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## EC87-130 A 1987 Guide for Herbicide Use in Nebraska

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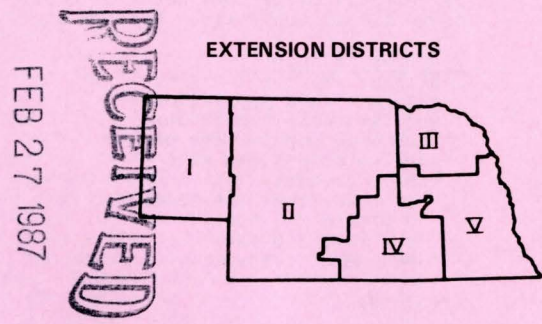
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# A 1987 GUIDE FOR--- HERBICIDE USE IN NEBRASKA...

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| Index   | Page       |
|---|------------|
| Weed Response Charts . . . . .                              | 2,16,20,23 |
| Soil Applied Herbicides                                     |            |
| Field Corn and Popcorn . . . . .                            | 3          |
| Forage Sorghum . . . . .                                    | 5          |
| Grain Sorghum . . . . .                                     | 6          |
| Soybeans . . . . .  | 7          |
| Proso Millet . . . . .                                      | 8          |
| Sunflowers . . . . .  | 8          |
| Conservation Tillage Systems . . . . .                      | 9          |
| No-till Including Early Preplant . . . . .                  | 9          |
| Ecofarming (Ecofallow) . . . . .                            | 11         |
| Ridge Till . . . . .  | 15         |
| Field Crops—Postemergence & Layby . . . . .                 | 17         |
| Field Crops—Desiccants, Rescue, &<br>Harvest Aids . . . . . | 19         |
| Fieldbeans . . . . .  | 21         |
| Potatoes . . . . .  | 21         |
| Sugar Beets . . . . .                                       | 22         |
| Melons and Cucurbits . . . . .                              | 23         |
| Onions . . . . .  | 23         |
| Forage Crops, Pastures & Ranges . . . . .                   | 24         |
| Trees & Shrubs; Christmas &<br>Fruit Trees . . . . .        | 26         |
| Aquatic Weeds . . . . .                                     | 27         |
| Moss in Stock & Nurse Tanks . . . . .                       | 27         |
| Non-Crop Areas . . . . .                                    | 28         |
| Troublesome Weeds & Woody Plants . . . . .                  | 29         |
| Herbicide Dictionary . . . . .                              | 36         |
| Retail Prices of Selected Herbicides . . . . .              | 40         |
| Special Application Equipment . . . . .                     | 25         |
| Mixing Herbicides . . . . .                                 | 35         |
| Conversion Tables . . . . .                                 | 39         |
| Cleaning the Sprayer . . . . .                              | 40         |



**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"*

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.

- 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.



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Leo E. Lucas, Director of Cooperative Extension Service, University of Nebraska, Institute of Agriculture and Natural Resources.



WEED RESPONSE TO SELECTED SOIL APPLIED HERBICIDES

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 on page 3-8.

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  
mornnglory  
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>

Field Corn and Popcorn\*

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |      |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------|
| AAtrex/Atrazine*  | E | G | E | G | F | P | G | E | E | E | E | E | E | F | P | E | E | G | E | E | 6-24 |
| Bicep or Dual + AAtrex                                  | G | F | F | F | G | G | F | G | F | F | F | F | F | F | P | G | G | G | F | 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                          | E | G | E | G | G | F | G | E | E | E | G | E | E | F | P | E | G | F | E | G | 6-18 |
| Dual  | P | E | G | P | E | E | E | P | P | P | G | F | F | F | P | P | P | P | E | E | 2-5  |
| Dual + Atrazine + Sencor                                | G | F | F | F | G | G | F | F | G | E | E | E | G | F | P | G | G | G | G | G | 6-12 |
| Dual + Bladex   | G | E | E | F | E | E | E | F | E | G | G | E | G | F | P | G | F | F | G | G | 2-5  |
| Dual + Bladex + Sencor                                  | G | E | E | F | E | E | E | F | G | G | E | E | G | F | P | G | F | F | G | G | 2-5  |
| Eradicane/Eradicane Extra*                              | G | E | E | P | E | E | E | P | F | G | G | F | F | 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 | F | F | 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 | F | F | P | P | P | P | E | E | 2-4  |
| Lasso + Atrazine*                                       | G | E | E | F | G | G | E | F | E | E | E | E | G | F | P | G | G | G | E | E | 6-18 |
| Lasso or Dual + Atrazine + Bladex/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 | G | F | P | G | G | G | G | G | 6-12 |
| Lasso + Bladex*   | G | E | E | F | E | E | E | F | E | G | G | E | G | F | P | G | F | F | G | G | 2-4  |
| Lasso + Bladex + Sencor                                 | G | E | E | F | E | E | E | F | G | G | E | E | G | F | P | G | F | F | G | G | 2-5  |
| Prowl + Atrazine  | G | E | G | F | E | E | E | F | E | E | E | G | G | F | P | G | G | G | G | G | 6-18 |
| Prowl + Bladex  | G | E | G | F | E | E | E | F | E | E | G | G | G | F | P | G | F | F | F | G | 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 | G | G | G | G | G | G | G | E | E | 6-18 |
| Sutan+ + Atrazine + Bladex/Extrazine*                   | G | E | G | P | E | E | E | G | E | E | E | G | G | G | G | G | F | F | G | E | 6-18 |
| Sutan+ + Bladex*  | F | E | G | P | E | E | E | G | E | E | E | G | G | G | G | G | F | F | G | G | 2-4  |
| Sutazine+ or Atrabute or Rhino*                         | G | E | E | F | E | E | E | G | E | E | E | G | G | G | G | G | G | G | E | E | 6-18 |

Sorghum—Grain and Forage\*\*

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |      |      |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------|------|
| 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 | 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 | F | P | P | P | P | F | F    | 2-5  |
| Dual or Lasso + Atrazine + Seed Safener | G | E | E | F | G | G | E | F | E | E | E | E | G | F | P | G | G | F | G | F    | 6-18 |
| Igran + AAtrex                          | E | G | E | G | F | P | G | G | E | E | E | E | F | P | E | E | G | E | F | 6-18 |      |
| Modown + Dual or Lasso                  | G | G | G | P | G | G | E | G | G | G | E | P | P | F | P | G | P | F | G | F    | 1-2  |
| Ramrod                                  | P | G | P | P | G | G | E | P | P | F | G | P | 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 | F | F | G | G    | 6-18 |
| Ramrod + Bladex                         | G | G | E | F | G | G | E | F | E | G | F | G | G | F | P | G | F | F | G | F    | 2-4  |

Soybeans

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |      |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------|
| Command + Treflan or Sonalan                                   | 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 | P | 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 | E | 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 | E | F | G | E | F | 2-4  |
| Lasso + Modown   | G | G | G | P | G | G | E | G | G | G | 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 | G | F | F | P | G | F | F | G | G | 2-4  |
| Prowl  | P | E | P | P | E | E | E | P | F | G | E | P | G | G | F | P | P | F | P | 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 |
| Reward   | F | E | F | P | E | E | E | P | P | G | G | F | G | G | F | P | P | F | F | F | 1-2  |
| Scepter + Dual or Lasso  | P | E | G | P | 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 | G | E | E | G | - | E | 6-15 |
| Sonalan  | P | E | F | P | E | E | E | P | F | G | E | 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    |
| Split-Appl.-Treflan/Ribal/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/Ribal/Trifluralin + Sencor/Lexone or Salute            | 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 |

<sup>1</sup>Crop varieties vary in their response to herbicides.  
<sup>2</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 forage sorghum.  
 \*\*\*Kochia in some areas has developed resistance to Atrazine, Bladex and other triazines.

## SOIL APPLIED HERBICIDES—CORN

3

Rates are for applications made at or near planting time - See page 9 for Early Preplant Rates

**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. Rainfall or sprinkler irrigation prior to weed germination required. **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. **Early post** refers to preemergence 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. Weed control with preemergence treatments may be

poor if there is no rain to leach 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. **Atrazine may carry over and injure alfalfa, beans, potatoes, sugar beets and small grains the following year.** Herbicide carry-over in soils increase as one goes westward in Nebraska. Carryover problems also increase on low organic matter and high pH soils.

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

| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides) | Commercial product per Acre |                           |                               | Application Time, Remarks and<br>Approximate Cost/A Broadcast |
|--|-----------------------------|---------------------------|-------------------------------|---|
|  | Sandy<br>Loam<br><1½% OM    | Silt<br>Loam<br>1½-2½% OM | Silty-Clay<br>Loam<br>>2½% OM |   |

### Field Corn and Popcorn\* — Tilled Seedbeds

Early Preplant, No-Till, Ecofarming, and Ridge Planting Rates Found on Pages 9, 13, and 15

|  |   |   |   |  |
|--|---|---|---|--|
| *AATREX/ATRAZINE 4L <sup>3</sup>   | 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<br>(3.33 lbs Dual plus<br>2.67 lbs AAtrex/gal)   | 1.5 qt                                  | 1.8 qt  | 2.4 qt  | EPP**, PPSA, PRE, SURFACE MIX, SPRINKLER, EARLY POST or LAYBY...<br>Cost: \$10.80-\$17.33.   |
| BLADEX 4L <sup>3</sup>   | Do not<br>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 <sup>3</sup><br>and<br>ATRAZINE 4L <sup>3</sup>  | 0.75-1.25 qt<br>+<br>0.5 qt             | 2 qt<br>+<br>1 qt                                       | 2.5 qt<br>+<br>1.25 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<br>(3 lbs Bladex plus<br>1 lb Atrazine)  | 1.5 qt                                  | 2.75 qt   | 3.75 qt   |  |
| EXTRAZINE 4L<br>(2.7 lbs Bladex plus<br>1.3 lbs Atrazine)  | 1.5 qt                                  | 2.75 qt   | 3.75 qt   |  |
| DUAL 8E<br>or<br>DUAL 25G  | 0.75 qt<br>or<br>6 lb                   | 1.25 qt<br>or<br>10 lb                                  | 1.5 qt<br>or<br>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<br>with<br>AATREX 4L <sup>3</sup><br>or with<br>BLADEX 4L <sup>3</sup>   | 0.67 qt<br>+<br>1 qt<br>or<br>0.75-1 qt | 0.75 qt<br>+<br>1.25 qt<br>or<br>1.75 qt                | 1 qt<br>+<br>1.67 qt<br>or<br>2-2.3 qt              |  |
| DUAL 8E<br>with<br>ATRAZINE 4L <sup>3</sup><br>and<br>BLADEX 4L <sup>3</sup>   | 1.3 pt<br>+<br>1 pt<br>+<br>1 pt        | 1.5 pt<br>+<br>1 pt<br>+<br>2 pt                        | 2 pt<br>+<br>1.25 pt<br>+<br>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<br>+<br>SENCOR/LEXONE DF <sup>3</sup><br>with<br>ATRAZINE 4L <sup>3</sup><br>or with<br>BLADEX 4L <sup>3</sup> | Do not<br>use                           | 1.5 pt<br>+<br>0.33 lb<br>+<br>1.5-3 pt<br>or<br>2.5 pt | 2 pt<br>+<br>0.33 lb<br>+<br>1.5-3 pt<br>or<br>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.   |

(Continued next page)

## SOIL APPLIED HERBICIDES—CORN (continued)

| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides)                        | Commercial product per Acre     |  |   | Application Time, Remarks and<br>Approximate Cost/A Broadcast  |
|---|---------------------------------|--|---|--|
|   | Sandy<br>Loam<br><1½% OM        | Silt<br>Loam<br>1½-2½% OM                    | Silty-Clay<br>Loam<br>>2½% OM               |  |
| <b>Field Corn and Popcorn* (continued)</b>  |                                 |  |   |  |
| *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 \$16.10-\$22.15; Eradicane Extra + Bladex \$18.50-\$27.85. |
| *ERADICANE EXTRA  | 5.25 pt                         | 5.3 pt                                       | 5.5 pt                                      |  |
| *ERADICANE 6.7E<br>or<br>*ERADICANE EXTRA<br>+  | 4.75 pt<br>or<br>5.25 pt<br>+   | 4.75 pt<br>or<br>5.3 pt<br>+                 | 4.75 pt<br>or<br>5.5 pt<br>+                |  |
| *ATRAZINE 4L <sup>3</sup><br>or<br>*BLADEX 4L <sup>3</sup>                                      | 2 pt<br>or<br>2 pt              | 2.4 pt<br>or<br>3.2 pt                       | 3.2 pt<br>or<br>4 pt                        |  |
| EXTRAZINE 4L/CONQUEST 4L<br>+   | 1.25 qt<br>+                    | 1.75 qt<br>+                                 | 2.25 qt<br>+                                | PPSA, PRE, or EARLY POST...Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: Extrazine/Conquest \$6.40-\$15.00; Extrazine/Conquest + Dual \$13.15-\$21.50; Extrazine/Conquest + Lasso \$15.80-\$18.80.  |
| DUAL 8E<br>or<br>LASSO 4EC  | 1.3 pt<br>or<br>2 qt            | 1.75 pt<br>or<br>2 qt                        | 2 pt<br>or<br>2 qt                          |  |
| *LASSO 4EC <sup>4</sup><br>or<br>*LASSO II 15G  | 3 qt                            | 2.5 qt<br>or<br>17 lb                        | 3 qt<br>or<br>20 lb                         | PPSA, PRE, SURFACE MIX or LIQUID THROUGH SPRINKLER...See page 10. Cost: \$13.50-\$16.20.   |
| *LASSO 4EC <sup>4</sup><br>+  | 2 qt<br>+                       | 2 qt<br>+                                    | 2.25 qt<br>+                                | PPSA, PRE, SURFACE MIX, SPRINKLER or EARLY POST...Tank mix. See page 10. Cost: Lasso + Aatrex/Atrazine \$13.00-\$14.40; Lasso + Atrazine Flowable \$12.80-\$16.00.   |
| *AATREX/ATRAZINE 4L <sup>3</sup>  | 1 qt                            | 1.2 qt                                       | 1.6 qt                                      |  |
| *LASSO & ATRAZINE FLOWABLE <sup>4</sup><br>(2.5 lb Lasso + 1.5 lb<br>Atrazine/gal)              | 3.0 qt                          | 3.2 qt                                       | 3.5 qt                                      |  |
| *LASSO 4EC<br>+   | 2 qt<br>+                       | 2 qt<br>+                                    | 2 qt<br>+                                   | PPSA, PRE or SPRINKLER...Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$15.80-\$20.20.   |
| *BLADEX 4L <sup>3</sup>   | 1 qt                            | 1.7 qt                                       | 2 qt  |  |
| LASSO 4EC<br>+  | Do not<br>use                   | 2 qt<br>+                                    | 2 qt<br>+                                   | 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 \$18.85-\$20.55; Lasso + Sencor + Bladex \$23.00-\$24.15.   |
| SENCOR DF <sup>3</sup><br>with<br>ATRAZINE 4L <sup>3</sup><br>or with<br>BLADEX 4L <sup>3</sup> |                                 | 0.33 lb<br>+<br>0.75-1.5 qt<br>or<br>1.25 qt | 0.33 lb<br>+<br>0.75-1.5 qt<br>or<br>1.5 qt |  |
| LASSO 4EC<br>with<br>ATRAZINE 4L <sup>3</sup><br>and<br>BLADEX 4L <sup>3</sup>                  | 2 qt<br>+<br>1 pt<br>+<br>1 pt  | 2 qt<br>+<br>1 pt<br>+<br>2 pt               | 2 qt<br>+<br>1.25 pt<br>+<br>2.5 pt         | PPSA or PRE...3-way mix. Injury may occur on soils that are calcareous, sandy or below 1% organic matter. Cost: \$14.30-\$18.15.   |
| PROWL 4EC<br>with<br>ATRAZINE 4L <sup>3</sup><br>or with<br>BLADEX 4L <sup>3</sup>              | 1 qt<br>+<br>1 qt<br>or<br>1 qt | 1.5 qt<br>+<br>1.2 qt<br>or<br>1.7 qt        | 1.5 qt<br>+<br>1.6 qt<br>or<br>2 qt         | PRE or EARLY POST...Corn injury may occur if replanting is necessary. Cost: Prowl + Atrazine \$9.50-\$10.50; Prowl + Bladex \$14.90-\$16.30.   |
| *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: \$11.50.   |

(Continued next page)

| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides) | Commercial product per Acre |                           |                               | Application Time, Remarks and<br>Approximate Cost/A Broadcast |
|--|-----------------------------|---------------------------|-------------------------------|---|
|  | Sandy<br>Loam<br><1½% OM    | Silt<br>Loam<br>1½-2½% OM | Silty-Clay<br>Loam<br>>2½% OM |   |

Field Corn and Popcorn\* (continued)

|  |  |  |  |   |
|--|--|--|--|---|
| *SUTAN+ 6.7E/GENATE PLUS<br>with<br>*ATRAZINE 4L <sup>3</sup><br>or with<br>*BLADEX 4L <sup>3</sup>                                    | 3.75 pt<br>+<br>2 pt<br>or<br>2 pt                   | 3.75 pt<br>+<br>2.4 pt<br>or<br>3.5 pt               | 3.75 pt<br>+<br>3.2 pt<br>or<br>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 control. Cost: Sutan/Genate + Atrazine \$10.80-\$12.20; Sutan/Genate + Bladex \$13.30-\$18.00; Sutazine/Atrabutes/Rhino \$13.20-\$15.40. |
| *SUTAZINE+ATRABUTE+/RHINO<br>(4.8 lbs Butylate +<br>1.2 lbs Atrazine/gal)  | 6 pt   | 7 pt   | 7 pt   |   |
| ATRABUTE+ II<br>(4.3 lbs Butylate +<br>1.7 lbs Atrazine/gal)   | 6 pt   | 7.8 pt   | 7.8 pt   |   |
| *SUTAN+ 6.7E/GENATE PLUS<br>with<br>*ATRAZINE 4L <sup>3</sup><br>and<br>*BLADEX 4L <sup>3</sup><br>or with<br>EXTRAZINE 4L/CONQUEST 4L | 3.75 pt<br>with<br>1 pt<br>+<br>1 pt<br>+<br>1.25 qt | 3.75 pt<br>with<br>1 pt<br>+<br>2 pt<br>+<br>1.75 qt | 3.75 pt<br>with<br>1.25 pt<br>+<br>2.5 pt<br>+<br>2 qt | PPI...Tank mix. Apply to dry surface soil. Incorporate immediately by cross tandem discing or equivalent soil mixing. Increase rates for sandbur 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 \$12.10-\$14.00; Sutan/Genate + Extrazine/Conquest \$13.60-\$16.60.   |

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 + Atrazine (PRE), 2,4-D (PRE).

