Chemical Weed Control in Soybeans : 1985

Cooperative Extension South Dakota State University

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Chemical Weed Control in Soybeans: 1985

Cooperative Extension Service • South Dakota State University • U.S. Department of Agriculture

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Losses from weeds in soybeans can be serious. Annual broadleaves such as sunflower, velvetleaf, or cocklebur are difficult to control. Most perennial weeds cannot be controlled. Herbicides are an aid to a good rotation, proper seedbed preparation, and cultivation.

Herbicide Suggestions
Information in this publication is based on South Dakota Agricultural Experiment Station research and other research or observations. Herbicides are included only after the chemical is registered by the Environmental Protection Agency (EPA) as to residue tolerances in crops used for food or feed.

The information does not imply a guarantee or responsibility for results. The use of tradenames is for reader convenience and does not imply product endorsement. The label should be considered the final guide. Users are responsible for following all label directions and precautions.

Weed Problems. Weeds are grouped as small-seeded annual broadleaves (kochia, lambsquarters, pigweed, etc.), annual grasses (green or yellow foxtail, etc.), or perennial weeds. Control is rated poor, fair, good, very good, or excellent for each category of weeds.

Special Weed Problems. A section for 'Special Weed Problems' gives the best treatments for each weed.

Herbicides. Most herbicides are listed by tradename. The common name is also included in the heading in parentheses. Only the common name is used when the same active ingredient is available in several products.

Treatments listed under 'Soybean Herbicides' are those considered to be useful for most situations in South Dakota. Those listed under 'Other Soybean Herbicides' may be useful for special problems, are inadequately tested, or have given less consistent performance.

Rate. Rates for each treatment are stated as the amount of product per acre. All rates are on a broadcast basis; adjust accordingly for band application.

Time to Apply. Herbicides may be applied:
- PREPLANT: Surface applications usually 2 to 6 weeks before planting in no-till systems.
- PREPLANT INCORPORATED: before the crop is planted, incorporate as directed.
- SHALLOW PREPLANT INCORPORATED: preplant incorporated, but herbicide is usually restricted to the top 1 to 2 inches of soil with single-pass incorporation.
- PREEMERGENCE: after planting, but before crop or weeds emerge.
- POSTEMERGENCE: after the crop or weeds have emerged.

Band vs. Broadcast
One cultivation is usually needed with broadcast applications. Banding reduces the cost per acre and usually replaces one or two row cultivations.

Adjust broadcast rates for banding. A 12- to 14-inch band is suggested for top planting; a 7-inch band is suggested for most deep furrow or lister planted crops.

Drilled Or Solid Seeding
Drill-planted or solid-seeded soybeans are more competitive with weeds after the first 3 to 4 weeks.

Early season control is critical. Preplant or preemergence combinations are strongly suggested where both annual grasses and broadleaves are present.

Do not use these planting systems if perennial weeds are a problem. Use the maximum herbicide rate for the soil type.

Reduced Tillage Systems
Furrow And Top-plant
Crop residue on the surface may distort the spray pattern or intercept some of the herbicide. Using the maximum rate for the soil type will partially compensate; however, the amount used should not exceed labeled rates. Heavy residue should be worked into the soil before broadcasting soil-applied treatments. Devices to move residue from the row area will improve results for band application.

Do not use preplant incorporated treatments with deep furrow or lister planting, as treated soil is moved from the row area. For these systems, limit band width of preemergence herbicides to the width of the furrow bottom. Check herbicide label for restrictions on furrow planted crops.

Labeled rates for the range in soil types are listed in this publication. Suggested rates based on SDSU tests are also stated. These rates have provided acceptable weed control with at least one cultivation. Higher rates increase cost per acre but may be justified where heavy weed pressure is expected or where maximum control is desired.

There is no intent to specify product performance guarantees; such agreements involve the labeler and user. Consult specific labels and their accompanying material.
SOYBEAN HERBICIDES

**Treflan (TRIFLURALIN)**

1-2 pt Treflan 4E or 5-10 lb Treflan 10G (½-1 lb act)

Excellent control of most annual grasses and fair control of small-seeded annual broadleaves such as pigweed and lambsquarters. Does not control mustard, nightshade, smartweed, or large-seeded annual broadleaves. Consistent performance. Very good crop tolerance. Low rate is for light, low organic matter soil; the high rate is for heavy, clay soil. Rate of 1½ pt/A has been satisfactory in most SDSU tests. Liquid formulation may be applied in liquid fertilizer or may be impregnated onto certain dry fertilizers. Minimum carrier is 5 gpa for ground or air. Carryover may damage oats or sorghum planted the following year.

