.50/oz
AAtrex 80W	\$ 1.60/lb	2,4-D ester	\$10.00/gal	Poast	\$80.00/gal
Alanap L	\$12.40/gal	Dacthal 75W	\$ 4.50/lb	Pramitol 5P	\$ 1.10/lb
Amiben DS	\$ 6.30/lb	Diquat	\$63.20/gal	Pramitol 25E	\$19.10/gal
Amitrol-T	\$20.00/gal	Dowpon M	\$ 2.00/lb	Prefar	\$32.80/gal
Antor	\$37.30/gal	Dual 8E	\$50.00/gal	Preview	\$26.50/lb
Aquaclean	\$ 1.00/lb	Embark 2E	\$80.00/gal	Princep 80W	\$ 3.30/gal
Aquathal	\$ 1.00/lb	Eptam 7E	\$24.30/gal	Princep 4L	\$15.60/gal
Aquathal 1.6E	\$57.60/gal	Eptam 10G	\$ .40/lb	Prowl	\$18.40/gal
Aquazine	\$ 5.20/gal	Eradicane	\$19.50/gal	Ramrod-atrazine	\$13.50/gal
Arsenal	\$130.00/gal	Eradicane Extra	\$24.80/gal	Ramrod Flowable	\$15.00/gal
Balan	\$14.80/gal	Extrazine	\$14.00/gal	Rescue	\$12.80/gal
Banvel	\$50.80/gal	Far Go 10G	\$ .90/lb	Reward	\$17.60/gal
Basagran	\$56.00/gal	Fusilade 2000	\$80.00/gal	Rhino	\$15.50/gal
Betanex	\$65.00/gal	Garlon 4	\$71.50/gal	Ro-Neet 7E	\$47.90/gal
Betamix	\$65.00/gal	Genate Plus	\$16.00/gal	Ro-Neet 10G	\$ 1.50/lb
Bicep	\$21.60/gal	Genep	\$24.30/gal	Roundup	\$65.00/gal
Bladex 4L	\$17.50/gal	Glean	\$17.00/oz	Salute	\$46.80/gal
Bladex 80W	\$ 3.50/lb	Goal 2E	\$72.00/gal	Scepter	\$160.00/gal
Blazer 2L	\$49.15/gal	Gramoxone	\$36.80/gal	Sencor/Lexone4L	\$95.00/gal
Brominal ME4	\$90.00/gal	Herbicide 273	\$35.60/gal	Sencor/LexoneDF	\$18.00/gal
Brominal 3+3	\$72.00/gal	Hyvar X	\$10.80/gal	Sinbar	\$21.00/lb
Bronate	\$72.00/gal	Hyvar XL	\$34.40/gal	Solicam	\$10.00/lb
Bronco	\$31.00/gal	Igran 80W	\$ 4.70/lb	Sonalan	\$22.00/gal
Buctril	\$42.00/gal	Karmex 80W	\$ 4.00/lb	Spike 5G	\$ 2.80/lb
Butoxone	\$14.00/gal	Kerb 50W	\$14.70/lb	Spike 80W	\$20.00/lb
Butyrac	\$14.00/gal	Krenite	\$40.40/gal	Spike 20P	\$ 8.00/lb
Classic	\$15.00/oz	Krovar I	\$ 8.60/lb	Surflan	\$56.00/gal
Casoron 10G	\$ 3.20/lb	Landmaster	\$20.00/gal	Sutan <sup>+</sup>	\$16.00/gal
Casoron 50W	\$14.00/lb	Lasso	\$20.00/gal	Sutazine	\$15.50/gal
Casoron 4G	\$ 1.20/lb	Lasso II	\$ 1.00/lb	Tandem	\$89.00/gal
Chem-Hoe 4L	\$16.00/gal	Lariat	\$15.00/gal	Treflan	\$24.00/gal
Cobra	\$100.00/gal	Leafex 3	\$ 3.20/gal	Tordon 22K	\$92.00/gal
Commence	\$50.00/gal	Lorox 4L	\$54.00/gal	Turbo	\$75.00/gal
Command 4EC	\$60.00/gal	Lorox Plus	\$13.20/lb	Velpar L	\$105.00/gal
Conquest	\$14.00/gal	Marksman	\$19.00/gal	Vernam	\$26.00/gal
Crop Oil Conc.	\$ 6.00/gal	MCPA	\$12.00/gal	X-77	\$14.80/gal