On field corn, 1 pt 2,4-D ester (4 lb/gal) or 0.5 pint Banvel may be added to EPP, PPSA and PRE treatments to control emerged broadleaf weeds. Do not add Banvel on sandy soil.

Forage Sorghum

UNDER MOST CONDITIONS HERBICIDES ARE NOT NECESSARY

|                          |                        |        |        |   |
|--------------------------|------------------------|--------|--------|---|
| ATRAZINE 4L <sup>3</sup> | Do not<br>use          | 2 qt   | 2.4 qt | EPP, PPSA, PPI, PRE or SURFACE MIX... Make preplant applications only on fine textured soils. Heavy rains may leach and cause crop injury. Cost: \$4.80-\$5.75. |
| DUAL 8E                  | 1.5 pt                 | 2 pt   | 2.5 pt | EPP, PPSA, PPI, PRE or SURFACE MIX... <b>Seed must be Concep treated.</b> Cost: Dual \$9.40-\$15.65; Bicep \$12.95-\$17.25.                                     |
| BICEP 6L                 | 1.5 qt on<br>1-1.5% OM | 1.8 qt | 2.4 qt |   |

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:  
1 qt AAtrex or Atrazine 4L = 1.25 lb AAtrex or Atrazine 80W = 1.1 lb AAtrex Nine-O  
1 qt Bladex 4L = 1.25 lb Bladex 80W = 1.1 lb Bladex 90 DF  
0.5 pt Sencor L = 0.5 lb Sencor 50W = 0.33 lb Sencor DF

<sup>4</sup>Consult label for surface blend rates.

\*Registered for use on popcorn.

\*\*See page 9 for specific rates.

## SOIL APPLIED HERBICIDES—GRAIN SORGHUM

| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides)                 | Commercial product per Acre                    |   |  | Application Time, Remarks and<br>Approximate Cost/A Broadcast  |
|--|--|---|--|--|
|  | Sandy<br>Loam<br><1½% OM                       | Silt<br>Loam<br>1½-2½% OM               | Silty-Clay<br>Loam<br>>2½% OM                |  |
| <b>Grain Sorghum (Milo)—Tilled Seedbeds</b>  |  |   |  |  |
| Early Preplant, No-Till, and Ecofarming Rates Found on Pages 10 and 14.                  |  |   |  |  |
| AATREX 4L/ATRAZINE 4L <sup>3</sup>   | Do not<br>use                                  | 2 qt                                    | 2.4 qt                                       | EPP*, PPSA, PPI, PRE or SURFACE MIX...<br>Preplant applications should be made<br>only on fine textured soils. Cost:<br>\$4.80-\$5.75.   |
| BICEP 6L<br>(3.33 lbs Dual + 2.67<br>lbs Atrazine/gal)                                   | 1.5 qt on<br>1-1.5% OM                         | 1.8 qt                                  | 2.4 qt                                       | EPP*, PPSA, PRE or SURFACE MIX... <b>Seed<br/>must be Concep treated.</b> Do not use<br>Atrazine on sandy, high pH or calcar-<br>eous soils. Cost: Bicep \$10.80-<br>\$17.25; Dual \$9.40-\$15.65; Dual +<br>AAtrex/Atrazine \$11.00-\$15.80; Dual +<br>Atrazine + Bladex \$14.00-\$21.30.                                       |
| DUAL 8E<br>or<br>DUAL 25G  | 1.5 pt<br>or<br>6 lb                           | 2 pt<br>or<br>8 lb                      | 2.5 pt<br>or<br>10 lb                        |  |
| DUAL 8E<br>with<br>AATREX/ATRAZINE 4L <sup>3</sup><br>or with<br>ATRAZINE 4L + BLADEX 4L | 1.5 pt<br>+<br>0.5-0.75 qt<br>or<br>Do not use | 1.5 pt<br>+<br>1 qt<br>or<br>0.4-0.8 qt | 1.75-2 pt<br>+<br>1.5 qt<br>or<br>0.6-1.0 qt |  |
| IGRAN 80W<br>+<br>AATREX 80W   | Do not<br>use                                  | 2 lb<br>+<br>1 lb                       | 2 lb<br>+<br>1 lb                            | PPSA, PPI, or SURFACE MIX...Apply with-<br>in 2 weeks of planting. Do not feed or<br>graze treated forage. Cost: \$11.10.  |
| LAZZO 4EC <sup>4</sup>   | 2.5 qt   | 2.5 qt                                  | 3 qt   | PPSA, PRE or SURFACE MIX... <b>Seed must<br/>be Screen treated.</b> Do not use<br>Atrazine on sandy, high pH or calcar-<br>eous soils. Cost: Lasso \$13.50-<br>\$16.20; Lasso + Atrazine \$11.80-\$13.50;<br>Lasso & Atrazine Flowable \$12.00-<br>\$14.00; Lasso + Atrazine + Bladex<br>\$15.10-\$19.85.                        |
| LAZZO 4EC <sup>4</sup><br>with<br>ATRAZINE 4L<br>or with<br>ATRAZINE 4L + BLADEX 4L      | 2 qt<br>+<br>0.5-0.75 qt<br>or<br>Do not use   | 2 qt<br>+<br>1 qt<br>or<br>0.4+0.8 qt   | 2.25 qt<br>+<br>1.25 qt<br>or<br>0.6+1.0 qt  |  |
| LAZZO & ATRAZINE FLOWABLE <sup>4</sup><br>(2.5 lbs Lasso +<br>1.5 lbs Atrazine/gal)      | Do not use                                     | 3 qt                                    | 3.5 qt                                       |  |
| RAMROD FLOWABLE <sup>3</sup><br>or<br>RAMROD 20G   | 4 qt<br>or<br>20 lb                            | 4 qt<br>or<br>20 lb                     | 4 qt<br>or<br>20 lb                          | PRE...May cause skin irritation to<br>applicator. Do not feed treated<br>forage to dairy animals. Leaches on<br>sandy soil. Cost: \$16.80.   |
| RAMROD FLOWABLE <sup>3</sup><br>+<br>AATREX 4L/ATRAZINE 4L <sup>3</sup>                  | Do not<br>use                                  | 3 qt<br>+<br>0.75-1 qt                  | 3 qt<br>+<br>1.25 qt                         | PRE...In southwest Nebraska hold<br>Atrazine rate to 0.75 qt. Rain may<br>leach herbicides and cause sorghum<br>injury or poor weed control. Do not<br>feed treated forage to lactating<br>dairy animals. Cost: Ramrod +<br>Bladex \$16.40-\$17.00; Ramrod +<br>Atrazine \$14.80-\$15.40; Ramrod &<br>Atrazine Flowable \$14.50. |
| RAMROD FLOWABLE <sup>3</sup><br>+<br>BLADEX 4L <sup>3</sup>                              | Do not<br>use                                  | 5 pt<br>+<br>2.5 pt                     | 5 pt<br>+<br>2.75 pt                         |  |
| RAMROD & ATRAZINE FLOWABLE<br>(3 lbs Ramrod + 1 lb<br>Atrazine/gal)                      | Do not<br>use                                  | 4 qt                                    | 4 qt   |  |
| LAZZO 4EC<br>or<br>DUAL 8E<br>+<br>MODOWN 4F   | 2 qt<br>or<br>0.75 qt<br>+<br>1.5 qt           | 2 qt<br>or<br>1 qt<br>+<br>1.5 qt       |  | PRE...Tank mix. <b>Seed must be Concep<br/>or Screen treated.</b> Modown not influ-<br>enced by soil texture, organic matter<br>or pH. Rain may "splash" Modown onto<br>sorghum and cause injury. Cost:<br>Lasso + Modown \$19.95-\$20.55; Dual +<br>Modown \$17.55-\$22.25.   |

OTHER REGISTERED TREATMENTS FOR SORGHUM: Bladex + Propazine [Milogard] (PRE), Dual 8E + Igran 80W (PRE), Dual 8E + Milogard (PRE), Igran 80W (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 (PRE), Extrazine 24C until March 1987 or later if extended by EPA.

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:

1 qt Aatrex or Atrazine 4L = 1.25 lb Aatrex or Atrazine 80W = 1.1 lb Aatrex Nine-O

1 qt Bladex 4L = 1.25 lb Bladex 80W = 1.1 lb Bladex 90 DF

1 qt Ramrod Flowable = 1.5 lb Ramrod 65W

<sup>4</sup>Consult label for surface blend rates.

| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides)  | Commercial product per Acre  |   |  | Application Time, Remarks and<br>Approximate Cost/A Broadcast  |
|---|--|---|--|--|
|   | Sandy<br>Loam<br><1½% OM   | Silt<br>Loam<br>1½-2½% OM   | Silty-Clay<br>Loam<br>>2½% OM  |  |
| <b>Soybeans—Tilled Seedbeds</b>   |  |   |  |  |
| Early Preplant, No-Till, and Ecofarming Rates Found on Pages 10 and 13.   |  |   |  |  |
| COMMAND 4EC<br>with<br>TREFLAN 4EC<br>or with<br>SONALAN 4EC  | 0.75 pt<br>+<br>1 pt<br>or<br>1.5 pt   | 1.2 pt<br>+<br>1.25 pt<br>or<br>2 pt  | 1.5 pt<br>+<br>1.5 pt<br>or<br>2.5 pt  | PPI...Immediately incorporate. Command vapor or droplet drift may damage green vegetation. Carryover may damage wheat seeded the same fall. Cost: Command + Treflan \$8.10-\$15.00; Command + Sonalan \$9.75-\$18.15.  |
| DUAL 8E<br>or<br>DUAL 25G   | 2 pt<br>or<br>8 lb   | 2.5 pt<br>or<br>8 lb  | 2.5 pt<br>or<br>10 lb  | 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.  |
| DUAL 8E<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup>   | Do not<br>use  | 1.5 pt<br>+<br>0.5 lb   | 2 pt<br>+<br>0.6 lb  |  |
| TURBO 8EC<br>(6.55 lb Dual +<br>1.45 lb Sencor)   | Do not<br>use  | 2.0 pt  | 2.5-2.75 pt  |  |
| DUAL 8E<br>or<br>LASSO 4EC<br>+<br>MODOWN 4F <sup>3</sup>   | 1 qt<br>or<br>2.5 qt<br>+<br>1.5 qt  | 1 qt<br>or<br>2.5 qt<br>+<br>1.5 qt   |  | PRE or SURFACE MIX WITH ROTARY HOE... Modown not greatly influenced by soil texture, organic matter or pH. Cost: \$23.25.  |
| LASSO 4EC <sup>4</sup><br>or<br>LASSO II 15G  | 2.5 qt<br>or<br>17 lb  | 2.5 qt<br>or<br>17 lb   | 2.5 qt<br>or<br>17 lb  | 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.   |
| LASSO 4EC <sup>4</sup><br>+<br>SENCOR/LEXONE DF <sup>3,5</sup>  | Do not<br>use  | 2 qt<br>+<br>0.5 lb   | 2 qt<br>+<br>0.6 lb  |  |
| LOROX L <sup>3</sup><br>with<br>DUAL 8E<br>or with<br>LASSO 4EC   | 1-1.3 pt<br>+<br>2 pt<br>or<br>4 pt  | 1.5 pt<br>+<br>2 pt<br>or<br>4 pt   | 2 pt<br>+<br>2 pt<br>or<br>4 pt  | 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.  |
| PROWL 4EC   | 1.5 pt   | 2 pt  | 2.5 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<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup>   | 1.5 pt<br>+<br>0.33 lb   | 2 pt<br>+<br>0.5 lb   | 2 pt<br>+<br>0.6 lb  |  |
| SCPTER 1.5EC<br>(with or without<br>SENCOR)<br>with<br>LASSO<br>or with<br>DUAL<br>or with<br>PROWL<br>or with<br>TREFLAN<br>or with<br>SONALAN | 0.67 pt<br>+<br>(0.33 lb)<br>+<br>2 qt<br>or<br>2 pt<br>or<br>1.5 pt<br>1.0 pt<br>or<br>1.5 pt | 0.67 pt<br>+<br>(0.33 lb)<br>+<br>2 qt<br>or<br>2 pt<br>or<br>1.25 pt<br>or<br>2 pt | 0.67 pt<br>+<br>(0.50 lb)<br>+<br>2 qt<br>or<br>2 pt<br>or<br>2 pt<br>1.5 pt<br>or<br>2.5 pt | PRE or SURFACE MIX with Lasso or Dual. PPI Prowl 7 days, Treflan 1 day, or Sonalan 2 days. Carryover from over application can injure corn the following year. Scepter labeled eastern 1/5 of state + irrigated soybeans elsewhere. Cost: Scepter + Lasso \$24.80; Scepter + Dual \$26.50; Scepter + Prowl \$17.45-\$18.60; Scepter + Treflan \$16.50-\$17.75; Scepter + Sonalan \$18.15-\$20.90; with optional Sencor add \$6.30. |
| SONALAN 3EC   | 1.7 pt   | 2.3 pt  | 2.7 pt   | 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.  |
| SONALAN 3EC<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup>   | 1.5 pt<br>+<br>0.33 lb   | 2 pt<br>+<br>0.5 lb   | 2.5 pt<br>+<br>0.6 lb  |  |
| TREFLAN 4EC/RIBAL/TRIFLURALIN   | 1 pt   | 1.5 pt  | 1.75 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/Ribal/Trifluralin \$2.55-\$4.45; Treflan/Ribal/Trifluralin + Sencor/Lexone/Salute \$8.85-\$13.95.  |
| TREFLAN 4EC/RIBAL/TRIFLURALIN<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup>   | 1 pt<br>+<br>0.33 lb   | 1.25 pt<br>+<br>0.5 lb  | 1.5 pt<br>+<br>0.6 lb  |  |
| SALUTE 4EC<br>(2:1 ratio<br>Trifluralin + Metribuzin)   | 1.5 pt   | 2.25 pt   | 3.0 pt   |  |



| Herbicide<br>(See Weed Response<br>Chart before<br>selecting herbicides)   | Commercial product per Acre |                            |                               | Application Time, Remarks and<br>Approximate Cost/A Broadcast   |
|--|-----------------------------|----------------------------|-------------------------------|---|
|  | Sandy<br>Loam<br><1½% OM    | Silt<br>Loam<br>1½-2½% OM  | Silty-Clay<br>Loam<br>>2½% OM |   |
| <b>Soybeans (continued)</b>  |                             |                            |                               |   |
| PROWL 4EC<br>or<br>TREFLAN 4EC/RIBAL/TRIFLURALIN<br>(PPI) with<br>SENCOR/LEXONE DF <sup>3,5</sup> PPI<br>followed by<br>SENCOR/LEXONE DF <sup>3,5</sup> PRE<br>(Split application) | 1.5 pt<br>or<br>1 pt<br>+   | 2 pt<br>or<br>1.25 pt<br>+ | 2 pt<br>or<br>1.5 pt<br>+     | SPLIT SHOT, PPI and PRE...Improves broadleaf control. For best results immediately incorporate first application. 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/Ribal/Trifluralin + Sencor/Lexone + Sencor/Lexone \$8.85-\$16.40; Prowl + Sencor/Lexone + Prowl + Sencor/Lexone \$10.90-\$19.50. |
| PROWL 4EC<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup> PPI<br>followed by<br>PROWL 4EC<br>+<br>SENCOR/LEXONE DF <sup>3,5</sup> PRE<br>(Split application)                               | 1 pt<br>+                   | 1.5 pt<br>+                | 1.5 pt<br>+                   |   |
| REWARD 6E  | 2.6 pt                      | 3.3 pt                     | 4 pt                          | PPI...For best results immediately incorporate. Plant soybeans no deeper than 2 inches. Cost: \$5.70-\$8.80.  |
| DUAL 8E<br>or<br>LASSO 4EC <sup>4</sup><br>with<br>AMIBEN DS<br>and<br>SENCOR/LEXONE DF <sup>3,5</sup>   | 1.5 pt<br>or<br>1.5 qt<br>+ | 1.5 pt<br>or<br>2 qt<br>+  | 2 pt<br>or<br>2 qt<br>+       | PRE or SURFACE MIX...3-way mix. To reduce injury on calcareous soil reduce Sencor/Lexone rate by 1/3. Cost: Dual + Amiben + Sencor/Lexone \$32.10-\$35.20; Lasso + Amiben + Sencor/Lexone \$30.80-\$33.50.  |
| Prowl 4EC<br>or<br>SONALAN 3EC<br>or<br>TREFLAN 4EC<br>with<br>COMMAND 4EC<br>and<br>SENCOR/LEXONE DF <sup>3,5</sup>   | 1.5 pt<br>or<br>1.5 pt<br>+ | 2 pt<br>or<br>2 pt<br>+    | 2 pt<br>or<br>2.5 pt<br>+     | 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: Sonalan + Command + Sencor/Lexone \$14.50-\$27.65; Treflan + Command + Sencor/Lexone \$12.85-\$24.50.   |

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 and 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), Propachlor (PRE, seed beans only), 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).

### Proso Millet

|                                 |        |      |      |   |
|---------------------------------|--------|------|------|---|
| AATREX/ATRAZINE 4L <sup>3</sup> | 1-2 pt | 2 pt | 3 pt | EPP, PPSA, PPI or PRE...Do not use on foxtail millets. Do not plant wheat on treated fields during year of use. Injury and carryover can be a problem on calcareous outcroppings, eroded areas and on terraced fields. Cost: \$1.20-\$2.40. |
|---------------------------------|--------|------|------|---|

### Sunflowers

|              |        |         |        |   |
|--------------|--------|---------|--------|---|
| 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: Treflan \$2.55-\$5.10; Prowl \$3.45-\$5.75; Sonalan \$4.10-\$8.21. |
| SONALAN 3 EC | 1.5 pt | 2 pt    | 3 pt   |   |
| PROWL        | 1.5 pt | 2 pt    | 2.5 pt | PPI or PRE...Incorporate into the upper 0-2 inches of soil. Cost: \$15.12-\$22.68.  |
| AMIBEN DS    | 2.4 lb | 3 lb    | 3.6 lb |   |
| LASSO 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: \$10.50-\$18.35.   |

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:

1 pt Lorox L = 1.0 lb 50W

1 pt Sencor L or Lexone 4L = 1 lb 50W = 0.67 lb Lexone DF or Sencor DF

<sup>4</sup>Consult label for surface blend rates.