Liquid or granule formulation may be applied in late fall and incorporated with one fall tillage operation and one pass in the spring before planting. Spring application seems best suited for most soybean situations. Liquids usually preferred for spring application. Granules appear to fit best for fall applications. Limited data or experience with fall applications in soybeans; however, weed control with fall applied granules has been equal to that for spring applied liquid.

PREPLANT INCORPORATED. Incorporation preferred, but may be delayed up to 24 hours if soil surface is dry and wind is under 10 mph. Incorporate into the top 2 to 3 inches of soil using a tandem disk with small blades set to cut 4 to 6 inches deep operated at 4 to 6 mph, a field cultivator equipped with three or four rows of sweeps spaced no more than 7 inches apart, or other suitable equipment. A second incorporation improves uniformity, especially under wet, lumpy, or trashy conditions. Follow with a harrow or leveling device. A tandem disk followed by a field cultivator provides good incorporation under a variety of conditions. Improper incorporation reduces control.

**Prowl (PENDIMETHALIN)**

1-3 pt Prowl 4E (½-1½ lb act)

Excellent control of most annual grasses and fair control of small-seeded annual broadleaves such as pigweed and lambsquarters. Does not control mustard, nightshade, smartweed, or large-seeded annual broadleaves. Consistent performance as a preplant incorporated treatment. Very good crop tolerance if properly incorporated; less tolerance if left on the surface. Lower rates are for light, low organic matter soil; the higher rates are for heavy, clay soil. Rate of 2½ pt/A has been satisfactory in most SDSU tests. Preplant incorporated applications may be made in liquid fertilizer or impregnated onto certain dry fertilizers. Minimum carrier is 10 gpa for ground or 5 gpa for air. No label restrictions for crops planted the following year. Problems have not been observed under normal conditions.

PREPLANT INCORPORATED. Immediate incorporation preferred, but may be delayed up to 7 days. Incorporate into the top 1 to 2 inches of soil with a small-bladed tandem disk set to cut 2 to 4 inches deep, field cultivator, or other suitable equipment. A second incorporation improves uniformity, especially if no rain was received or under lumpy, trashy conditions. One pass, shallow incorporation may be adequate if the soil has been prepared adequately prior to application. Follow with a harrow or leveling device. Improper incorporation reduces control.

**Sonalan (ETHALFLURALIN)**

1½-3½ pt Sonalan 3E (¾-1½ lb act)

Excellent control of most annual grasses; fair to good control of small-seeded annual broadleaves such as pigweed and lambsquarters. Does not give satisfactory control of mustard, smartweed, or large-seeded annual broadleaves. Consistent performance. Good to very good crop tolerance. Chemically related to Treflan. Provides similar performance when amount of product is adjusted to label rates. High rates provide eastern black nightshade suppression and give some added broadleaf control. Rate of 2½ pt/A has been satisfactory in most SDSU tests. Use 3 to 3½ pt/A and incorporate with two passes for partial nightshade control. May be applied in liquid fertilizer or impregnated on certain dry fertilizers. Minimum carrier is 5 gpa. Less soil residual than Treflan; no labeled limitations for the following year.

PREPLANT INCORPORATED. Apply within 3 weeks before planting. Incorporate into top 2 to 3 inches of soil. Immediate incorporation preferred; however incorporation may be delayed up to 48 hours. Use suitable equipment to provide uniform mixing. Second pass required for nightshade.
Vernam (VERNOLATE) or Reward (VERNOLATE + EXTENDER)

2½-3½ pt Vernam 7E or 2½-4 pt Reward 6E (2-3 lb act)

Results on velvetleaf have been variable; control has been fair in some tests. Vernam and Reward have provided similar annual weed control in limited SDSU comparisons when compared at equal rates of active ingredient. Fair to good crop tolerance; soybeans outgrow initial emergence delay and leaf malformation. Reward contains the same active ingredient as Vernam plus a chemical extender to lengthen soil residual. This could improve seasonal weed control; especially for early applications. Low rate is for light, low organic matter soil. Rate of 3 pt/A Vernam or 3½ pt/A Reward has been used in most SDSU tests.

PREPLANT INCORPORATED. Must be incorporated immediately. Incorporate into top 2 to 3 inches of soil with a small-bladed tandem disk set to cut 4 to 6 inches deep followed by a harrow or leveling device. A second incorporation insures uniformity. Improper incorporation reduces control.

Treflan and/+ Sencor or Lexone (TRIFLURALIN AND/+ METRIBUZIN)

Prowl and/+ Sencor or Lexone (PENDIMETHALIN AND/+ METRIBUZIN)

Sonalan and/+ Sencor or Lexone (ETHALFLURALIN AND/+ METRIBUZIN)

1-2 pt Treflan 4E and/+ ½-1 pt Sencor or Lexone 4L or ½-2½ lb Sencor or Lexone 75DF (½-1 and/+ ½-½ lb act)

1½-2½ pt Prowl 4E and/+ ½-1 pt Sencor or Lexone 4L or ½-2½ lb Sencor or Lexone 75DF (¾-1½ and/+ ¼-½ lb act)

1¼-3 pt Sonalan 3E and/+ ½-1 pt Sencor or Lexone 4L or ½-2½ lb Sencor or Lexone 75DF (½-1 1/8 and/+ ¼-½ lb act)

Excellent control of several annual grasses and small-seeded annual broadleaves. Fair to good control of some large-seeded annual broadleaves. Of the soil applied treatments, metribuzin gives best annual broadleaved control. Fair crop tolerance. Risk of injury from metribuzin on variable, sandy, high pH, low organic matter soils or on clay knolls. Do not use on soil that is sandy, has a pH over 7.4, or less than 1% organic matter. Cold, wet soil conditions that slow crop emergence increase risk of injury. Combined effects of metribuzin with atrazine carryover can produce serious crop injury. Use lower rates for light, lower organic matter soils. Higher rates are for heavy, clay, low pH soils.

Special labeling for Sencor + Treflan on calcareous soil provides for the use of Sencor at ½ to 1 lb 75DF or ½ to 1½ pt 4L per acre for wild mustard, lambquarters, and pigweed; including the use of ½ lb 75DF or ½ pt 4L per acre regardless of soil pH.

PREPLANT INCORPORATED. Tank-mix. Incorporate as for Treflan or Prowl or Sonalan alone. Best performance if rainfall very limited, but may give slightly less control of large-seeded annual broadleaves and have slightly less crop tolerance than split overlay application. Maximum metribuzin rate is 3/8 lb/A active for most soils. Rates of 1½ pt Treflan or 2½ pt Prowl or 2½ pt Sonalan + Sencor or Lexone at ¼ pt of 4L or ½ lb of 75DF formulation per acre have been satisfactory in most SDSU tests. More convenient than split overlay application and good choice for small-seeded broadleaves.

SPLIT PREPLANT INCORPORATED AND PREEMERGENCE. Apply usual rate of Treflan or Prowl or Sonalan preplant and incorporate as for each herbicide used alone. Apply Sencor or Lexone preemergence after planting. Maximum Sencor or Lexone rate is ¼ to 1 pt of 4L or ½ to 1½ lb of 75DF formulation per acre. Slightly better crop tolerance than for preplant tank-mix but requires a second application.

SPLIT TANK-MIX PREPLANT INCORPORATED AND PREEMERGENCE. Incorporate a tank-mix of the usual rate of Treflan or Prowl with Sencor or Lexone as for the preplant incorporated treatment. Apply additional Sencor or Lexone preemergence after planting. Rates for the additional Sencor or Lexone for most soil are from ¼ to ¾ pt of 4L or 1/6 to ½ lb of 75DF formulation per acre. Rates of ½ pt of 4L or ½ lb of 75DF Sencor or Lexone formulation per acre have been used as the overlay in most SDSU tests. Provides better crop tolerance when higher Sencor or Lexone rates are needed for better control of weeds such as velvetleaf. Promising for special situations. Follow soil precautions carefully.
### Treflan and Lorox (TRIFLURALIN AND LINURON)

- **Sonalan and Lorox (ETHALFLURALIN AND LINURON)**
- **Prowl and Lorox (PENDMETHALIN AND LINURON)**

#### Treflan and Lorox

1-2 pt Treflan 4E and ½-2 lb Lorox 50W or ½-2 pt Lorox 4L (½-1 and ¼-1 lb act)