<sup>5</sup>Do not use on soils with less than 1% organic matter. Increased injury risk on soils where triazine carryover exists.

No-Till, Early Preplant, Ecofarming and Ridge Planting

Ridge Planting.....15

Ecofarming (Ecofallow) Index

No-Till Index

|                    |    |
|--------------------|----|
| CORN.....          | 9  |
| GRAIN SORGHUM..... | 10 |
| SOYBEANS.....      | 10 |
| WHEAT.....         | 11 |

After wheat harvest or Preplant or spring

|  |           |
|--|-----------|
| CORN.....                                | 12.....13 |
| GRAIN SORGHUM.....                       | 12.....14 |
| PROSO MILLET.....                        | 12.....13 |
| WHEAT-Ecofallow-WHEAT.....               | 11.....12 |
| FALLOW-Wheat-Ecofallow-Corn/Sorghum..... | 14        |
| SOYBEANS.....                            | 13.....13 |

No-Till Including Early Preplant

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 non-selective 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.

| Herbicide  | Commercial product per Acre |                     |                         | Application Time  | Remarks and Approximate Cost/A Broadcast  |
|--|-----------------------------|---------------------|-------------------------|---|---|
|  | Sandy Loam <1½% OM          | Silt Loam 1½-2½% OM | Silty-Clay Loam >2½% OM |   |   |
| <b>Corn, No-Till in Cool-Season Grass Sod<sup>11</sup></b> |                             |                     |                         |   |   |
| AAtrex/Atrazine 4L <sup>3,13</sup>                         | 2 qt                        | 2.4 qt              | 3 qt                    | Apply in fall or to new growth in May before corn growth          | Weak on warm-season perennial grasses. Cost: \$11.25-\$19.35.   |
| + Gramoxone <sup>12</sup>                                  | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              |   |   |
| <b>Corn, No-Till in Alfalfa Sod<sup>11</sup></b>           |                             |                     |                         |   |   |
| 2,4-D  | 1 qt                        | 1 qt                | 1 qt                    | 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.   |
| + Banvel 4WS   | 0.5 pt                      | 0.5 pt              | 0.5 pt                  |   |   |
| appropriate herbicide at planting                          |                             |                     |                         |   |   |
| <b>Corn, No-Till in Rye or Winter Wheat<sup>11</sup></b>   |                             |                     |                         |   |   |
| AAtrex 4L <sup>3,13,16</sup>                               | 2 qt                        | 2.4 qt              | 3 qt                    | Apply when rye and wheat are more than 4" and before corn emerges | Cost: AAtrex + Gramoxone \$11.25-\$19.35; AAtrex + Bronco \$26.90-\$35.85; Atrazine + Bladex + Gramoxone \$13.55-\$28.10.   |
| + Gramoxone <sup>12</sup>                                  | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              |   |   |
| AAtrex 4L <sup>3,13,16</sup>                               | 1.2 qt                      | 1.4 qt              | 1.6 qt                  |   |   |
| + Bronco   | 3 qt                        | 3.5 qt              | 4 qt                    |   |   |
| Atrazine 4L <sup>3</sup>                                   | 0.5 qt                      | 0.75 qt             | 1-1.25 qt               |   |   |
| + Bladex 4L <sup>17</sup>                                  | 1.25 qt                     | 1.75 qt             | 2.5-2.75 qt             |   |   |
| + Gramoxone <sup>12</sup>                                  | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              |   |   |
| <b>Corn, No-Till Continuous Row Crop<sup>20</sup></b>      |                             |                     |                         |   |   |
| AAtrex/Atrazine 4L <sup>3,13,16</sup>                      | 2 qt                        | 2.4 qt              | 3 qt                    | 0-15 days preplant; for 16-30 days preplant increase 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 <sup>12</sup> to control larger emerged grass. For volunteer corn use Roundup <sup>12</sup> at 0.75-1 pt/A in 5 gpa water before crop emergence. Cost w/o Gramoxone: AAtrex/Atrazine \$4.80-\$7.20; Bicep \$12.95-\$17.30; Dual + Atrazine \$13.00-\$17.80; Bladex + Atrazine \$6.75-\$14.30; Lasso + Atrazine \$15.75-\$19.65; Extrazine/Conquest + Dual \$12.10-\$24.50; Atrazine + Bladex + Dual \$12.50-\$24.40. |
| Bicep 6L <sup>13</sup>                                     | 1.8 qt                      | 2.1 qt              | 2.4 qt                  |   |   |
| AAtrex/Atrazine 4L <sup>3,13,16</sup>                      | 1.4 qt                      | 1.6 qt              | 1.8 qt                  | 0-10 days   |   |
| + Dual 8E  | 1.5 pt                      | 1.75 pt             | 2 pt                    |   |   |
| AAtrex/Atrazine 4L <sup>3,13,16</sup>                      | 1.25 qt                     | 1.5 qt              | 1.75 qt                 | 0-5 days preplant   |   |
| + Bladex 4L <sup>17</sup>                                  | 0.8 qt                      | 1.6 qt              | 2.4 qt                  |   |   |
| AAtrex/Atrazine 4L <sup>3,13,16</sup>                      | 1.5 qt                      | 1.75 qt             | 2 qt                    |   |   |
| + Lasso 4EC  | 2.25 qt                     | 2.5 qt              | 2.75 qt                 |   |   |
| Lasso-Atrazine Flowable Premix <sup>13</sup>               | 3 qt                        | 3.5 qt              | 4 qt                    |   |   |
| Extrazine/Conquest <sup>13,17</sup>                        | 1.5 qt                      | 2.75 qt             | 4.0 qt                  | 0-30 days preplant  |   |
| + Dual   | 0.75 qt                     | 1.0 qt              | 1.0 qt                  |   |   |
| AAtrex 4L <sup>3,13</sup>                                  | 0.5 qt                      | 0.75 qt             | 1.25 qt                 |   |   |
| + Bladex 4L <sup>17</sup>                                  | 1.0 qt                      | 2.0 qt              | 2.75 qt                 |   |   |
| + Dual   | 0.75 qt                     | 0.75 qt             | 1.0 qt                  |   |   |

CONSERVATION TILLAGE SYSTEMS

| Herbicide  | Commercial product per Acre |                     |                         | Application Time             | Remarks and Approximate Cost/A Broadcast  |
|--|-----------------------------|---------------------|-------------------------|------------------------------|---|
|  | Sandy Loam <1½% OM          | Silt Loam 1½-2½% OM | Silty-Clay Loam >2½% OM |                              |   |
| <b>Grain Sorghum, No-Till Continuous Row Crop<sup>20</sup></b> |                             |                     |                         |                              |   |
| AAtrex 4L <sup>3,13,15,16</sup>                                | 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>12</sup> or 54 oz Landmaster 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>12</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. Cost w/o Gramoxone AAtrex \$3.85-\$7.20; Bladex 28 days 9.40-\$14.20; Bladex 35 days \$11.75-\$16.45; Bladex + Atrazine 14 days \$7.10-\$11.80; Bladex + Atrazine 28 days \$9.40-\$14.15; Bladex + Atrazine 15 days \$11.80-\$16.50; Extrazine 14 days \$7.20-\$12.00; Extrazine 28 days \$9.60-\$14.00; Extrazine 35 days \$12.00-\$16.00. |
| Bladex 4L <sup>13,15,17</sup>                                  | 2 qt                        | 2.5 qt              | 3 qt                    | 28 days preplant             |   |
|  | 2.5 qt                      | 3 qt                | 3.5 qt                  | 35 days preplant             |   |
| Bladex 4L <sup>13,15,17</sup>                                  | 1.2 qt*                     | 1.5 qt              | 2 qt                    | 14 days preplant*            |   |
| + Atrazine 4L <sup>3</sup>                                     | 0.6 qt                      | 0.8 qt              | 1 qt                    |                              |   |
|  | 1.6 qt                      | 2 qt                | 2.5 qt                  | 28 days preplant             |   |
|  | 0.8 qt                      | 1 qt                | 1 qt                    |                              |   |
|  | 2 qt                        | 2.5 qt              | 3 qt                    | 35 days preplant             |   |
|  | 1 qt                        | 1 qt                | 1 qt                    |                              |   |
| Extrazine/Conquest <sup>15,17</sup>                            | 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 <sup>15,17</sup>                            | 1.25 qt                     | 1.6 qt              | 2.0 qt                  | 14 days preplant             |   |
| + Dual 8E  | 0.75 qt                     | 0.75 qt             | 0.87 qt                 |                              |   |
|  | 1.6 qt                      | 2.0 qt              | 2.5 qt                  | 28 days preplant             |   |
|  | 1.0 qt                      | 1.0 qt              | 1.0 qt                  |                              |   |
| Dual 8E  | 1.5 pt                      | 1.75 pt             | 2 pt                    |                              |   |
| + AAtrex 4L <sup>3</sup>                                       | 0.5-0.75 qt                 | 1 qt                | 1.5 qt                  | 1-20 days preplant;          |   |
| + Gramoxone <sup>12,13</sup> (if weedy)                        | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              | increase rate                |   |
| Bicep 6L   | 1.8 qt on 1-1.5% OM         | 2.1 qt              | 2.4 qt                  | 20% for 20-30 days preplant  |   |
| + Gramoxone <sup>12,13</sup> (if weedy)                        | 1.5-2.5 qt                  | 1.5-2.5 qt          | 1.5-2.5 qt              |                              |   |
| Lasso 4EC  | 2 qt                        | 2.5 qt              | 3 qt                    |                              |   |
| + AAtrex 4L <sup>3</sup>                                       | 0.5-0.75 qt                 | 1 qt                | 1.5 qt                  | 1-5 days preplant            |   |
| + Gramoxone <sup>12,13</sup> (if weedy)                        | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              |                              |   |
| Igran 80W  | 2 lb                        | 2.25 lb             | 2.5 lb                  | 1-7 days preplant            |   |
| + AAtrex 4L <sup>3,13</sup>                                    | 0.67 qt                     | 1 qt                | 1 qt                    |                              |   |
| <b>Soybeans, No-Till Continuous Row Crops</b>                  |                             |                     |                         |                              |   |
| Gramoxone <sup>12,13,14,15</sup>                               | Do not use                  | 1.5-2.5 pt          | 1.5-2.5 pt              | With Lasso                   | 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.   |
| + Sencor/Lexone 4L <sup>3</sup>                                |                             | 0.7 pt              | 0.8 pt                  | 1-5 days preplant            |   |
| with Lasso 4EC   |                             | 2.5 qt              | 3 qt                    |                              |   |
| or with Dual 8E  | Do not use                  | 2 pt                | 2.5 pt                  | With Dual or Prowl           |   |
| or with Prowl EC   | Do not use                  | 2.5 pt              | 3 pt                    | 10-20 days preplant          |   |
| or with Surflan AS   | 2 pt                        | 2 pt                | 2 pt                    | Surflan 20 days preplant     |   |
| Gramoxone <sup>12,13,14,15</sup>                               | 1.5-2.5 pt                  | 1.5-2.5 pt          | 1.5-2.5 pt              | With Lasso                   |   |
| + Lorox  | 1.25 pt                     | 1.5 pt              | 2 pt                    | 1-5 days preplant            |   |
| with Lasso 4EC   | 2 qt                        | 2.5 qt              | 3 qt                    |                              |   |
| or Dual 8E   | 1.5 pt                      | 2 pt                | 2.5 pt                  | With Dual 1-20 days preplant |   |
| Bronco   | Do not use                  | 4 qt                | 4 qt                    |                              |   |
| + Sencor/Lexone 4L <sup>3</sup>                                |                             | 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                    |                              |   |

\*Apply up to 21 days preplant on sandy loam with less than 1.5% OM.

| Herbicide                                     | Commercial product per Acre |                     |                         | Application Time                                 | Remarks and Approximate Cost/A Broadcast  |
|---|-----------------------------|---------------------|-------------------------|--|---|
|   | Sandy Loam <1½% OM          | Silt Loam 1½-2½% OM | Silty-Clay Loam >2½% OM |  |   |
| <b>Winter Wheat--No-Till 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 Gramoxone <sup>12</sup> /A or 64-86 oz Landmaster <sup>12</sup> /A with Bladex. For broadleaf weeds add 1 qt/A 2,4-D LV ester to Bladex treatment.   |
|   | 1.8 lb                      | 2.7 lb              | 2.7 lb                  | 45 days prior to planting                        |   |
| Roundup <sup>12</sup>                         | 1-2 pt                      | 1-2 pt              | 1-2 pt                  | Postemergence; two or more applications required | If volunteer wheat develops later, treat with Roundup <sup>12</sup> , Gramoxone <sup>12</sup> or Landmaster <sup>12</sup> .<br><b>To facilitate drilling stubble should be no taller than 12" with good straw and chaff distribution.</b> Cost: Bladex 70 days \$11.55-\$17.50; 45 days \$10.15-\$12.25; Roundup \$11.30-\$21.80; Landmaster \$6.25-\$8.50. |
| Landmaster <sup>12</sup>                      | 54-64 oz                    | 54-64 oz            | 54-64 oz                |  |   |

**Ecofarming (Ecofollow)**

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

Winter Wheat Stubble Free of Grass Weeds

|                               |           |             |             |           |  |
|-------------------------------|-----------|-------------|-------------|-----------|--|
| AAtrex 4L <sup>3</sup>        | 1 pt      | 2 pt        | 2 pt        | Jul-Sep 1 | Add 1 qt/A 2,4-D LV ester for broadleaf weed control. If volunteer wheat recovers use sweep plow. Avoid terraced fields, Canyon and Rosebud soils, and caliche out-croppings. Cost: AAtrex \$1.20-\$2.40; Bladex + Atrazine \$9.75-\$12.75; Glean + AAtrex \$6.85-\$10.90. |
| Bladex 90DF                   | 1.8 lb    | 2.2 lb      | 2.2 lb      |           |  |
| +<br>Atrazine 4L <sup>3</sup> | +<br>1 pt | +<br>1.5 pt | +<br>1.5 pt |           |  |
| Glean                         | 0.33 oz   | 0.5 oz      | 0.5 oz      |           |  |
| +<br>AAtrex 4L <sup>3</sup>   | +<br>1 pt | +<br>2 pt   | +<br>2 pt   |           |  |

Winter Wheat Stubble with Grass Weeds

|                                 |                 |                 |                 |           |  |
|---------------------------------|-----------------|-----------------|-----------------|-----------|--|
| AAtrex 4L <sup>3</sup>          | 1 pt            | 2 pt            | 2 pt            | Jul-Sep 1 | Spray before weeds produce seed. If grasses or volunteer wheat recover use sweep plow. Add 1 pt 2,4-D LV ester to AAtrex + Gramoxone and 1 qt 2,4-D LV ester to Igran + AAtrex to improve control of emerged grass and broadleaf weeds. Avoid terraced fields, Canyon and Rosebud soils, and caliche out-croppings. Cost: AAtrex + Gramoxone \$7.65-\$14.55; Igran + AAtrex \$10.55-\$14.15; Bladex + Atrazine + Gramoxone + 2,4-D \$13.00-\$19.20; AAtrex + Gramoxone + Glean \$13.30-\$23.05; AAtrex + Roundup + Glean \$17.10-\$31.40; AAtrex + Landmaster + Glean \$15.00-\$24.40; AAtrex + Landmaster + Ally \$11.80-\$18.40; AAtrex + Gramoxone + Ally \$10.10-\$15.55; AAtrex + Gramoxone + Glean \$12.85-\$21.55; AAtrex + Roundup + Ally \$14.00-\$26.50. |
| +<br>Gramoxone <sup>12,18</sup> | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt |           |  |
| Igran 80W                       | 2-3 lb          | 2-3 lb          | 2-3 lb          |           |  |
| +<br>AAtrex 4L <sup>3</sup>     | +<br>1 pt       | +<br>2 pt       | +<br>2 pt       |           |  |
| Bladex 90DF                     | 1.1 lb          | 1.1 lb          | 1.1 lb          |           |  |
| +<br>Atrazine 4L <sup>3</sup>   | +<br>1 pt       | +<br>1.5 pt     | +<br>1.5 pt     |           |  |
| +<br>Gramoxone <sup>12,18</sup> | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt |           |  |
| +<br>2,4-D LV ester             | +<br>1 pt       | +<br>1 pt       | +<br>1 pt       |           |  |
| AAtrex 4L <sup>3</sup>          | 1 pt            | 2 pt            | 2 pt            |           |  |
| +<br>Gramoxone <sup>12,18</sup> | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt | +<br>1.5-2.5 pt |           |  |
| with<br>Glean                   | 0.33 oz         | 0.5 oz          | 0.5 oz          |           |  |
| or with<br>Ally                 | 0.1 oz          | 0.1 oz          | 0.1 oz          |           |  |
| AAtrex 4L <sup>3</sup>          | 1 pt            | 2 pt            | 2 pt            |           |  |
| +<br>Roundup <sup>12,18</sup>   | +<br>1 pt       | +<br>1 pt       | +<br>1 pt       |           |  |
| or<br>Landmaster <sup>12</sup>  | 54-86 oz        | 54-86 oz        | 54-86 oz        |           |  |
| with<br>Glean                   | 0.33 oz         | 0.5 oz          | 0.5 oz          |           |  |
| or with<br>Ally                 | 0.1 oz          | 0.1 oz          | 0.1 oz          |           |  |