1½-3 pt Sonalan 3E and 1-5 pt Lorox 4L (½-1 1/8 and ½-2½ lb act)

1-2½ pt Prowl 4E and 1-2½ lb Lorox 50W or 1-2½ pt Lorox 4L (½-1¼ and ½-1¼ lb act)

Excellent control of annual grasses and very good control of several small-seeded annual broadleaves. Fair control of certain large-seeded broadleaves. Lorox rate of 2 lb of 50W or 1 qt of 4L formulation per acre has been used in most SDSU tests. Low rates for lighter, low organic matter soil. Slightly less risk of injury than with metribuzin combinations. Plant seed 1¾ inches deep. Do not use on sands. Do not incorporate Lorox. Combined effects of Lorox with atrazine carryover can cause serious crop injury.

**SPLIT PREPLANT INCORPORATED**

Incorporate AND PREEMERGENCE. usual rate of Treflan or Sonalan or Prowl before planting and apply Lorox preemergence. Follow application directions and precautions as for Treflan, Prowl, Sonalan or Lorox used alone.

### Treflan and/ + Amiben (TRIFLURALIN AND/ + CHLORAMBEN)

- **Prowl and/ + Amiben (PENDMETHALIN AND/ + CHLORAMBEN)**
- **Sonalan and/ + Amiben (ETHALFLURALIN AND/ + CHLORAMBEN)**

#### Treflan and Amiben

1½-2 pt Treflan 4E and/ + 4-6 qt Amiben 1.8L or 2.4-3.6 lb Amiben 75DS (¼-1 and/ + 1.8-2.7 lb act)

1½-2½ pt Prowl 4E and/ + 4 qt Amiben 1.8L or 2.4 lb Amiben 75DS (¼-1¼ and/ + 1.8 lb act)

1¼-3 pt Sonalan 3E and/ + 4-6 qt Amiben 1.8L or 2.4-3.6 lb Amiben 75DS (½-1 1/8 and/ + 1.8-2.7 lb act)

Excellent control of several annual grasses. Good to very good control of several small-seeded annual broadleaves such as Russian thistle, kochia, and lambsquarters. Fair control of several large-seeded annual broadleaves. Sonalan at high rate + Amiben provides fair to good nightshade control. Very good crop tolerance. Weed control and crop tolerance affected less by soil variation than for linuron or metribuzin. Minimum carrier is 10 gpa. Refer to sections for Treflan or Prowl or Amiben or Sonalan.

**PREPLANT INCORPORATED.** Tank-mix. Incorporate as for Treflan or Prowl or Sonalan alone. Shallow incorporation with Prowl preferred to deeper incorporation. Broadleaf control less than for split application except with extremely limited rainfall. Split application preferred for most situations.

**SPLIT PREPLANT INCORPORATED AND PREEMERGENCE.** Incorporate normal rate of Treflan or Prowl or Sonalan before planting and apply Amiben preemergence. Rainfall required for Amiben. Slightly better broadleaf control than preplant tank-mix. Preferred application method. Amiben may be banded to reduce cost.

### Lasso (ALACHLOR)

2-3½ qt Lasso 4E or 4MT or 16-26 lb Lasso II 15G (broadcast) (2-3½ lb act)

Very good to excellent control of several annual grasses and fair control of pigweed with high rates and favorable conditions. Useful for special weed problems such as nightshade or nutsedge. Consistent on annual grasses when rainfall or soil moisture requirements are met. Excellent crop tolerance. Low rate is for light, low organic matter soil; the high rate is for heavy clay soil. Rates of 2½ to 3 qt Lasso or 18 to 20 lb Lasso II per acre (broadcast) have been satisfactory in most preemergence SDSU tests. Preplant spray or preemergence applications may be applied in liquid fertilizer. Preplant spray application may be impregnated onto certain dry fertilizers. Use 2½ to 4 qt/A where soybeans are planted into high amounts of crop residue in minimum tillage systems. Minimum carrier is 10 gpa for ground. Lasso MT is a micro encapsulated formulation containing 4 lb/gal. It has improved mixing qualities with fertilizer. Use and performance is similar to Lasso 4E. Granule or spray formulations appear equally effective. Granules are applied to the soil surface behind the press wheel. Adjust granule rate for banding. Follow handling directions. Use protective clothing including face shield, rubber gloves, and boots when mixing. No carryover.
SHALLOW PREPLANT INCORPORATED. Incorporate into top 2 inches of soil within 7 days of planting using with a field cultivator, shallow disk, multiweeder, or other suitable equipment during final seedbed preparation. Flexline harrow is not satisfactory. Will improve control when rainfall is very limited but gives slightly less control than preemergence application with adequate rainfall. Some rainfall improves results. Proper incorporation may be difficult with trashy, lumpy seedbed. Deeper incorporation reduces annual grass control. Use 1 pt/A more Lasso than for preemergence. Rate of 3½ qt/A Lasso has been used in most tests. Furrow planters will move treated soil from row area.

PREEMERGENCE. Requires ½ to ¾ inch rainfall within one week after application. Use a harrow or rotary hoe if weeds emerge before rainfall is received. Travel the same direction as the rows if banded.

EARLY POSTEMERGENCE. Primarily for situations where unanticipated delays prevented preplant or preemergence application. Will not control emerged weeds. Apply before soybeans have more than two true leaves. Do not apply in liquid fertilizer.

Dual (METOLACHLOR)

1½-3 pt Dual 8E or 6-12 lb Dual 25G (broadcast) 1½-3 lb act)

Very good to excellent control of several annual grasses and fair control of pigweed with high rates and favorable conditions. Useful for special weed problems such as nightshade or nutsedge. Consistent on annual grasses when rainfall or soil moisture requirements are met. Excellent crop tolerance. Low rates are for light, low organic matter soil; the high rate is for heavy clay soil. Rates of 2½ to 3 pt Dual or 10 to 12 lb Dual 25G (broadcast) have been satisfactory in most SDSU tests. Spray may be applied in liquid fertilizer. Preplant incorporated applications may be impregnated onto certain dry fertilizers. Minimum carrier is 10 gpa for ground and 2 gpa for air. Limited data on granule formulation. Adjust granule rate for band. Granules are applied to the soil surface behind the press wheel. No carryover.

EARLY PREPLANT. Surface application primarily for no-till or reduced till. For application 30-45 days before planting, use a split application and apply ½ of the Dual before weeds emerge and apply remaining ½ at planting. Applications less than 30 days before planting may be made as a split or single treatment. Appears promising for no-till. Split application preferred for best extended control. Use high rate for soil type. Plant with no-till equipment to minimize soil disturbance. Not for sandy soils.

SHALLOW PREPLANT INCORPORATED. Incorporate into top 2 inches of soil with a field cultivator, shallow disk, or other suitable equipment during final seedbed preparation and within 14 days before planting. Will improve results when rainfall is very limited but gives slightly less control than preemergence application with adequate rainfall. Proper incorporation may be difficult with trashy, lumpy seedbed. Deeper incorporation reduces annual grass control. Use maximum rate for soil type.

PREEMERGENCE. Requires ½ to ¾ inch rainfall within one week after application. Use a harrow or rotary hoe if weeds emerge before rainfall is received. Travel same direction as the rows if banded.

Amiben (CHLORAMBEN)

1-1½ gal Amiben 1.8L or 2.4-3.6 lb Amiben 75DS or 20-30 lb Amiben 10G (broadcast) (1.8-2.7 lb act)

Good control of several annual grasses and good to very good control of some small-seeded annual broadleaves such as pigweed, lambsquarters, or smartweed. Very good Russian thistle control in some tests. Variable control of velvetleaf. Does not control sunflower. Some erratic results. Rainfall critical. Good crop tolerance. Some stunting noted with heavy rainfall at emergence. Spray or granule forms appear equally effective. Granules are applied to soil surface behind the press wheel. Low rate for light, low organic matter soil. Amiben rates of 6 qt or 3.6 lb of 75DS formulation per acre have been satisfactory in most SDSU tests. Preplant or preemergence applications may be made in liquid fertilizer carrier. Minimum carrier is 10 gpa for ground and 3 to 5 gpa for air.

SHALLOW PREPLANT INCORPORATED. Weed control less than for preemergence application except under extremely dry conditions. Incorporate before planting into the top 2 inches of soil with shallow disk or other suitable equipment.

PREEMERGENCE. Preferred application method. Must have ½-1 inch of rainfall within one week after application. Use rotary hoe or harrow if rainfall is not received within 3 to 5 days.