| Herbicide   | Commercial product per Acre                             |   |   | Application Time                                       | Remarks and Approximate Cost/A Broadcast  |
|---|---|---|---|--|---|
|   | Sandy Loam <1½% OM                                      | Silt Loam 1½-2½% OM                                       | Silty-Clay Loam >2½% OM                                 |  |   |
| <b>Winter Wheat Stubble to be Seeded 4-5 Months Later to Winter Wheat</b>                                     |   |   |   |  |   |
| Bladex 90DF<br>+<br>Gramoxone <sup>12,18</sup>  | 2.7 lb<br>+<br>1.5-2.5 pt                               | 2.9 lb<br>+<br>1.5-2.5 pt                                 | 3.1b<br>+<br>1.5-2.5 pt                                 | Mar-Apr 15<br>or before<br>boot stage<br>of weeds      | Do not use on undercut stubble. Controls volunteer wheat, downy brome, jointed goatgrass and broadleaf weeds. Cost: \$15.60-\$24.90.  |
| Roundup <sup>12</sup><br>or<br>Landmaster <sup>12</sup>   | 1 pt<br>or<br>54 oz                                     | 1 pt<br>or<br>54 oz                                       | 1 pt<br>or<br>54 oz                                     | Post in<br>Apr or<br>before<br>boot stage<br>of weeds  | Use Glean only where wheat will be planted in fall. Cost: Roundup \$11.40; Landmaster \$6.25-\$8.50; Roundup + Glean \$13.85-\$16.40; Landmaster + Glean \$8.25-\$11.00.  |
| Roundup <sup>12</sup><br>or<br>Landmaster <sup>12</sup><br>+<br>Glean   | 1 pt<br>or<br>54 oz<br>+<br>0.33 oz                     | 1 pt<br>or<br>54 oz<br>+<br>0.5 oz                        | 1 pt<br>or<br>54 oz<br>+<br>0.5 oz                      | May-Aug for<br>broadleaf<br>weeds                      | Do not plant small grain for 15 days after treatment. Cost: \$5.65.   |
| 2,4-D LV ester<br>+<br>Banvel   | 1 qt<br>+<br>0.5 pt                                     | 1 qt<br>+<br>0.5 pt                                       | 1 qt<br>+<br>0.5 pt                                     | Feb-Aug  | Use only in continuous wheat rotations. Will not control downy brome and volunteer wheat. Cost: \$5.65-\$8.50.  |
| Glean   | 0.33 oz   | 0.5 oz  | 0.5 oz  |  |   |
| <b>Winter Wheat Stubble to be Planted to Corn, Sorghum, or Proso Millet the Next Spring</b>                   |   |   |   |  |   |
| <b>Stubble Free of Grass Weeds</b>  |   |   |   |  |   |
| AAtrex/Atrazine 4L <sup>3</sup>   | 2 qt<br>or<br>1.5 qt                                    | 2.5 qt<br>or<br>2 qt                                      | 3 qt<br>or<br>2.5 qt                                    | Jul-Aug<br>or<br>Sep-Nov<br>for corn<br>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. <b>WARNING</b> --High Atrazine rates may carryover. Cost: \$2.40-\$7.20.  |
| AAtrex/Atrazine 4L <sup>3</sup>   | 1.25 qt<br>or<br>1 qt                                   | 1.5 qt<br>or<br>1.3 qt                                    | 2 qt<br>or<br>1.6 qt                                    | Jul-Aug<br>or<br>Sep-Nov<br>for proso<br>millet        |   |
| <b>Stubble With Grass Weeds</b>   |   |   |   |  |   |
| AAtrex/Atrazine 4L <sup>3</sup><br>+<br>Gramoxone <sup>12,18</sup>  | 2 qt<br>or<br>1.5 qt<br>+<br>1-2 pt                     | 2.5 qt<br>or<br>2 qt<br>+<br>1-2 pt                       | 3 qt<br>or<br>2.5 qt<br>+<br>1-2 pt                     | Jul-Aug<br>or<br>Sep-Nov<br>for corn<br>and sorghum    | 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 + Gramoxone \$10.00-\$19.35; Igran + AAtrex \$12.30-\$18.85; Igran + AAtrex + Gramoxone \$14.10; \$23.00; AAtrex + Roundup \$15.85-\$27.70; AAtrex + Landmaster \$13.60-\$20.30. |
| AAtrex/Atrazine 4L <sup>3</sup><br>+<br>Gramoxone <sup>12,18</sup>  | 1.25 qt<br>+<br>1.5-2.5 pt                              | 1.5 qt<br>+<br>1.5-2.5 pt                                 | 2 qt<br>+<br>1.5-2.5 pt                                 | Jul-Aug<br>for millet                                  |   |
| AAtrex/Atrazine 4L <sup>3</sup><br>or<br>+<br>Igran 80W   | 2 qt<br>or<br>1.5 qt<br>+<br>2-2.5 lb                   | 2.5 qt<br>or<br>2 qt<br>+<br>2-2.5 lb                     | 3 qt<br>or<br>2.5 qt<br>+<br>2-2.5 lb                   | Jul-Aug<br>or<br>Sep-Aug<br>for corn<br>and<br>sorghum | Proso millet--Sep-Nov applications reduce AAtrex/Atrazine rate by 20%.  |
| AAtrex/Atrazine 4L <sup>3</sup><br>or<br>with<br>Igran 80W<br>+<br>Gramoxone <sup>12,18</sup>                 | 2 qt<br>or<br>1.5 qt<br>+<br>1-2 lb<br>+<br>1.5 pt      | 2.5 qt<br>or<br>2 qt<br>+<br>1-2 lb<br>+<br>1.5 pt        | 3 qt<br>or<br>2.5 qt<br>+<br>1-2 lb<br>+<br>1.5 pt      | Jul-Aug<br>or<br>Sep-Nov<br>for corn<br>and<br>sorghum | <b>WARNING</b> --High atrazine rates may carryover and destroy wheat on eroded areas, terraces and calcareous soils.  |
| AAtrex/Atrazine 4L <sup>3</sup><br>or<br>with<br>Roundup <sup>12</sup><br>or with<br>Landmaster <sup>12</sup> | 2 qt<br>or<br>1.5 qt<br>+<br>1.2-2 pt<br>or<br>64-86 oz | 2.5 qt<br>or<br>2.0 qt<br>+<br>1.2-2 pt<br>or<br>64-86 oz | 3 qt<br>or<br>2.5 qt<br>+<br>1.2-2 pt<br>or<br>64-86 oz | Jul-Aug<br>or<br>Sep-Nov<br>for corn<br>and<br>sorghum |   |
| AAtrex/Atrazine 4L <sup>3</sup><br>with<br>Roundup <sup>12</sup><br>or with<br>Landmaster <sup>12</sup>       | 1.25 qt<br>+<br>1-2 pt<br>or<br>64-86 oz                | 1.5 qt<br>+<br>1-2 pt<br>or<br>64-86 oz                   | 2 qt<br>+<br>1-2 pt<br>or<br>64-86 oz                   | Jul-Aug<br>for<br>millet                               |   |

| Herbicide  | Commercial product per Acre |                          |                         | Application Time                       | Remarks and Approximate Cost/A Broadcast   |
|--|-----------------------------|--------------------------|-------------------------|--|--|
|  | Sandy Loam <1½% OM          | Silt Loam 1½-2½% OM      | Silty-Clay Loam >2½% OM |  |  |
| <b>Corn to be Planted in Wheat Stubble Treated with AAtrex/Atrazine After Harvest<sup>19,20</sup></b>  |                             |                          |                         |  |  |
| Bladex 4L <sup>12,13,14,15,17</sup>  | 2 qt                        | 2 qt                     | 2.5 qt                  | 0-30 days preplant                     | Add 1.5-2.5 pts Gramoxone <sup>12,18</sup> or 54 oz Landmaster if emerged weeds are present. Do not use on sands and loamy sands with less than 1% OM. Omit Atrazine in the combination treatment if the maximum Atrazine rate was used previous year. Cost: Bladex \$9.40-\$11.75; Bladex + Atrazine \$7.40-\$10.65; Bladex + Dual \$16.45-\$21.90.   |
| Bladex 4L <sup>12,13,14,15,17</sup> + AAtrex/Atrazine 4L <sup>3,16</sup>   | 1.25 qt + 0.75 qt           | 1.5 qt + 1 qt            | 1.75 qt + 1 qt          | 0-15 days preplant                     |  |
| Bladex 4L <sup>12,13,14,15,17</sup> + Dual 8E  | 1.5 qt + 0.75 qt            | 1.75 qt + 1 qt           | 2 qt + 1 qt             |  |  |
| Dual <sup>13,15</sup><br>(Do not use alone if grasses are present)   | 2 pt                        | 2.5 pt                   | 3 pt                    | 0-20 days preplant                     | 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. Omit AAtrex in the combination treatments if soil pH is above 7.2; use higher Dual and Lasso rates. 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 <sup>12,13,14,15</sup> + AAtrex 4L <sup>3,16</sup>   | 1.5 pt + 0.75 qt            | 2 pt + 1 qt              | 2 pt + 1 qt             |  |  |
| Lasso 4EC <sup>12,13,14,15</sup> + AAtrex 4L <sup>3,16</sup> or Bladex 4L <sup>20</sup>  | 2 qt + 0.75 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 <sup>3</sup>  | 3.5 qt + 0.75 qt            | 4 qt + 1 qt              | 4 qt + 1 qt             |  |  |
| <b>Proso Millet to be Planted in Stubble Treated with Atrazine After Harvest<sup>19,20</sup></b>   |                             |                          |                         |  |  |
| AAtrex 4L <sup>3</sup>   | 0.25 qt                     | 0.5 qt                   | 0.5 qt                  | 0-20 days preplant                     | Add 1.5-2.5 pt Gramoxone <sup>12,18</sup> if emerged weeds are present. Do not use AAtrex if soil pH is above 7.5. Cost: \$.60-\$1.20.   |
| <b>Soybeans to be Planted in Wheat Stubble the Following Spring<sup>20</sup></b><br>(For Areas With Over 20" Rainfall)   |                             |                          |                         |  |  |
| Sencor/Lexone 4L + 2,4-D   | 2 pt + 1 qt                 | 2 pt + 1 qt              | 2 pt + 1 qt             | Jul--spray wheat stubble after harvest | Add 1.5-2.5 pt Gramoxone <sup>12,18</sup> to Sencor/Lexone if weeds are larger than 6". Volunteer wheat may emerge in fall or spring; control with Roundup. Cost w/o Gramoxone: Sencor/Lexone + 2,4-D \$15.00; Landmaster \$8.50-\$13.50.  |
| Landmaster   | 54-86 oz                    | 54-86 oz                 | 54-86 oz                | 2 applications                         |  |
| <b>Soybeans to be Planted into Wheat Stubble Treated With Sencor/Lexone or Landmaster After Harvest<sup>20</sup></b><br>(For Areas With Over 20" Rainfall and Fields With Low Weed Pressure) |                             |                          |                         |  |  |
| Dual 8E + Sencor/Lexone 4L <sup>13,15</sup>  | Do not use                  | 2 pt + 0.75 pt           | 2.15 pt + 0.9 pt        | 1-20 days preplant                     | Add 1.5-2.5 pt Gramoxone <sup>12,18</sup> if there are emerged weeds. Russian thistle, kochia, sunflower, lambsquarters, and velvetleaf may be difficult to control. Follow Sencor/Lexone label for soil type. Substitute Lorox for Sencor/Lexone if there is Atrazine carryover. Check fields within 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 <sup>13,15</sup>  | Do not use                  | 3 pt + 0.75 pt           | 3 pt + 0.9 pt           |  |  |
| Surflan AS + Sencor/Lexone 4L <sup>13,15</sup>   | 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 <sup>13,15</sup>  | Do not use                  | 2.5 qt + 0.75 pt         | 3 qt + 0.9 pt           | 0-5 days preplant                      |  |
| Bronco + Sencor/Lexone <sup>13,15</sup>  | Do not use                  | 4 qt + 0.75 pt           | 4 qt + 0.9 pt           |  |  |

## CONSERVATION TILLAGE SYSTEMS

| Herbicide  | Commercial product per Acre         |                                      |                                    | Application Time             | Remarks and Approximate Cost/A Broadcast   |
|--|-------------------------------------|--------------------------------------|------------------------------------|------------------------------|--|
|  | Sandy Loam <1½% OM                  | Silt Loam 1½-2½% OM                  | Silty-Clay Loam >2½% OM            |                              |  |
| <b>Grain Sorghum to be Planted in Wheat Stubble Treated With AAtrex/Atrazine After Harvest<sup>19,20</sup></b> |                                     |                                      |                                    |                              |  |
| Bladex 4L <sup>12,13,14,15,17</sup>  | 2 qt                                | 2.5 qt                               | 3 qt                               | 28 days preplant             | Add 1.5-2.5 pt Gramoxone <sup>12,18</sup> or 54 oz Landmaster for emerged weeds if Bronco is not used. <b>Seed must be treated with Concep for Dual or Screen for Lasso or Bronco treatments.</b> Omit AAtrex in the combination treatments if soil pH is above 7.2; use higher rate of Dual or Lasso. Do not use Dual alone if grasses are present. Use lower rate of Atrazine west of Highway 83. 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. |
|  | 2.5 qt                              | 3 qt                                 | 3.5 qt                             | 35 days preplant             |  |
| Bladex 4L <sup>12,13,14,15,17</sup><br>+<br>Atrazine 4L <sup>3</sup>   | 1.2 qt*<br>+<br>0.3 qt*             | 1.5 qt<br>+<br>0.4 qt                | 2 qt<br>+<br>0.5 qt                | 14 days preplant             |  |
| Bladex 4L <sup>12,13,14,15,17</sup><br>+<br>Atrazine 4L <sup>3</sup>   | 1.6 qt<br>+<br>0.4 qt               | 2 qt<br>+<br>0.5 qt                  | 2.5 qt<br>+<br>0.5 qt              | 28 days preplant             |  |
| Bladex 4L <sup>12,13,14,15,17</sup><br>+<br>Atrazine 4L <sup>3</sup>   | 2 qt<br>+<br>0.5 qt                 | 2.5 qt<br>+<br>0.5 qt                | 3 qt<br>+<br>0.5 qt                | 35 days preplant             |  |
| Bladex 4L <sup>12,13,14,15,17</sup><br>+<br>Dual 8E  | 1.25 qt<br>+<br>1.5 pt              | 1.6 qt<br>+<br>1.5 pt                | 2 qt<br>+<br>1.75 pt               | 14 days preplant             |  |
| Bladex 4L <sup>12,13,14,15,17</sup><br>+<br>Dual 8E  | 1.6 qt<br>+<br>2 pt                 | 2 qt<br>+<br>2 pt                    | 2.5 qt<br>+<br>2 pt                | 28 days preplant             |  |
| Dual 8E <sup>13,15</sup>   | 2.0 pt                              | 2.25 pt                              | 2.5 pt                             |                              |  |
| Dual 8E <sup>12,13,14,15</sup><br>+<br>AAtrex 4L <sup>3</sup>  | 1.5 pt<br>+<br>0.5 qt               | 2 pt<br>+<br>1 qt                    | 2 pt<br>+<br>1 qt                  | 0-20 days preplant           |  |
| Lasso 4EC <sup>12,13,14,15</sup><br>+<br>AAtrex 4L <sup>3</sup><br>or<br>Bladex 4L <sup>20</sup>               | 2 qt<br>+<br>0.5 qt<br>or<br>1.5 qt | 2.5 qt<br>+<br>1 qt<br>or<br>1.75 qt | 2.5 qt<br>+<br>1 qt<br>or<br>2 qt  | 0-5 days preplant            |  |
| Bronco   | 3.5 qt                              | 4 qt                                 | 4 qt                               |                              |  |
| Bronco<br>+<br>AAtrex 4L <sup>3</sup>  | 3.5 qt<br>+<br>0.5 qt               | 4 qt<br>+<br>1 qt                    | 4 qt<br>+<br>1 qt                  |                              |  |
| Igran 80W <sup>12,13,14,15</sup>   | 2 lb                                | 2.25 lb                              | 2.5 lb                             |                              |  |
| Igran 80W <sup>12,13,14,15</sup><br>+<br>AAtrex 80W<br>(Primarily for broadleaf weeds)                         | 1.5 lb<br>+<br>0.5 lb               | 2 lb<br>+<br>0.75 lb                 | 2 lb<br>+<br>1 lb                  | 1-7 days preplant            | Use on loam or finer textured soils. Do not use on soils with less than 1% OM and pH greater than 7.4. Don't use Igran + AAtrex if maximum AAtrex rate was used previous year. Cost: Igran \$9.30-\$11.70; Igran + AAtrex \$11.25.   |
| <b>Winter Wheat to be Planted in Less Than Six Months in Wheat-Corn/Sorghum-Fallow Rotation</b>                |                                     |                                      |                                    |                              |  |
| Bladex 4L<br>+<br>2,4-D LV ester   | 3 qt<br>+<br>1.5 pt                 | 3 qt<br>+<br>1.5 pt                  | 3.5 qt<br>+<br>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 15 days after using 2,4-D and Banvel.  |
| Bladex 4L<br>+<br>Gramoxone <sup>12,18</sup>   | 2.5 qt<br>+<br>1.5-2.5 pt           | 2.5 qt<br>+<br>1.5-2.5 pt            | 3 qt<br>+<br>1.5-2.5 pt            | Apr 15-May 1                 |  |
| Roundup <sup>12</sup><br>or<br>Landmaster<br>+<br>Glean  | 1 pt<br>or<br>54 oz<br>+<br>0.33 oz | 1 pt<br>or<br>54 oz<br>+<br>0.5 oz   | 1 pt<br>or<br>54 oz<br>+<br>0.5 oz | Apr 15-May 1                 | Follow-up weed control may be necessary. Cost: Bladex + 2,4-D \$16.00-\$18.35; Bladex + Gramoxone \$20.25-\$22.60; Landmaster + Glean \$14.25-\$17.00; Roundup + Glean \$16.00-\$18.75; Landmaster \$6.26-\$8.40; 2,4-D + Banvel \$5.65.   |
| Landmaster <sup>12</sup>   | 40-54 oz                            | 40-54 oz                             | 40-54 oz                           | Apr 15-May 1                 |  |
| 2,4-D LV ester<br>+<br>Banvel 4WS  | 1 qt<br>+<br>0.5 pt                 | 1 qt<br>+<br>0.5 pt                  | 1 qt<br>+<br>0.5 pt                | Broadleaf weeds less than 4" |  |

\*21 days or more preplant when used on sandy soil.