POSTEMERGENCE + CROP OIL. Apply when soybeans are in the cracking to fourth trifoliate stage. Use Amiben at 6 qt 1.8L or 3.6 lb 75DS plus 1 qt crop oil concentrate per acre. Rainfall required for residual control. Primarily for certain annual broadleaves. Small grasses may be controlled if moisture conditions are favorable. Results for other weeds improved with use of harrow or rotary hoe. Controls or suppresses 1- to 6-inch velvetleaf; 1- to 3-inch smartweed or pigweed. Primarily for special situations. Limited tests. Water carrier only. Do not apply later than 33 days after planting.
Lasso and/+ Sencor or Lexone (ALACHLOR AND/+ METRIBUZIN)

Dual and/+ Sencor or Lexone (METOLACHLOR AND/+ METRIBUZIN)

2-3 qt Lasso 4E or 4MT and/+ ½-1 pt Sencor or Lexone 4L or ½-½ lb Sencor or Lexone 75DF (2-3 and/+ ¾-¾ lb act)

1½-2½ pt Dual BE and/+ ½-1 pt Sencor or Lexone 4L or ½-½ lb Sencor or Lexone 75DF (1¼-2½ and/+ ¾-¾ lb act)

Very good to excellent control of several annual grasses and small-seeded annual broadleaves. Fair to very good control of some large-seeded annual broadleaves. Metribuzin gives best annual broadleaf control of soil applied treatments. Fair crop tolerance. Risk of injury from metribuzin on variable, sandy, high pH, low organic matter soils or on clay knolls. Do not use on soil that is sandy, has a pH over 7.4, or has less than 1% organic matter. Cold, wet soil conditions that slow emergence increase risk of injury. Combined effects of metribuzin with atrazine carryover can produce serious crop injury. Use lower rates for light, lower organic matter soils. Higher rates are for heavy, clay, low pH soils. Sencor or Lexone at ½ pt of 4L or ½ lb of 75DF formulation per acre (¼ lb/A active) usually gives satisfactory control of light infestations of many small-seeded broadleaves and reduces risk of injury. Special labeling for Sencor + Lasso in calcareous soil provides for the use of Sencor at ¼ to ½ lb 75DF or ¼ to ½ pt 4L per acre for wild mustard, lambsquarters, and pigweed, including the use of ½ lb 75DF or ½ pt 4L per acre regardless of soil pH. Use maximum rate for soil type for best control of weeds like sunflower or velvetleaf. May be applied in liquid fertilizer carrier. Minimum carrier is 10 gpa for ground equipment or 2 gpa for Dual with aerial equipment.

SHALLOW PREPLANT INCORPORATED. Tank-mix. Incorporate as for Lasso or Dual alone. Will improve results when rainfall is very limited, but gives slightly less control than preemergence application with adequate rainfall. There is slightly less tolerance to metribuzin applied in this manner. Maximum metribuzin rate for most soils is 3/8 lb/A active. Rates of 2½ qt Lasso or 2 pt Dual + Sencor or Lexone at ¾ pt of 4L or ½ lb of 75DF formulation per acre have been satisfactory in most SDSU tests. Use higher rate for heavy, clay soil.

SPLIT PREPLANT INCORPORATED AND PREEMERGENCE. Incorporate the usual rate of Lasso or Dual shallowly before planting. Apply Sencor or Lexone preemergence after planting. Maximum Sencor or Lexone rate is ¾ to 1 pt of 4L or ½ to ¾ lb of 75DF. Slightly better crop tolerance than for preplant tank-mix but requires a second application operation.

SPLIT TANK-MIX PREPLANT INCORPORATED AND PREEMERGENCE. Incorporate a tank-mix of the usual rate of Lasso or Dual with Sencor or Lexone as for the preplant incorporated treatment. Apply additional Sencor or Lexone preemergence after planting. Rates for additional Sencor or Lexone range from ¼ to ¾ pt of 4L or 1/6 to ½ lb 75DF formulation per acre. Rate of ½ pt of 4L or ½ lb of 75DF Sencor or Lexone formulation per acre has been used as the overlay in most SDSU tests. Allows for better crop tolerance when higher Sencor or Lexone rates are needed for better control of weeds such as velvetleaf. Promising for special situations where broadleaves are serious. Follow label directions carefully.

PREEMERGENCE. Tank-mix. Must have ½ to ¾ inch rainfall within one week. Metribuzin applied preemergence gives slightly better control of broadleaves and has slightly better crop tolerance than preplant incorporated. Maximum metribuzin rate is ½ lb/A active for most heavy soils. Rates of 2 qt Lasso or 2 pt Dual + Sencor or Lexone at ¾ to 1 pt of 4L or ½ to ¾ lb of 75DF formulation per acre have been satisfactory in most SDSU tests. More convenient than split application.

Lasso + Lorox (ALACHLOR + LINURON)

Dual + Lorox (METOLACHLOR + LINURON)

1½-3 qt Lasso 4E or 4MT + 1-3 lb Lorox 50W or 1-3 pt Lorox 4L (1½-3 + ½-1½ lb act)

1¼-2½ pt Dual 8E + 1-3 lb Lorox 50W or 1-3 pt Lorox 4L (1¼-2½ + ½-1½ lb act)

Tank-mix. Very good to excellent control of several annual grasses. Very good control of several small-seeded annual broadleaves. Fair control of some large-seeded annual broadleaves. Good crop tolerance. More risk on light soil. Low rates are for light, low organic matter soils. Higher Lorox rates improve control of some large-seeded broadleaves, but increase risk of injury. Slightly less risk of injury than with metribuzin combinations. Rates of 2 qt Lasso or 2 pt Dual + Lorox at 2 lb of 50W or 2 pt of 4L formulation per acre have been satisfactory in most SDSU tests. Do not use on sandy soils. Combined effects of Lorox with atrazine carryover can produce serious crop injury. May be applied in liquid fertilizer. Plant seed at least 1½ inch deep. Ground application.

PREEMERGENCE. As for Lasso or Dual alone. Do not incorporate.
Lasso and/Amiben (ALACHLOR AND/ CHLORAMBEN)

**Dual and/Amiben (METOLACHLOR AND/ CHLORAMBEN)**

2 qt Lasso 4E or 4MT and/4 q Amiben or 2.4 lb Amiben 75DS (2 and/1.8 lb act)

1½-2½ pt Dual BE and/4-6 q Amiben or 2.4-3.6 lb Amiben 75DS (1½-2½ and/1.8-2.7 lb act)

Very good to excellent control of several annual grasses. Very good control of several small-seeded annual broadleaves. Fair control of some large-seeded annual broadleaves. Very good crop tolerance. Weed control and crop tolerance affected less by soil variation than with linuron or metribuzin combinations. Low rates are for light, low organic matter soil. Rates of 2 qt Lasso or 2 pt Dual + Amiben at 4 qt or 2.4 lb of 75DS formulation per acre have been satisfactory in most SDSU tests. High Amiben rate improves control of some large-seeded broadleaves. Apply as for Lasso or Dual alone.

**SHALLOW PREPLANT INCORPORATED**. Tank-mix. Incorporate as for Lasso or Dual alone. Rates of 2½ qt Lasso or 2 pt Dual per acre have been satisfactory in most shallow incorporated tests with this combination.

**PREEMERGENCE**. Tank-mix. Preferred application method for most situations.

**SPLIT PREPLANT INCORPORATED AND PREEMERGENCE**. Incorporate Dual or Lasso shallow preplant incorporated and apply Amiben preemergence. Amiben may be banded to reduce cost.

Lasso + Modown (ALACHLOR + BIFENOX)

**Dual + Modown (METOLACHLOR + BIFENOX)**

2-3 qt Lasso 4E or 4MT + 2½-4 pt Modown 4F (2-3 + 1¼-2 lb act)

1½-3 pt Dual BE + 2½-4 pt Modown 4F (1½-3 + 1¼-2 lb act)

Tank-mix. Very good to excellent control of several annual grasses and good control of some small-seeded annual broadleaves. Very good on pigweed. Fair control of some large-seeded annual broadleaves. Fair crop tolerance. Weed control and crop tolerance affected less by variation in soil type than with linuron or metribuzin combinations; however, leaf burn and stunting can be serious if raindrops splash bifenox onto the emerging crop. Yields are usually not affected. Shallow incorporation reduces problem. Low rates are for light, low organic matter soil. Rates of 2 qt Lasso or 2 pt Dual + 3 pt Modown per acre have been satisfactory in most SDSU tests.