Ridge Planting

With the ridge plant system the row has fewer weeds because the weed seed produced the preceeding year is not worked into the soil when the seedbed is prepared. During planting, sweeps or disks 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.

Footnotes

- <sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:  
 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 pt Sencor or Lexone 4L = 1 lb 50W = 0.67 lb Lexone DF = Sencor DF
- <sup>11</sup>Irrigated conditions or eastern Nebraska.
- <sup>12</sup>Add X-77 spreader 2 pt per 100 gal spray solution for Gramoxone, 4 pt per 100 gal if Gramoxone is used at 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>13</sup>Soil disturbance by planter may allow weed growth in row if herbicide is applied preplant.
- <sup>14</sup>If seedling (3-leaf) grass or volunteer wheat are present at planting, add 1.5-2.5 pt Gramoxone + X-77 to mixtures or prepare a shallow seedbed with tillage. Gramoxone may not kill grasses more than 4" tall. Crop oil at 1 gpa may be substituted for Gramoxone but control is not as good on large weeds. If weeds are beyond the seedling stage and growing vigorously, apply Roundup<sup>12</sup> at 1 pt/A one week before planting or immediately after planting but before crop emergence. Do not mix Roundup with other herbicides. Kill volunteer wheat and annual bromes in April to prevent soil moisture loss.
- <sup>15</sup>If Russian thistle or kochia is present and not triazine resistant (if resistant see 20) 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>16</sup>AAtrex/Atrazine carryover may occur on eroded areas, on soils with less than 1.2% OM, and/or soils with more than 7.0 pH. Total AAtrex/Atrazine applied last year after wheat harvest plus this treatment should not exceed 3.75 lb 80W or 3 qt 4L.
- <sup>17</sup>Fertilizer solutions containing only nitrogen may have advantages over water as a carrier. For Bladex treatments without Gramoxone or nitrogen solution, add crop oil at recommended rate. Use a minimum of 25 gal carrier. Complete spray coverage of weeds is essential and Bladex 4L has better burn-down than Bladex 80W or 90DF.
- <sup>18</sup>Increase Gramoxone rate, gallonage and pressure (minimum of 30 lb pressure at nozzle) on heavy infestations of grass or Russian thistle where it is difficult to penetrate the foliage.
- <sup>19</sup>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 + X-77 if grass weeds and/or volunteer wheat are present at spraying.  
 Increase Gramoxone rate after April 15 to 1.5 to 2 pt depending upon size of weeds.  
 Rates suggested depending on soil type, pH, OM, and time of application--  
 For corn 1.5 to 2.5 qt AAtrex/Atrazine  
 For grain sorghum 1.25 to 2.25 qt AAtrex/Atrazine  
 For proso millet 0.75 to 1 qt AAtrex
- <sup>20</sup>If triazine resistant broadleaf weeds are present add 1/2 pt Banvel to treatment 7 or more days preplant to corn and 15 or more days preplant to sorghum. Post application of herbicides to control later emerging triazine resistant weeds will probably be necessary. Do not plant soybeans where triazine resistant weeds may be a problem.



**WEED RESPONSE TO POSTEMERGENCE HERBICIDES**

See pages 29-35 for additional problem weeds and their control.

Response ratings:

Ratings are for annual weeds less than 4" tall, moderate populations, and favorable conditions. High populations or adverse conditions may reduce control.

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

|  | alfalfa | annual morningglory | barnyardgrass | buffalobur | cocklebur | crabgrass | fall panicum | foxtail | jimsonweed | kochia** | lambsquarters | nightshade | pigweed | ragweed | R. thistle | sandbur | shattercane/vol. corn | smartweed | sunflower | velvetleaf | w. buckwheat | crop safety <sup>1</sup> | soil carryover potential in months <sup>2</sup> |  |
|--|---------|---------------------|---------------|------------|-----------|-----------|--------------|---------|------------|----------|---------------|------------|---------|---------|------------|---------|-----------------------|-----------|-----------|------------|--------------|--------------------------|---|--|
| <b>Corn</b>                                  |         |                     |               |            |           |           |              |         |            |          |               |            |         |         |            |         |                       |           |           |            |              |                          |   |  |
| AAtrex/Atrazine + crop oil                   | F       | E                   | F             | G          | E         | F         | P            | G       | E          | E        | E             | E          | E       | E       | F          | F       | P                     | E         | E         | E          | E            | G                        | 6-18  |  |
| Banvel                                       | E       | E                   | P             | F          | E         | P         | P            | P       | F          | E        | G             | G          | E       | E       | F          | F       | P                     | E         | E         | E          | E            | E                        | 1-2   |  |
| Basagran + Atrazine                          | P       | G                   | F             | F          | E         | P         | P            | P       | E          | E        | E             | E          | E       | E       | P          | P       | P                     | E         | E         | E          | E            | E                        | 2-6   |  |
| Bladex                                       | F       | G                   | F             | G          | G         | G         | F            | G       | E          | E        | E             | E          | E       | E       | F          | F       | P                     | E         | E         | E          | E            | E                        | 2   |  |
| Buctril/Torch 4E                             | P       | E                   | P             | E          | E         | P         | P            | P       | E          | E        | G             | E          | E       | E       | G          | P       | P                     | E         | E         | E          | E            | E                        | 0   |  |
| Extrazine or Conquest                        | F       | G                   | F             | G          | E         | G         | F            | G       | E          | E        | E             | E          | E       | E       | F          | F       | P                     | E         | E         | E          | E            | E                        | 6-12  |  |
| Marksman                                     | G       | E                   | P             | G          | E         | P         | P            | P       | G          | E        | E             | E          | E       | E       | G          | F       | P                     | E         | E         | E          | E            | E                        | 2-6   |  |
| Tandem + Atrazine + COC                      | F       | E                   | G             | G          | E         | F         | F            | G       | E          | E        | E             | E          | E       | E       | F          | G       | P                     | F         | E         | E          | E            | E                        | 6-18  |  |
| 2,4-D  | F       | E                   | P             | P          | E         | P         | P            | P       | G          | E        | E             | E          | E       | E       | G          | P       | P                     | F         | E         | E          | E            | E                        | 1   |  |
| 2,4-D + Banvel                               | G       | E                   | P             | F          | E         | P         | P            | P       | F          | G        | G             | E          | G       | G       | E          | P       | P                     | E         | G         | G          | E            | E                        | 1-2   |  |
| <b>Sorghum</b>                               |         |                     |               |            |           |           |              |         |            |          |               |            |         |         |            |         |                       |           |           |            |              |                          |   |  |
| AAtrex/Atrazine + crop oil                   | F       | E                   | P             | G          | E         | F         | P            | F       | E          | E        | E             | E          | E       | E       | F          | P       | P                     | E         | E         | E          | E            | F                        | 6-18  |  |
| Banvel                                       | E       | E                   | P             | F          | E         | P         | P            | P       | F          | E        | G             | G          | E       | E       | F          | P       | P                     | E         | E         | E          | E            | F                        | 1-2   |  |
| Basagran + Atrazine                          | P       | G                   | F             | F          | E         | P         | P            | P       | E          | E        | G             | G          | E       | E       | P          | P       | P                     | E         | E         | E          | E            | E                        | 2-6   |  |
| Roundup-ropewicks, wipers, etc. <sup>6</sup> | -       | -                   | -             | -          | G         | -         | -            | -       | G          | F        | F             | G          | G       | E       | F          | -       | -                     | -         | -         | -          | -            | -                        | 0   |  |
| Torch/Buctril                                | F       | E                   | P             | E          | E         | P         | P            | P       | E          | G        | G             | E          | E       | E       | G          | P       | P                     | E         | E         | E          | E            | E                        | 0   |  |
| 2,4-D  | F       | E                   | P             | P          | E         | P         | P            | P       | G          | G        | G             | F          | G       | G       | E          | P       | P                     | P         | G         | F          | P            | F                        | 1   |  |
| <b>Soybeans</b>                              |         |                     |               |            |           |           |              |         |            |          |               |            |         |         |            |         |                       |           |           |            |              |                          |   |  |
| Basagran + Blazer/Tackle                     | P       | G                   | P             | F          | E         | P         | P            | P       | E          | P        | F             | G          | G       | E       | P          | P       | P                     | E         | E         | G          | G            | E                        | 0   |  |
| Basagran + Scepter                           | P       | F                   | P             | P          | E         | P         | P            | P       | E          | P        | P             | P          | P       | E       | P          | P       | P                     | E         | E         | E          | E            | E                        | 2-6   |  |
| Basagran w/n Fertilizer                      | P       | F                   | P             | P          | E         | P         | P            | P       | E          | P        | P             | P          | P       | E       | P          | P       | P                     | E         | E         | E          | E            | E                        | 0   |  |
| Blazer/Tackle                                | P       | E                   | P             | G          | F         | F         | G            | F       | E          | F        | F             | G          | E       | E       | P          | F       | F                     | E         | P         | F          | -            | G                        | 0   |  |
| Classic                                      | P       | G                   | P             | -          | E         | P         | P            | P       | E          | -        | F             | -          | E       | E       | -          | P       | P                     | E         | E         | -          | -            | E                        | 6-12  |  |
| Fusilade                                     | P       | P                   | E             | P          | P         | E         | E            | G       | P          | P        | P             | P          | P       | P       | P          | E       | E                     | E         | P         | P          | P            | P                        | 1   |  |
| Poast  | P       | P                   | E             | P          | P         | E         | E            | E       | G          | P        | P             | P          | P       | P       | P          | E       | E                     | E         | P         | P          | P            | P                        | 0   |  |
| Poast + Basagran                             | P       | F                   | E             | P          | E         | G         | E            | E       | E          | P        | P             | P          | P       | P       | E          | E       | F                     | G         | E         | G          | E            | E                        | 0   |  |
| Rescue                                       | P       | P                   | P             | P          | G         | P         | P            | P       | E          | P        | P             | P          | P       | P       | E          | E       | E                     | G         | E         | E          | E            | E                        | 0   |  |
| Roundup-ropewicks, wipers, etc. <sup>6</sup> | -       | -                   | -             | -          | G         | -         | -            | -       | G          | F        | G             | -          | G       | G       | F          | F       | E                     | G         | F         | F          | -            | E                        | 0   |  |

**Small Grain**

Response ratings:

Weeds less than 4" tall except less than 2" for Torch/Buctril treatments.

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

|   | blue mustard | erect knotweed | field pennycress | horsetweed | 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>2</sup> |
|---|--------------|----------------|------------------|------------|--------|---------------|--------------|-------------------|-----------------|------------|----------------|-----------|---------------|------------|----------------|-----------------|------------|---|
| Ally  | E            | F              | E                | -          | F      | G             | F            | E                 | E               | E          | G              | E         | F             | F          | -              | F               | F          | 1-22                                    |
| Ally + 2,4-D                                | E            | F              | E                | -          | F      | G             | F            | E                 | E               | E          | E              | E         | G             | F          | -              | F               | F          | 1-22                                    |
| Glean (Postemergence)                       | E            | F              | E                | -          | F      | G             | F            | E                 | E               | E          | E              | E         | F             | F          | -              | F               | F          | 6-48                                    |
| Glean + 2,4-D (Postemergence)               | E            | F              | E                | -          | F      | G             | F            | E                 | E               | E          | E              | E         | F             | F          | -              | F               | F          | 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      | F             | G            | F                 | F               | F          | F              | G         | F             | G          | G              | P               | F          | 1                                       |
| MCPA + Bromoxynil (Brominal 3+3 or Bronate) | F            | E              | E                | F          | F      | F             | E            | F                 | E               | G          | G              | E         | E             | G          | E              | -               | G          | 1                                       |
| Torch/Buctril (Bromoxynil)                  | G            | E              | E                | G          | F      | G             | G            | F                 | G               | G          | E              | E         | E             | G          | E              | E               | F          | 1                                       |
| 2,4-D                                       | E            | F              | E                | F          | G      | E             | G            | E                 | E               | E          | E              | E         | E             | E          | E              | P               | E          | 1                                       |
| 2,4-D + Banvel                              | F            | G              | E                | F          | E      | E             | E            | E                 | E               | E          | E              | E         | E             | E          | E              | E               | E          | 1-2                                     |
| 2,4-D + Torch/Buctril                       | E            | E              | E                | F          | G      | E             | E            | E                 | E               | E          | E              | E         | E             | E          | E              | E               | G          | 1                                       |

<sup>1</sup>Crop varieties vary in their response to herbicides.

<sup>2</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.

<sup>6</sup>Ratings for weeds likely to be enough taller than crop for selective treatment.

\*Good control of hairy nightshade.

\*\*Not triazine resistant.

# FIELD CROPS—POSTEMERGENCE AND LAYBY TREATMENTS

17

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.

| Crop                      | Herbicide   | Rate Per Acre <sup>7</sup>                    | Application Time  | Remarks and Approximate Cost/A Broadcast  |  |
|---------------------------|---|---|---|---|--|
| BARLEY AND SPRING WHEAT   | 2,4-D amine   | 1-1.5 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 Torch/Buctril as listed for winter wheat. Cost: 2,4-D \$.65-\$1.50; Glean \$2.85; Ally + 2,4-D \$3.00.   |  |
|                           | or  | or  |   |   |  |
|                           | 2,4-D LV ester                                      | 0.5-1 pt                                      |   |   |  |
|                           | Glean   | 0.17 oz                                       | Broadleaf weeds less than 2"  |   |  |
|                           | Ally + 2,4-D LV ester                               | 0.10 oz + 4 oz                                | Before May 1  |   |  |
| CORN (Field and popcorn*) | *Aatrex/Atrazine 4L <sup>3</sup>                    | 2 qt  | Broadleaf weeds 2-6"; grass weeds 1" or less; also at layby with Atrazine | Use Atrazine with water-crop oil mixture. Lower Atrazine rates control broadleaf weeds. Make layby applications when corn is 20-30" tall and weeds less than 1 1/2" tall. Cost: \$4.80-\$17.30.   |  |
|                           | or  | or  |   |   |  |
|                           | Bicep 6L  | 2.4 qt  |   |   |  |
|                           | *Basagran + Atrazine                                | 0.5 qt + 0.5 qt                               | Broadleaf weeds 2-4" high   | Use with crop oil concentrate, 20 gal water and 40 psi. Increase rate 50% on weeds 3-8" tall. Cost: \$9.45.   |  |
|                           | Bladex 80W  | 2.5 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 Torch 4E alone or with Atrazine     | 1-1.5 pt or 0.5-0.75 pt or 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 Atrazine \$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 brittleness and stalk breakage. Use lower rate when good growing conditions exist to reduce corn injury. <b>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.</b> Cost: 2,4-D \$.65-\$2.00; 2,4-D + Banvel \$2.10; Banvel \$3.15. |  |
|                           | 2,4-D amine or ester + Banvel                       | 0.5-1 pt or 0.25-0.5 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 containing more than 2 1/2% organic matter. 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: \$5.00-\$8.00.   |  |
|                           | 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 or 1.5-2.4 pt                        | Layby before corn is 40" tall   | Apply after furrowing or final cultivation. Weeds less than 1 1/2" tall may be controlled with Bicep. Cost: Dual \$9.40-\$18.75; Bicep \$10.80-\$17.30.   |  |
|                           | Treflan MTF alone or with Atrazine 4L (Chemigation) | 1.5-2 pt or 1-1.5 qt                          | Corn 2-leaf through 30", weeds un-emerged                                 | Apply in 1/2-1" sprinkler irrigation water. Cost: Treflan \$3.75-\$5.00; Treflan + Atrazine \$6.15-\$8.60.  |  |
|                           | Prowl 4EC alone or with Atrazine 4L <sup>3</sup>    | 0.75-1.5 qt or 1-1.2 qt                       | Corn 4-11" 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 \$5.75-\$9.65.   |  |
|                           | OATS (Not underseeded with legume)                  | MCPA  | 0.5-1 pt  | Weeds and oats in 3-4 leaf stage  | Thorough coverage required with Torch and Buctril. Cost: MCPA \$.75-\$1.50; Torch/Buctril + 2,4-D \$6.15-\$9.00. |
|                           |   | Torch 4E or Buctril 2EC + 2,4-D amine or MCPA | 0.5-0.75 pt or 1-1.5 pt + 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.   |

(Continued next page)

| Crop   | Herbicide  | Rate Per Acre <sup>7</sup>                  | Application Time   | Remarks and Approximate Cost/A Broadcast  |  |
|--|--|---|--|---|--|
| PROSO MILLET                                   | 2,4-D amine  | 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.   |  |
|  | +<br>Banvel 4WS                                      | +<br>0.25 pt                                |  |   |  |
| SORGHUM<br>(Grain or forage)                   | AAtrex/<br>Atrazine 4L <sup>3</sup>                  | 1.2 qt                                      | Broadleaf weeds less than 6"   | Use with water + crop oil. Read product label. May give partial control of grass weeds under 1". Do not use on sand or loamy sand. Cost: Atrazine \$3.40; Basagran + Atrazine \$9.45.   |  |
|  | Basagran 4WS   | 0.5 qt                                      |  |   |  |
|  | +<br>Atrazine 4L <sup>3</sup>                        | +<br>0.5 qt                                 | Sorghum 3-5 leaves   | Observe label precautions when sensitive crops are nearby. Cost: \$3.15.  |  |
|  | Banvel   | 0.5 pt                                      |  |   |  |
|  | 2,4-D amine  | 1 pt  | After sorghum is 5" tall. If over 10" use drop nozzles   | Spraying before 5" stage may inhibit root development. Spraying without drop nozzle 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; Torch/Buctril alone \$5.25-\$7.90; with Atrazine \$6.75-\$9.10.   |  |
|  | or<br>2,4-D LV ester                                 | or<br>0.5 pt                                |  |   |  |
|  | Torch 4E   | 0.5-0.75 pt                                 | Broadleaf weeds 2-6"; sorghum up to 14"  |   |  |
| or<br>Buctril 2EC<br>alone or with<br>Atrazine | or<br>1-1.5 pt<br>1 pt                               |   |  |   |  |
| SOYBEANS                                       | Basagran 4WS   | 1 pt  | Most susceptible 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 Conc. \$18.45. |  |
|  | +<br>28% UAN   | +<br>1 gal                                  |  |   |  |
|  | Blazer/Tackle  | 1-2 pt                                      |  |   |  |
|  | +<br>Surfactant                                      | +<br>3-6 oz                                 |  |   |  |
|  | Blazer/Tackle  | 0.5-1 pt                                    |  |   |  |
|  | +<br>Basagran 4WS                                    | +<br>1 pt                                   |  |   |  |
|  | +<br>28% UAN   | +<br>1 gal                                  |  |   |  |
|  | Basagran 4WS   | 1.5-2 pt                                    |  |   |  |
|  | +<br>Poast   | +<br>1.5 pt                                 |  |   |  |
|  | Basagran   | 1.5 pt                                      |  |   |  |
|  | +<br>Scepter 1.5L                                    | +<br>0.33 pt                                |  |   |  |
|  | +<br>Crop Oil Conc.                                  | +<br>1 qt                                   |  |   |  |
|  | Classic  | 0.5-0.75 oz                                 |  |   |  |
|  | +<br>Surfactant                                      | +<br>6 oz                                   |  |   |  |
| Fusilade 2000                                  | 1-1.5 pt   |   |  |   |  |
| Poast  | 1 pt   |   |  |   |  |
| Rescue<br>(Alanap +<br>2,4-DB)                 | 4 qt   | Weeds under 30"; soybeans after first bloom | Effective primarily on large sunflower, cocklebur and giant ragweed. Add surfactant 1/2% v/v. Cost: \$13.70. |   |  |
| WINTER WHEAT                                   | 2,4-D amine  | 1-1.5 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. Refer to page 21 for blue mustard control. Cost: \$.65-\$1.50.   |  |
|  | or<br>2,4-D LV ester                                 | or<br>0.5-1 pt                              |  |   |  |
|  | Bronate 4EC  | 1-1.5 pt                                    | Wheat well tillered  | Thorough coverage required. Most broadleaf weeds should be in 2-4 leaf stage or mustards in early rosette stage. Cost: \$6.15-\$9.00.   |  |
|  | or<br>Brominal 3+3                                   | or<br>0.7 + 1 pt                            |  |   |  |
|  | Torch 4E   | 0.5-0.75 pt                                 |  |   |  |
|  | or<br>Buctril 2EC                                    | or<br>1-1.5 pt                              |  |   |  |
|  | (All treatments except 2,4-D control wild buckwheat) | +<br>2,4-D amine                            | +<br>0.5 pt  | Before wheat joints   | Controls most troublesome broadleaf weeds. Cost: \$2.35. |
|  | +<br>Banvel  | +<br>4 oz                                   |  |   |  |
|  | +<br>2,4-D amine                                     | +<br>0.75-1 pt                              | Fall after wheat is in 2-3 leaf stage and broadleaf weeds under 2"; before Apr 1 in spring                   | 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. Add 4 oz 2,4-D ester if weeds are larger than 2". Cost: Glean \$2.85-\$7.50; Ally + 2,4-D \$3.00.   |  |
|  | +<br>Glean   | +<br>0.17-0.5 oz                            |  |   |  |
|  | Ally + 2,4-D<br>LV ester                             | 0.10 oz + 4 oz                              | Spring only  |   |  |

(Continued from page 18)

## ADDITIONAL REGISTERED POSTEMERGENCE TREATMENTS:

Barley-Oats: 2,4-D + Banvel.  
 Corn: Banvel + Atrazine, Basagran, Evik directed, Lorox directed, Torch/Buctril + 2,4-D or Banvel or Bladex.  
 Sorghum: Basagran.  
 Soybeans: Butoxone/Butyrac, Lorox directed, Lorox + Butyrac directed, Poast + Basagran + Blazer.  
 Winter Wheat: Banvel, MCPA, Tordon 22K + 2,4-D, Glean with 2,4-D or Banvel or Karmex.

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:  
 1 qt AATrex or Atrazine 4L = 1.25 lb AATrex or Atrazine 80W = 1.1 lb AATrex Nine-O

1 pt Sencor L or Lexone 4L = 1 lb 50W = 0.67 lb Lexone DF or Sencor DF

<sup>7</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.

\*Registered for popcorn.

## FIELD CROPS—DESICCANTS, RESCUE AND HARVEST AID TREATMENTS

| Crop                          | Herbicide                    | Rate Per Acre <sup>7</sup>   | Application Time                                 | Remarks and Approximate Cost/A Broadcast   |
|-------------------------------|------------------------------|------------------------------|--|--|
| ALFALFA (for seed)            | Diquat                       | 1.5-2 pt                     | 3-10 days prior to seed harvest                  | Desiccant. Do not graze or feed treated forage. Cost: \$11.85-\$15.80.   |
| CORN                          | 2,4-D LV ester               | 1 qt                         | After silks brown                                | Rescue operation for late 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 and pollination is complete. Cost: \$2.50. |
| OATS AND BARLEY               | 2,4-D LV ester               | 1 qt                         | After hard dough 7 or more days prior to harvest | Rescue operation for control of sunflower, bindweed and pigweed. Only certain brands labeled for this use. Cost: \$2.50.   |
| POTATOES                      | Diquat                       | 1 pt                         | 7 or more days before harvest                    | Desiccant. Follow label on water volume and surfactant use. May require second application 5 days later. Cost: \$7.90.   |
|                               | Gramoxone                    | 1.5-2.5 pt                   | 3 or more days before harvest                    | Desiccant. Do not use on seed potatoes nor potatoes to be stored. Add drift retardant to reduce injury to nearby crops. Follow label on water volume and surfactant use. Cost: \$6.50-\$12.20.   |
| SORGHUM (Grain)               | 2,4-D LV ester               | 1 qt                         | After soft dough                                 | Rescue operation for late control of sunflower, cocklebur, velvetleaf and pigweed. Only certain brands labeled for this use. Grain quality not affected if milo is in soft dough or later stage of growth. Cost: \$2.50.                             |
|                               | Chlorate 3<br>or<br>Leafex 3 | 1.5-2 gal<br>or<br>1.5-2 gal | 7-10 days before harvest                         | Desiccant. Products are sodium chlorate with fire retardant. Use in enough water to give good coverage. Do not graze or feed forage for 14 days. Cost: \$4.80-\$6.40.  |
| SOYBEANS                      | Gramoxone                    | 1.25 pt                      | 65% brown pods                                   | Desiccant. Add drift retardant to reduce injury to nearby crops. Follow label directions on water volume and X-77 additive. Do not graze for 15 days. Cost: \$6.50.  |
| WINTER WHEAT AND SPRING WHEAT | 2,4-D LV ester               | 1 qt                         | Hard dough stage 7 or more days before harvest   | Rescue operation for late weeds such as sunflower, kochia, pigweed and lambsquarters. To reduce breakage all green color should be gone from wheat joints. Only certain brands labeled for this use. Cost: \$2.50.                                   |

<sup>7</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.

WEED RESPONSE TO HERBICIDES IN SELECTED CROPS

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 | sandbur | shattercane/sorghum | smartweed | sunflower | velvetleaf | W. buckwheat | crop safety <sup>1</sup> | soil carryover potential in months <sup>2</sup> |
|---------------------|---------------|-----------|-----------|--------------|---------|------------|--------|---------------|------------|---------|---------|------------|---------|---------------------|-----------|-----------|------------|--------------|--------------------------|---|
|---------------------|---------------|-----------|-----------|--------------|---------|------------|--------|---------------|------------|---------|---------|------------|---------|---------------------|-----------|-----------|------------|--------------|--------------------------|---|

Potatoes

|                                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |      |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|------|
| Eptam/Genep-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 | F | G | P | F | E | E | P | P | P | F | E   | 6-12 |
| Sencor/Lexone-pre                  | P | G | F | G | G | G | G | F | F | E | E | G | P | P | G | F | G | E | G | 2-6 |      |
| Sencor/Lexone + Dual-pre           | P | E | F | F | E | E | G | F | E | G | E | G | F | P | G | F | G | E | F | 2-6 |      |
| Sencor/Lexone-post                 | P | P | G | F | P | F | P | G | E | P | E | G | E | F | P | G | F | P | 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 | P | 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 | E | E  | P | F | E | 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 | 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  |
| Betanex-post                      | F | P | - | P | P | P | P | F | G | F | G | F | P | P | P | F | F | P | F | G | <1  |
| Herbicide 273-post                | P | F | - | P | P | F | P | F | F | F | F | P | P | P | P | G | G | P | G | G | <1  |
| 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 | P | P | G | G | 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 | G | F | F | F | F | F | G | G | G | G | 4-6 |      |

<sup>1</sup>Crop varieties vary in their response to herbicides.

<sup>2</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

| 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>Potatoes</b>  |                               |                                   |                                   |  |
| 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; under stress injury will occur. 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 <sup>3</sup>  | 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 <sup>3</sup>  | 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 <sup>3</sup> 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), Telone (PPI), 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 \$16.20.  |
| OTHER REGISTERED TREATMENTS FOR FIELDBEANS: Amiben (PRE), Dacthal (PRE), Furloe (PRE), Treflan (PPI). |                                 |                                 |  |  |

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient: 1 pt Sencor L or Lexone 4L = 1 lb 50W = 0.67 lb Lexone DF or Sencor DF.

## SUGAR BEET HERBICIDES

| Herbicide | Commercial Product per Acre |                 |         |                     |                 |  | Application Time, Remarks and<br>Approximate Cost/A Broadcast |
|-----------|-----------------------------|-----------------|---------|---------------------|-----------------|--|---|
|           | Sandy Loam <1 % OM          |                 |         | Silt Loam 1 -2 % OM |                 |  |   |
|           | Broad-<br>cast              | Product/7" Band |         | Broad-<br>cast      | Product/7" Band |  |   |
|           | 22" Row                     | 30" Row         | 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 4FL<br>+<br>ANTOR 4ES   | 2.5 qt<br>+<br>1 qt   | 25 oz<br>+<br>10 oz    | 18 oz<br>+<br>7 oz | 4 qt<br>+<br>1.5 qt   | 40 oz<br>+<br>15 oz | 29 oz<br>+<br>11 oz    |   |
| RO-NEET 6E<br>or<br>RO-NEET 10G | 2.5 pt<br>or<br>18 lb | 12 oz<br>or<br>5.75 lb | 9 oz<br>or<br>4 lb | 3.3 pt<br>or<br>25 lb | 17 oz<br>or<br>8 lb | 12 oz<br>or<br>5.75 lb | PPI...Immediately mix into dry soil 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. |

## Layby

|                                   |                        |                       |                      |                       |                       |                     |  |
|-----------------------------------|------------------------|-----------------------|----------------------|-----------------------|-----------------------|---------------------|--|
| EPTAM 7E/GENEP<br>or<br>EPTAM 10G | 2.25 pt<br>or<br>20 lb | 11.5 oz<br>or<br>6 lb | 8 oz<br>or<br>4.5 lb | 3.5 pt<br>or<br>30 lb | 18 oz<br>or<br>9.5 lb | 13 oz<br>or<br>7 lb | Apply Eptam after thinning and clean cultivation; incorporate immediately 2" deep with a cultivator. Cost: \$6.85-\$10.70.         |
| TREFLAN 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 Treflan application to reduce root girdling. Cost: \$2.50-\$3.00. |

## Postemergence

| Herbicide     | Rate Per Acre   |                       |             | Application Time  | Remarks and Approximate Cost/A Broadcast  |
|---------------|-----------------|-----------------------|-------------|---|---|
|               | Pints<br>Brdcst | Ounces<br>Per 7" Band | Per 7" Band |   |   |
|               |                 | 22" Row               | 30" Row     |   |   |
| Betamix 1,3EC | 2<br>3          | 10<br>15              | 7.5<br>11   | Any stage of sugar beet growth. Weeds cotyledon stage. <u>Repeat in 5-7 days.</u> | 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"  | 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), Chem-Hoe (PPI), 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 |
|-----------|-----------------------------|------------------|--|
|-----------|-----------------------------|------------------|--|

**Melons and Cucurbits**

|                            |                       |                      |  |
|----------------------------|-----------------------|----------------------|--|
| Prefar 4E<br>+<br>Alanap-L | 4-6 qt<br>+<br>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: \$2.55-\$3.85. |

**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. |
| Torch 4E    | 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.    |

**WEED RESPONSE TO SELECTED ALFALFA HERBICIDES**

| Response Ratings:<br>E = Excellent (90-100%)<br>G = Good (75-90%)<br>F = Fair (50-75%)<br>P = Poor (0-50%) | barnyardgrass | dandelion | downy brome | field pennycress | foxtail | kochia | lambsquarters | pigweed | R. thistle | sandbur | shepherdspurse | tansy mustard | crop tolerance |
|--|---------------|-----------|-------------|------------------|---------|--------|---------------|---------|------------|---------|----------------|---------------|----------------|
| <b>Preplant</b>  |               |           |             |                  |         |        |               |         |            |         |                |               |                |
| 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              |
| <b>Seedling or Established</b>   |               |           |             |                  |         |        |               |         |            |         |                |               |                |
| Butyrac/Butoxone   | P             | P         | P           | P                | P       | P      | F             | G       | F          | P       | P              | P             | G              |
| Kerb   | G             | P         | P           | P                | G       | G      | F             | P       | G          | G       | P              | P             | G              |
| Poast  | E             | P         | G           | P                | G       | P      | P             | P       | P          | E       | P              | P             | E              |
| <b>Established</b>   |               |           |             |                  |         |        |               |         |            |         |                |               |                |
| Karmex   | E             | F         | F           | G                | E       | E      | G             | G       | F          | F       | E              | E             | G              |
| Lexone/Sencor  | G             | G         | F           | F                | F       | E*     | F             | F       | G          | F       | E              | E             | G              |
| Paraquat   | F             | P         | F           | P                | F       | P      | P             | P       | P          | P       | P              | P             | G              |
| Princep  | G             | F         | E           | E                | F       | E*     | E             | E       | G          | F       | E              | E             | 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>7</sup> | Application Time  | Remarks and Approximate Cost/A Broadcast   |
|--|------------------------------|--|---|--|
| ALFALFA<br>(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 \$2.50-\$3.75.   |
|  | Eptam 7E/Genep               | 2.5-3.5 pt                               |   |  |
|  | Treflan                      | 1-1.5 pt                                 |   |  |
| ALFALFA<br>(Seedling or established)   | Butyrac or Butoxone (2,4-DB) | 1-3 qt                                   | Postemergence. Weeds less than 3" tall; alfalfa 2-4 trifoliolate leaves | For broadleaf weeds. Rate varies with formulation and weed size. Do not use treated forage for 60 days. <b>Do NOT confuse with 2,4-D.</b> Use when temperature is above 50 F. Cost: \$3.50-\$10.50.  |
|  | Poast                        | 1 pt                                     | Grasses 4" or less  | Good coverage necessary. Use crop oil or surfactant. Cost: \$11.50.  |
|  | 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 trifoliolate leaves. Moisture necessary for chemical activity. Kerb helps control sandbur. Cost: \$14.70-\$22.05.   |
| ALFALFA<br>(Established one year or more)  | Princep 90DF                 | 0.45-1.8 lb                              | Fall after last cutting   | Primarily for winter annual weeds such as pennycress and other mustards. 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 barnyard-grass. Cost: Princep \$1.60-\$7.50; Karmex \$6.75-\$13.50; Sinbar \$9.00-\$18.00; Lexone/Sencor \$9.50-\$19.00. |
|  | Karmex 80W                   | 1.5-3 lb                                 | Late fall to early spring to dormant alfalfa                            |  |
|  | Sinbar 80W                   | 0.5-1 lb                                 | Late fall or early spring   |  |
|  | Lexone/Sencor DF             | 0.5-1 lb                                 |   |  |
| COOL-SEASON GRASS SEEDLINGS  | 2,4-D                        | 1-1.5 pt                                 | 2- to 4-leaf stage of grass   | For broadleaf weeds. If larger weeds have formed canopy, increase rate to 1 qt. Cost: \$.65-\$1.50.  |
| WARM-SEASON GRASS SEEDLINGS  | 2,4-D                        | 0.5-1 pt                                 |   |  |
| 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<br>(Established & new seedings)                                   | AAtrex 4L                    | 2 qt                                     | Preemergence within 1 week after planting                               | Makes reduced seeding rates possible. Controls many annual grasses and broadleaf weeds. Do not use on sandy soils below 1% organic matter. 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<br>(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<br>(Legumes into grass)  | Gramoxone                    | 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.  |

(Continued next page)

| Area or Use   | Herbicide   | Commercial Product per Acre <sup>7</sup> | Application Time  | Remarks and Approximate Cost/A Broadcast  |
|---|-------------|--|---|---|
| SOD SEEDING<br>(Native grass planted no-till into short grass range)  | Roundup 3WS | 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.<br>Cost: \$10.25-\$20.50.  |
|   | Roundup 3WS | 1 pt                                     | Spring on cool season grasses   |   |
| ANNUAL OR BIENNIAL BROAD-LEAF WEEDS IN PASTURES AND RANGES  | 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       | 1 qt                                     |   |   |
|   | +<br>Banvel | +<br>0.5 pt                              |   |   |
| PERENNIAL BROADLEAF WEEDS IN PASTURES AND RANGES (Includes vervains, broom snakeweed, western ironweed and woolly loco, Flodman thistle, wavy leaf thistle) | 2,4-D       | 1.5 qt                                   | At bud stage of predominant weed. <sup>8</sup> 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 within 1/2 mile of sensitive crops. Cost: 2,4-D \$3.00; 2,4-D + Banvel \$8.35.             |
|   | 2,4-D       | 1 qt                                     |   |   |
|   | +<br>Banvel | +<br>1 pt                                |   |   |

<sup>7</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>8</sup>Retreatment may be necessary.

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--<br>.Pipewick<br>.Wedgewick<br>.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)            | To reduce injury use straight stream nozzles only.  |
| 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 shattercane and volunteer corn.   |
|                      |  | 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.   |

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

| Herbicide   | Rate<br>Per Acre                     | Application<br>Time   | Remarks and Approximate<br>Cost/A Broadcast   |
|---|--------------------------------------|---|---|
| *Casoron 50W<br>or<br>Casoron 4G<br>or<br>*Norosac 4G | 8 lb<br>or<br>100 lb<br>or<br>100 lb | Preemergence on<br>trees at least<br>2 years old  | Apply 20" band on each side of tree row after<br>trees are planted. Some injury to trees may re-<br>sult on low organic matter soil. Cost: \$122.00.  |
| Dacthal 75W   | 14-16 lb                             | Preemergence  | Application must be made before weed seed<br>germination. Two applications may be necessary<br>for season long weed control. Cost: \$63.00-<br>\$72.00.   |
| 2,4-D amine   | 1 qt                                 | Postemergence<br>to weeds   | Keep off new bark and foliage. Controls broad-<br>leaf weeds. Cost: \$2.00.   |
| *Fusilade 2000<br>or<br>*Poast                        | 2 pt<br>or<br>2 pt                   | Postemergence<br>before grasses<br>tiller   | Use on fruit trees limited to nonbearing trees.<br>Add 1 qt crop oil concentrate per acre. Thorough<br>coverage required. On ornamentals use nonionic<br>surfactant with Fusilade. Cost: Fusilade<br>\$21.50; Poast \$21.50.  |
| Goal 2E   | 2-4 qt                               | Pre- or post-<br>emergence to<br>weeds  | Conifers only. Grasses should be treated before<br>they are beyond 2-leaf stage. Use before bud<br>break or after new growth hardens. Cost:<br>\$36.00-\$72.00.   |
| *Karmex 80W   | 2.5-5 lb                             | Preemergence on<br>trees at least<br>2 years old  | Karmex use limited to conifers, honey locust,<br>green ash, apples and peaches. Cost: \$11.50-<br>\$23.00.  |
| *Gramoxone  | 1.5-3 pt                             | Directed post-<br>emergence   | Nonselective contact herbicide. <b>Keep spray off<br/>tree foliage.</b> Add X-77 surfactant. Cost: \$6.50-<br>\$12.20.  |
| *Princep 80W  | 1-5 lb                               | Preemergence on<br>trees at least<br>2 years old; use<br>only on fruit<br>trees planted 1<br>year or longer | Kochia may become resistant with repeated use.<br>Use 1 lb on sandy, low organic matter, or high pH<br>soils. Apply 20" band on each side of tree row<br>after trees are planted. Some injury to trees may<br>result on low organic matter soils. Gives poor<br>control of Russian thistle. Cost: \$4.90-\$16.25. |
| *Roundup 3WS  | 1-4 qt in<br>10 gal<br>water/A       | Directed post-<br>emergence   | <b>Do not spray green bark or foliage.</b> Spray may<br>contact brown bark. Use lower rate on annuals.<br>Cost: \$20.50-\$82.00.  |
| *Solicam 80WP   | 2.5-5.0 lb                           | Preemergence,<br>late fall or<br>early spring   | Fruit trees only. May be combined with Karmex and<br>Princep for improved broadleaf control. Cost:  |
| *Surflan A.S.   | 2-4 qt                               | Preemergence  | Fruit trees only. May be combined with Karmex and<br>Princep for improved broadleaf control. Cost:<br>\$28.00-\$56.00.  |
| Treflan/Ribal<br>Trifluralin                          | 1-2 pt                               | Preplant  | Incorporate 2-3" deep prior to planting. After<br>planting adjust machine to throw treated soil<br>towards trees in the row. Cost: \$2.55-\$3.85.   |
| Velpar L  | 1.8-3.6 qt                           | Pre- or post-<br>emergence to<br>weeds at least<br>2 months after<br>transplanting                          | Use on Scotch, Austrian and Ponderosa Pine only.<br>Use lower rates on sandy soils, soils low in<br>organic matter, and on first year plantings.<br>May be applied directly over the trees before<br>bud break. Adjacent broadleaf trees may be<br>injured. Cost: \$26.45-\$52.90.                                |

\*Denotes products registered for use on fruit trees.

# AQUATIC WEED CONTROL

27

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

## NON-CROP AREAS

| Area or Use                              | Herbicide <sup>7</sup>   | Commercial Product <sup>8,10</sup>                     | Application Time   | Remarks and Approximate Cost/A Broadcast  |                                     |              |  |
|--|--|--|--|---|-------------------------------------|--------------|--|
| ROADSIDES<br>(Broadleaf<br>weed control) | 2,4-D  | 1 qt/A   | Broadleaf weeds<br>2-6"  | Repeat treatments may be necessary.<br><b>Do not use Banvel or Tordon near<br/>susceptible plants/trees.</b> Cost:<br>2,4-D \$2.00; 2,4-D + Banvel \$8.35;<br>Tordon \$46.00.   |                                     |              |  |
|  | 2,4-D<br>+   | 1 qt/A<br>+  |  |   |                                     |              |  |
|  | Banvel   | 1 pt/A   |  |   |                                     |              |  |
|  | Tordon 212   | 2 qt/A   | Postemergence  |   |                                     |              |  |
| GRASS<br>SUPPRESSION                     | Oust   | 1 oz/A   | Preemergence<br>or early post<br>to weeds  | Do not apply to bare soil. May move<br>if soil moves. Suppresses height and<br>heading of bromegrass and other cool<br>season grasses. Controls most annuals.<br>Trace amounts can harm crops and<br>gardens. Imperative that label direc-<br>tions are read and followed. Cost:<br>\$7.50-\$15.00.   |                                     |              |  |
| IRRIGATION<br>DITCHBANKS                 | Karmex 80W   | 5-10 lb/A  | Soon after<br>ditches are<br>open. Treat<br>before weeds<br>appear or soon<br>thereafter | Use enough water to insure good cover-<br>age. Use 50 mesh to coarser screens.<br>May injure nearby trees and shrubs.<br>Cost: Karmex \$23.00-\$46.00; AAtrex/<br>Atrazine \$14.40; Princep \$23.40.  |                                     |              |  |
|  | AAtrex/<br>Atrazine 4L <sup>3</sup><br>or<br>Princep 4L <sup>3</sup>     | 1.5 gal/A<br>or<br>1.5 gal/A                           |  |   |                                     |              |  |
|  | 2,4-D  | 1 qt/A   | Broadleaf<br>weeds 2-6"  | Cost: \$2.00.   |                                     |              |  |
|  | Roundup 3WS  | 1-4 qt in 10<br>gal or less<br>water/A                 | Postemergence<br>when good<br>growth is<br>present                                       | Nonselective. No residual control.<br>Use the lower rate on annual weeds and<br>perennial grasses, the higher rates on<br>perennial broadleaf weeds. Cost:<br>\$20.50-\$82.00   |                                     |              |  |
|  | Roundup in<br>Herbie<br>Applicator                                       | 1 qt in 1 gal<br>water                                 |  |   |                                     |              |  |
| LONG TERM<br>VEGETATION<br>CONTROL       | Pramitol 25E<br>or<br>Pramitol 5FS                                       | 4 pt/1000 sq ft<br>or<br>10-20 lb/1000<br>sq ft        | Treat before<br>weeds appear<br>or soon there-<br>after                                  | Kochia has become resistant to tria-<br>zines in some areas. Consult label<br>for specific instructions on problem<br>weeds and conditions. Do not use near<br>root zones of trees or other desirable<br>plants. <b>Do not use on land subject to<br/>erosion unless erosion is controlled.</b><br>Cost/1000 sq ft: Pramitol \$8.40;<br>Hyvar \$3.25; Krovar \$4.30; Atrazine<br>\$.30-\$.60; Karmex \$1.15-\$2.30;<br>Princep \$.50-\$1.00; Spike \$2.50-<br>\$5.00. |                                     |              |  |
|  | Hyvar X 80W<br>or<br>Hyvar XL 2WS  | 0.5 lb/1000<br>sq ft<br>or<br>0.75 pt/1000<br>sq ft    |  |   |                                     |              |  |
|  | Krovar I 80W   | 0.5 lb/1000<br>sq ft                                   |  |   |                                     |              |  |
|  | Atrazine 4L <sup>3</sup>   | 0.25-0.5 pt/<br>1000 sq ft                             |  |   |                                     |              |  |
|  | Karmex 80W   | 0.25-0.5 lb/<br>1000 sq ft                             |  |   |                                     |              |  |
|  | Princep 4L <sup>3</sup>  | 0.25-0.5 pt/<br>1000 sq ft                             |  |   |                                     |              |  |
|  | Spike 80W<br>or<br>Spike 5G  | 0.12-0.25 lb/<br>1000 sq ft<br>or<br>2-4 lb/1000 sq ft |  |   |                                     |              |  |
|  | PERENNIAL<br>GRASSES<br>(including<br>bromegrass<br>and quack-<br>grass) | Roundup 3WS  |  |   | 2 qt/A in 10 gal<br>or less water/A | Full foliage | Nonselective. Perennial grasses<br>should have good top growth. Kills<br>all annuals. Cost: Roundup \$41.00;<br>Amitrol-T \$40.00. |
|  |  | Amitrol-T/<br>Cytrol-T 2WS                             |  |   | 2 gal/A                             |              |  |

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:  
1 qt AAtrex or Atrazine 4L = 1.25 lb AAtrex or Atrazine 80W = 1.1 lb AAtrex Nine-O

1 qt Princep 4L = 1.25 Princep 80W

<sup>7</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>9</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>10</sup>Use per acre rate in 100 gallons for handgun or power sprayer.

# 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>7</sup>                     | Product Per 100 Gallons <sup>8,10</sup> or | Application Time   | Remarks and Approximate Cost/A Broadcast  |
|--|--|--|--|---|
| ALFALFA<br>(for control of volunteer 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. |
|  | 2,4-D amine + Banvel                       | 0.5 pt + 0.5 pt                            | 12-18" tall <sup>8</sup>                                       | 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                                 | 0.17-0.50 oz                               | 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                                 | 0.1 oz                                     |  |   |
| BUCKBRUSH (snowberry)                                    | 2,4-D LV ester                             | 1-2 qt                                     | Full foliage (May 10-25) <sup>8</sup>                          | Use sufficient water to insure good coverage. Cost: \$2.50-\$5.00.  |
| BUFFALO BUR  | Atrazine 4L                                | 3 qt                                       | Preplant or preemergence in corn                               | Reduced rates less effective. Cost: \$7.20.   |
|  | Buctril 2EC or Torch 4EC                   | 1.5 pt or 0.75 pt                          | Weeds 3-5 leaf stage in corn or sorghum                        | Plants taller than 4" not controlled. Cost: \$8.45.   |
|  | Blazer 2S                                  | 1 qt                                       | Weeds 3-4 leaf stage in soybeans                               | 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 Torch 4EC                   | 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 <sup>8</sup>         | Non-crop areas. Tordon may remain in soil for three or more years. Cost: \$46.00.   |
|  | 2,4-D + Banvel                             | 1 qt + 1 pt                                | Jun or when growing actively <sup>8</sup>                      | See remarks for field bindweed. If soil moisture conditions are poor, use oil-water emulsions as a carrier. Cost: \$5.20.                                     |

## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

| Weed                               | Herbicide <sup>7</sup> | Product Per Acre <sup>8</sup> or Per 100 Gallons <sup>9,10</sup> | Application Time   | Remarks and Approximate Cost/A Broadcast  |
|------------------------------------|------------------------|--|--|---|
| CANADA THISTLE                     | Tordon 22K             | 2 qt   | Fall-actively growing or spring-early flower bud <sup>8</sup>  | 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 <sup>8</sup>  | Do not plant small grains for 45 days or sugar beets the following year. See remarks for field bindweed. Cost: \$14.70.   |
|                                    | Roundup 3WS            | 2-3 qt in 10 gal or less water                                   | Flower bud stage or in fall when growing actively <sup>8</sup> | Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for 3 days. Cost: \$41.00-\$61.50.   |
|                                    | Banvel                 | 1-2 qt   | Fall-actively growing or spring-early flower bud <sup>8</sup>  | Idle ground or grassland. Avoid tillage for 5 days. Injury to forage grasses may occur. Broad-leaf crops may be injured for 2 years after treatment. Cost: \$12.70-\$25.40.   |
|                                    | Ally + Surfactant      | 0.1 oz   |  | Use only 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 <sup>8</sup>                             |   |
|                                    | 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 3WS            | 3 qt in 10 gal or less water                                     | At flowering   | Avoid water contamination. Cost: \$61.50.   |
| CHEATGRASS                         | See Downy Brome        |  |  |   |
| 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.  |
| 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   |  | 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; Garlon \$18.00-\$54.00.   |
|                                    | Crossbow               | 1.5 gal  | Full foliage during Jun  |   |
|                                    | Garlon 4               | 1-3 qt   |  |   |
|                                    | Spike 20P              | 0.25 oz/1" dia   | Spring or fall   |   |
| 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   |   |
|                                    | Crop Rotation          | --   | Include a spring seeded crop in the rotation.                  |   |

(Continued next page)

| Weed  | Herbicide <sup>7</sup>              | Product Per Acre or Per 100 Gallons <sup>9,10</sup> | Application Time  | Remarks and Approximate Cost/A Broadcast  |
|---|-------------------------------------|---|---|---|
| FIELD BINDWEED (use herbicide rates on pages 17 & 18 when treating crops) | 2,4-D                               | 1 qt  | Vigorous fall growth or flower bud stage in spring <sup>8</sup>   | Avoid tillage 5 weeks before and 1 week after application. Do not plant small grains for 15 days after treatment. Plan to treat for several consecutive years. Cost: 2,4-D \$2.00; 2,4-D + Banvel \$8.35.   |
|   | 2,4-D + Banvel                      | 1 qt + 1 pt   |   |   |
|   | Tordon 22K                          | 2 qt  | Vigorous fall growth or flower bud stage in spring <sup>8</sup>   | Tordon for non-crop areas and spot treatment in pasture and rangeland. Avoid tillage 5 weeks before and 1 week after application. 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 <sup>8</sup>  | Use 10 gal or less water per acre with Roundup. Avoid tillage for 5 days. Broadleaf crops may be injured 2 years after high rates of Banvel in western Nebraska. Cost: Roundup + 2,4-D \$11.45; Roundup + Banvel \$13.40; Banvel \$12.75-\$25.40.   |
|   | Banvel                              | 1-2 qt  |   |   |
| GROUNDSEL, RIDDELL  | 2,4-D LV ester                      | 1 qt  | May 15-Jun 15   | Cost: \$2.50.   |
| HEMP (Marijuana)  | 2,4-D                               | 1 qt  | 2-12" tall  | Cost: \$1.00-\$2.00.  |
| HEMP DOGBANE  | 2,4-D                               | 1 qt  | Flower bud stage <sup>8</sup> -spring   | Use lower rates in crops. Cost: \$2.00.   |
|   | 2,4-D                               | 1-1.5 qt  |   |   |
|   | 2,4-D amine + Banvel                | 1 qt + 0.5 pt                                       | After corn silks turn brown or milo is in the soft dough stage <sup>8</sup> . 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 3WS                         | 4 qt  | Late summer or fall <sup>8</sup>  | Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for at least 7 days after treatment. Cost: \$82.00.  |
| HOARY CRESS   | 2,4-D LV ester                      | 2 qt  | Rosette stage in the fall or early bud in spring <sup>8</sup>   | 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 3WS                         | 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: \$41.00-\$61.50.   |
| JOINTED GOATGRASS   | AAtrex or Atrazine 4L               | 2 qt  | Preemergence (fall or spring prior to Apr 1)  | Use 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. Cost: AAtrex/Atrazine \$4.80; Princep \$7.80.  |
|   | Princep 4L                          | 2 qt  |   |   |
| Crop Rotation -- Include a spring seeded crop in the rotation.            |                                     |   |   |   |



## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

| Weed                           | Herbicide <sup>7</sup>      | Product Per Acre or Per 100 Gallons <sup>9,10</sup> | Application Time   | Remarks and Approximate Cost/A Broadcast   |
|--------------------------------|-----------------------------|---|--|--|
| KOCHIA<br>(Triazine resistant) | Banvel                      | 0.5 pt  |  | Triazine resistant plants are not controlled by any of the triazine herbicides including Atrazine, Bladex, Igran and Sencor/Lexone. Cost: Banvel \$3.20; Torch or Buc-tril \$8.45-\$11.25; 2,4-D + Banvel \$3.70.  |
|                                | Torch<br>or<br>Buc-tril 2EC | 0.5-0.75 pt<br>or<br>1-1.5 pt                       | Before kochia reaches 3"; retreatment may be necessary                     |  |
|                                | 2,4-D amine<br>+            | 0.5 pt<br>+   |  |  |
|                                | Banvel                      | 0.5 pt  |  |  |
| LEAFY SPURGE                   | 2,4-D LV ester              | 2 qt  | Bud stage spring or late fall <sup>8</sup>                                 | Retreatment necessary. Annual applications gradually reduce infestation. Cost: 2,4-D LV \$5.00; 2,4-D + Tordon \$13.50.  |
|                                | 2,4-D Amine<br>+            | 1 qt<br>+   |  |  |
|                                | Tordon 22K                  | 1 pt  |  |  |
|                                | Tordon 22K                  | 2-4 qt  | Fall or spring   | Tordon for non-crop areas and spot treatment in pasture and range.   |
|                                | Roundup<br>+                | 1 qt<br>+   | Sep to early Oct + spring  | Roundup + 2,4-D for control in sugar beets. Cost: \$46.00-\$92.00.   |
|                                | 2,4-D Amine                 | 1 qt  |  |  |
| LOCUST, HONEY AND BLACK        | Banvel                      | 2 qt  | Full foliage during Jun; cut stump or basal treatment anytime              | Ground application only. Observe all drift precautions. See cottonwood for basal and cut stump treatment. Cost: Banvel \$25.40; Garlon \$18.00-\$54.00.  |
|                                | Garlon 4                    | 1-3 qt  |  |  |
|                                | Spike 20P                   | 0.25 oz/1" dia                                      | Spring or fall   | Apply under drip line. Cost: \$8.00/lb.  |
|                                | Velpar RP                   | 4 ml/1" dia   | Spot gun-spring  | Cost: \$.07/tree inch.   |
| MILKWEED, COMMON               | 2,4-D<br>+                  | 1 qt<br>+   | Flower bud to bloom stage <sup>8</sup>                                     | Do not plant small grains for 15 days after 2,4-D + Banvel treatment. 2,4-D + Banvel suppresses growth for 1 year. Cost: \$5.15.   |
|                                | Banvel                      | 0.5 pt  |  |  |
|                                | Roundup 3WS                 | 3 qt in 10 gal or less water/A                      | Flowering thru maturity <sup>8</sup> ; ropewick application in soybeans    | Idle ground or spot treatment on cropland before head or pod fill of crop. Avoid tillage for 7 days. Cost: \$61.50.  |
| MILKWEED, HONEYVINE (climbing) | 2,4-D amine                 | 1-2 pt  | Before vines reach 3' in length <sup>8</sup>                               | 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 lengthen | 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<br>+                  | 1 qt<br>+   |  |  |
|                                | Banvel                      | 0.5 pt  |  |  |
|                                | Tordon 22K (musk only)      | 6-8 oz  | Oct 1-Dec 1 or spring before flowering stalks lengthen                     |  |
| OAKS                           | Banvel                      | 2 qt  | Full foliage Jun to Jul; cut stump or basal treatment anytime              | 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                                      | Spring or fall   |  |
|                                | Velpar RP                   | 4 ml/1" dia   | Spot gun-spring to tree base   |  |

(Continued next page)

## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

| Weed  | Herbicide <sup>7</sup>                                   | Product Per Acre or Per 100 Gallons <sup>9,10</sup> | Application Time                                 | Remarks and Approximate Cost/A Broadcast   |
|---|--|---|--|--|
| OSAGE ORANGE                                    | Garlon 4   | 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                                      | Amino Triazole/ Weedazol 90SP or Amitrol-T/ Cytrol-T 2WS | 2 tbs/gal of water or 0.5 cup/gal of water          | Full foliage (Jun) <sup>8</sup>                  | Thoroughly wet all vegetation. Do not apply to cropland. Cost: \$1.00/1000 sq ft.  |
| POISON HEMLOCK                                  | 2,4-D + Banvel   | 1 qt + 0.5 qt                                       | 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 <sup>8</sup>                        | 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 KNAPEWEED                               | Banvel 4WS   | 1-2 qt  | Early flower bud stage <sup>8</sup>              | 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) <sup>8</sup>            | 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 <sup>8</sup> (Jun)               | 1.5 qt/A 2,4-D adequate on sand sagebrush. Cost: \$3.75-\$5.00.  |

## TROUBLESOME WEEDS AND WOODY PLANTS (continued)

| Weed   | Herbicide <sup>7</sup>              | Product Per Acre or Per 100 Gallons <sup>8,10</sup> | Application Time  | Remarks and Approximate Cost/A Broadcast   |
|--|-------------------------------------|---|---|--|
| SANDBUR  | Tandem                              | 1 pt  | Postemer-<br>gence.<br>Sandbur 1"<br>or less              | Cost: \$17.00.   |
|  | +                                   |   |   |  |
|  | Atrazine 4L                         | 3 pt  |   |  |
|  | +                                   |   |   |  |
|  | Oil                                 | 2 pt  |   |  |
| Treatments listed for shattercane also control or suppress sandbur.  |                                     |   |   |  |
| SHATTERCANE  | Eradicane Extra 6E                  | 5.3 pt  | Preplant to<br>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 Eradicane 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 provides suppression of light infestations. Cultivation improves control. Cost: Eradicane/Extra \$13.75-\$17.75; Sutan/Genate \$16.80; Eradicane or Extra + Bladex \$23.15-\$26.60; Eradicane or Extra + Princep \$21.50-\$24.80; Sutan + Bladex \$26.15; Sutan + Princep \$24.60; Treflan \$5.10-\$6.40; Lasso \$21.60; Prowl \$6.90; Vernam + Treflan \$12.30; Dual \$15.65; Fusilade \$9.00; Poast \$11.50. |
|  | Sutan+/Genate Plus                  | 7.3 pt  |   |  |
|  | Princep or<br>Bladex 4L             | 2 qt  |   |  |
|  | +                                   |   | Preplant to<br>corn. Repeat<br>at 1/2 rate<br>at planting |  |
|  | Eradicane or Extra                  | 5-5.3 pt <sup>11</sup>                              |   |  |
|  | or<br>Sutan+/Genate Plus            | 7.3 pt  |   |  |
|  | Lasso 4EC                           | 4 qt  | Preplant to<br>corn. Repeat<br>at 1/2 rate<br>at planting |  |
|  | Dual 8E                             | 2.5 pt  |   |  |
|  | Prowl 4EC                           | 3 pt  | Preplant to<br>soybeans                                   |  |
|  | Vernam 7E                           | 3 pt  |   |  |
|  | +                                   |   |   |  |
|  | Treflan 4EC                         | 1 pt  | Postemergence<br>in soybeans.<br>Cane 6-18"               |  |
| Fusilade 2000  | 0.75 pt                             |   |   |  |
| Poast  | 1 pt                                |   |   |  |
| <b>An alternate system</b> -- Ridge or till-plant corn and apply Dual or Lasso with Princep or Bladex and cultivate. |                                     |   |   |  |
| SOAPWEED<br>(Yucca)  |                                     |   |   | No labeled herbicide.  |
| SUMAC  | 2,4-D LV ester                      | 1-2 qt  | Full foliage  | Use sufficient water for good coverage. Cost: \$2.50-\$5.00.   |
| SWAMP<br>SMARTWEED<br>(tanweed,<br>shoestring)   | 2,4-D LV ester                      | 1 qt  | When growing<br>vigorously <sup>8</sup>                   | On crops use lower rates and amine formulations. Cost \$8.85.  |
|  | +                                   |   |   |  |
|  | Banvel                              | 1 pt  |   |  |
|  | Roundup 3WS                         | 3-4 qt in 10 gal or less water/A                    | Full foliage mid to late summer <sup>8</sup>              | Idle ground or spot treatment in cropland before head or pod fill of crop. Avoid tillage for 7 days. Cost: \$61.50-\$82.00.  |
| VELVETLEAF   | AAtrex/<br>Atrazine 4L <sup>3</sup> | 1.2 qt  | Velvetleaf<br>less than 4"                                | AAtrex/Atrazine and 2,4-D for corn and milo; Basagran for soybeans and corn; Basagran + Atrazine for corn. Use crop oil concentrate with AAtrex/Atrazine and Basagran + Atrazine. Command drift may damage green vegetation. Command residue may damage wheat planted the same fall. Cost: AAtrex/Atrazine \$4.40; Basagran \$17.85-\$23.30; Basagran + Atrazine \$13.50; Torch 4E/Buctril \$5.25-\$7.90; 2,4-D \$.65-\$1.25; Marksman \$4.80-\$8.40; Command \$7.50-\$11.75 + additional herbicide costs.   |
|  | Basagran 4WS                        | 1-2 pt  |   |  |
|  | +                                   |   |   |  |
|  | 28% N                               | 1 gal   |   |  |
|  | Basagran 4WS                        | 0.5 qt  | Velvetleaf<br>less than 4"                                |  |
|  | +                                   |   |   |  |
|  | Atrazine 4L                         | 0.5 qt  |   |  |
|  | Torch 4E                            | 0.5-0.75 pt   | Velvetleaf<br>less than 4"                                |  |
|  | or                                  |   |   |  |
|  | Buctril 2EC                         | 1-1.5 pt  |   |  |
| +  |                                     | Velvetleaf<br>less than 12"                         |   |  |
| 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                         |   |  |
| Command 4 EC + other soil applied herbicides   | 1-1.5 pt                            | PPI to soybean planting                             |   |  |

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>7</sup>   | Product Per 100 Gallons | Per Acre or Gallons <sup>8,10</sup> | Application Time   | Remarks and Approximate Cost/A Broadcast   |
|-------------------|--|-------------------------|-------------------------------------|--|--|
| WILD OATS         | In Nebraska probably weedy annual brome.                           |                         |                                     | See Downy brome.   |  |
| WILD PROSO MILLET | Eradicane/<br>Eradicane Extra<br>or<br>Sutan+ 6.7E/<br>Genate Plus | 5-5.3 pt<br>or<br>5 pt  |                                     | Preplant to corn   | Apply to dry surface soil and incorporate immediately with disc or field cultivator. Cost: Eradicane/Extra \$13.75-\$17.25; Sutan/Genate \$11.50.    |
|                   | Prowl 4EC<br>+<br>Bladex 80W                                       | 1 qt<br>+<br>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<br>+<br>Bladex 80W                                       | 1.5 pt<br>+<br>1.25 lb  |                                     | Wild proso millet 1-3 leaf stage. Corn 4 true leaves or less | Follow label directions. Cost: \$18.00.  |

<sup>3</sup>Additional formulations are available. Use rates that give comparable amounts of active ingredient:

1 qt AAtrex or Atrazine 4L = 1.25 lb AAtrex or Atrazine 80W or 1.1 lb AAtrex Nine-O

<sup>7</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>8</sup>Retreatment may be necessary.

<sup>9</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>10</sup>Rates per 100 gallons pertain to handgun on a power sprayer.

<sup>11</sup>Labeled rate of Eradicane is 7.3 pt/A.

### 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. Agitate.
- (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.

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

Acetochlor--A residual herbicide related to Lasso. Monsanto.

Alachor--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 alachor. 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--Controls wild oats not annual bromes in wheat (Am. 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 Betanal + 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 red-root 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--Combination 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.

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.

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

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

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

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

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

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

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 turf, ornamentals and horticultural crops. SDS Biotech Corp.

dalapon--Primarily for perennial grass control. Vertac.

Dinitro Weed Killer (dinoseb)--Uses cancelled by EPA in 1986.

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).

Dowpon--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.

Dyanap--Uses cancelled by EPA in 1986.

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

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

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 lbs atrazine for PPI or pre-emergence use in corn. DuPont.

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) 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. Pennwalt.

Hoelon (dichlofop)--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.

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 post-emergence in alfalfa. Rohm & Haas.

Knoxweed--A combination of Eptam and 2,4-D for pre-emergence 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 non-cropland 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 lbs glyphosate (Roundup) and 1.6 lbs 2,4-D primarily for no-till. 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 lbs 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 of Ro-Neet with antidote for preplant use in corn. Weed spectrum control similar to Sutan+. EUP. Stauffer.

Marksmen--A combination of 1.1 lbs 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 combinations. 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 turf and johnsongrass in non-crop 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 non-cropland 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 non-cropland. Gramoxone Super. ICI Americas.
- Paraquat+Plus--Now Gramoxone Super. ICI Americas.
- pendimethalin--Common name for Prowl. Also active ingredient in some preemergence turf herbicides.
- Phytar (cacodylic acid)--Nonselective contact herbicide used for weed control on non-cropland.
- 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 non-cropped areas. Ciba-Geigy.
- Prefar (bensulide)--Used preplant for grass and broadleaf weeds in cantaloupe, cucumbers and watermelons. Stauffer.
- Premerge (dinoseb)--Uses cancelled by EPA in 1986.
- Preview--10 parts Lexone plus 1 part Classic for 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.
- 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 (CDA)--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.
- Reflex (fomesofen)--An experimental herbicide for broadleaf weeds in soybeans. ICI Americas.
- 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.
- Rhino--Similar to Atrabute and Sutazine. PPG.
- Ribal--Trade name for trifluralin. ICI Americas.
- 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.
- Ronstar (oxadiazon)--Used preemergence for annual grass and broadleaf weeds in nursery stock and turf. Rhone-Poulenc.
- Roundup (glyphosate)--A postemergence nonselective translocated herbicide for annual and perennial grasses and broadleaf weeds. No soil residual. Monsanto.
- Salute 4EC--Package blend of 1.33 lbs 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, pre-emergence 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.
- Silvex (2,4,5-TP)--A phenoxy herbicide for which all uses have been canceled.
- 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 non-crop areas. Elanco.
- Squadron--Package mix of Prowl and Scepter. American Cyanamid.
- 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 combinations 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+** (Sutant + atrazine)--A combination of 4 parts Sutant and one 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.

**2,4,5-T**--A phenoxy herbicide for which all uses have been cancelled.

**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 non-cropland; also preemergence in sugar beets. Vertac.

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

**Telone** (dichloropene)--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 non-selective, non-residual translocated postemergence herbicide. Stauffer.

**Tophand**--Acetochlor plus safener. EUP. Monsanto.

**Tordon** (picloram)--A postemergence herbicide for annual and perennial broadleaf weeds. Residues may last for several years in the soil. Dow.

**Torch 4EC**--A contact herbicide for broadleaf weeds in corn, sorghum, and small grain. Union Carbide.

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

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

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

**Trophy** (poppenate methyl)--A selective postemergence herbicide for grass control in soybeans and other broadleaf crops. Stauffer.

**Turbo 8EC**--A package mix of 6.55 lbs Dual and 1.45 lbs 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 non-cropland, Christmas tree plantings, and alfalfa. DuPont.

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

**Verdict** (haloxyfop-methyl)--A selective postemergence herbicide that controls shattercane, volunteer corn and other grasses in soybeans. EUP. Dow.

**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.

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

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

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 1000 sq ft

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      |



## APPROXIMATE RETAIL PRICES OF SELECTED HERBICIDES

(Most Listing are as of November 10, 1986)

| Herbicide      | Price       | Herbicide       | Price       | Herbicide        | Price        |
|----------------|-------------|-----------------|-------------|------------------|--------------|
| Ally           | \$25.00/oz  | 2,4-D ester     | \$10.00/gal | Poast            | \$80.00/gal  |
| AAtrex 4L      | \$ 9.60/lb  | Dacthal 75W     | \$ 4.50/lb  | Pramitol 5P      | \$ 1.10/lb   |
| AAtrex 80W     | \$ 1.90/lb  | Diquat          | \$63.20/gal | Pramitol 25E     | \$19.10/gal  |
| Alanap L       | \$12.40/gal | Dowpon M        | \$ 2.00/lb  | Prefar           | \$32.80/gal  |
| Amiben DS      | \$ 6.30/lb  | Dual 8E         | \$50.00/gal | Princep 80W      | \$ 3.30/lb   |
| Amitrol-T      | \$20.00/gal | Embark 2E       | \$80.00/gal | Princep 4L       | \$15.60/gal  |
| Antor          | \$37.30/gal | Eptam 7E        | \$24.30/gal | Prowl            | \$18.40/gal  |
| Aquaclean      | \$ 1.00/lb  | Eptam 10G       | \$ .40/lb   | Ramrod-atrazine  | \$14.50/gal  |
| Aquathal       | \$ 1.00/lb  | Eradicane       | \$19.50/gal | Ramrod Flowable  | \$16.80/gal  |
| Aquathal 1.6E  | \$57.60/gal | Eradicane Extra | \$26.80/gal | Rescue           | \$12.80/gal  |
| Aquazine       | \$ 5.20/lb  | Extrazine       | \$16.00/gal | Reward           | \$17.60/gal  |
| Atrabute       | \$17.60/gal | Fusilade 2000   | \$80.00/gal | Rhino            | \$17.60/gal  |
| Balan          | \$14.80/gal | Garlon 4        | \$71.50/gal | Ribal 4EC        | \$20.00/gal  |
| Banvel         | \$50.80/gal | Genate Plus     | \$18.20/gal | Ro-Neet 7E       | \$47.90/gal  |
| Basagran       | \$87.20/gal | Genep           | \$24.30/gal | Ro-Neet 10G      | \$ 1.50/lb   |
| Betanex        | \$65.00/gal | Glean           | \$17.00/oz  | Roundup          | \$82.00/gal  |
| Betamix        | \$65.00/gal | Goal 2E         | \$72.00/gal | Salute           | \$46.80/gal  |
| Bicep          | \$21.60/gal | Gramoxone       | \$34.20/gal | Scepter          | \$160.00/gal |
| Bladex 4L      | \$18.80/gal | Herbicide 273   | \$35.60/gal | Sencor/Lexone 4L | \$100.80/gal |
| Bladex 80W     | \$ 3.60/lb  | Hyvar X         | \$10.80/gal | Sencor/Lexone DF | \$19.00/lb   |
| Blazer 2L      | \$49.15/gal | Hyvar XL        | \$34.40/gal | Sinbar           | \$18.00/lb   |
| Brominal ME4   | \$90.00/gal | Igran 80W       | \$ 4.70/lb  | Solicam          | \$10.00/lb   |
| Brominal 3+3   | \$72.00/gal | Karmex 80W      | \$ 4.60/lb  | Sonalan          | \$22.00/gal  |
| Bronate        | \$72.00/gal | Kerb 50W        | \$14.70/lb  | Spike 5G         | \$ 2.80/lb   |
| Bronco         | \$32.00/gal | Krenite         | \$40.40/gal | Spike 80W        | \$20.00/lb   |
| Buctril        | \$42.00/gal | Krovlar I       | \$ 8.60/lb  | Spike 20P        | \$ 8.00/lb   |
| Butoxone       | \$14.00/gal | Landmaster      | \$20.00/gal | Surflan          | \$56.00/gal  |
| Butyrac        | \$14.00/gal | Lasso           | \$21.60/gal | Sutant+          | \$18.20/gal  |
| Classic        | \$20.00/oz  | Lasso II        | \$ 1.00/lb  | Sutazine         | \$17.60/gal  |
| Casoron 10G    | \$ 3.20/lb  | Lasso-atrazine  | \$16.00/gal | Tandemn          | \$87.00/gal  |
| Casoron 50W    | \$14.00/lb  | Leafex 3        | \$ 3.20/gal | Treflan          | \$20.40/gal  |
| Casoron 4G     | \$ 1.20/lb  | Lorox 4L        | \$50.40/gal | Torch 4E         | \$90.00/gal  |
| Chem-Hoe 4L    | \$16.00/gal | Marksman        | \$19.00/gal | Tordon 22K       | \$92.00/gal  |
| Command 4EC    | \$60.00/gal | MCPA            | \$12.00/gal | Turbo            | \$79.00/gal  |
| Conquest       | \$16.00/gal | Modown 4EC      | \$26.00/gal | Velpar L         | \$58.80/gal  |
| Crop Oil Conc. | \$ 6.00/gal | Nortron         | \$47.30/gal | Vernam           | \$26.00/gal  |
| Crossbow       | \$40.00/gal | Norosac 4G      | \$ 1.20/lb  | X-77             | \$14.80/gal  |
| 2,4-D amine    | \$ 8.00/gal | Oust            | \$ 7.50/oz  |                  |              |

## 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 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.