**SHALLOW PREPLANT INCORPORATED**. Apply within 7 days of planting and incorporate into top 1 inch of soil with rotary hoe, shallow field cultivator, or other suitable equipment. Do not use a disk. Must be shallow or weed control is reduced. Less crop injury. Furrow planting moves treated soil from row area.

**PREEMERGENCE**. Must have ½ to ¾ inch of rain within one week after planting. Use a rotary hoe or harrow if rain is not received within 7 days after planting. Method will improve control and reduce risk of crop injury.

Basagran (BENTAZON)

¾-1 qt Basagran 4L (¾-1 lb act)

**POSTEMERGENCE**. Excellent control of cocklebur and very good control of small sunflower and velvetleaf. Pigweed, nightshade, and Kochia usually are not controlled. Weeds should be small for best results. Soybeans are usually in the unifoliate to 2-trifoliate leaf stage but are tolerant at all growth stages. Excellent crop tolerance. Some leaf margin burn may occur if plants are under stress. Best results under good growing conditions; less effective under low humidity or dry conditions. Rainfall within 8 hours reduces effectiveness.

The low rate is for cocklebur under 6 inches, velvetleaf under 2 inches, or sunflower or mustard under 4 inches. High rate is for larger weeds but before cocklebur is 10 inches, velvetleaf 5 inches, or sunflower or mustard 6 to 7 inches. Best sunflower control in SDSU tests is with split application of 1½ pt/A followed by 1 pt/A 10-14 days later. Late season treatment of two applications of ¾ qt/A applied 10 to 14 days apart or a single application of 1½ qt/A will give partial control of cocklebur up to 24 inches.

Primarily contact action. Good coverage important. Minimum carrier is 20 gpa for ground or 5 gpa for air with minimum of 40 psi boom pressure. Do not use flood-jet nozzles. Very small amounts of 2,4-D or Banvel contamination in tank, hoses, boom, or container can cause severe damage. Do not cultivate for 3 to 5 days after application. See special weed problem section for perennial weed control.

Petroleum-base non-phytotoxic oil concentrate is suggested for some situations. Oil is suggested for velvetleaf, ragweed, and lambquarters. Not required for cocklebur. Maximum oil rate is 1 qt/A for ground and 1 pt/A for air. Crop leaf burn is usually not increased except with very high temperature or high humidity.
Blazer (ACIFLUORFN)

1½-2 pt Blazer 2L (3/8-1/2 lb act)

POSTEMERGENCE. Good to excellent control of certain annual broadleaves, including black nightshade, pigweed, and wild mustard. Results on velvetleaf and cocklebur are more variable. Topgrowth burn on field bindweed and Canada thistle has been satisfactory in most situations. Some annual grass suppression noted. Fair crop tolerance. Leaf burn or speckling is frequently noted. Crop recovers rapidly under good growing conditions. Most risk is during times of high humidity and high temperature. Delay cultivation for 7 days before or after application. Rainfall within 6 hours reduces control.

Primarily a contact herbicide. Good coverage is important. Apply when weeds are in the 2- to 4-leaf stage, usually within 21 days after crop emergence. Rate of 2 pt/A has been used in most SDSU tests. Add 1 pt of non-ionic surfactant per 100 gal of solution. To control escaped grasses at the 2- to 4-leaf stage, lambsquarters, buffalo bur and other hard to control weeds, increase the surfactant to 2 to 4 pt per 100 gal of solution. The previous 25 formulation did not require surfactant. Areas may be retreated but the total applied should not exceed 4 pt/A. Good coverage important. Do not use flood nozzles. Minimum carrier is 20 gpa for ground or 10 gpa for air. Use 40 to 60 psi pressure. Do not apply within 50 days of harvest.

Basagran + Blazer (BENTAZON + ACIFLUORFN)

1-2 pt Basagran 4L + 1-2 pt Blazer 2L (½-1 + ¼-½ lb act)

POSTEMERGENCE. Intended to provide control of more species than either herbicide used alone. Blazer improves the control of pigweed and lambsquarters. Basagran is best for velvetleaf or cocklebur. Suggested rates vary according to the product label. The rates range from 1 to 2 pt Basagran plus 1 to 2 pt Blazer per acre. The rate may be adjusted to about 75% of the normal rate of the herbicide which will give the best control of the predominant weed and about 50% of the normal rate for the other product. The rate of 1½ pt of each is suggested for heavy stands of mixed weed species. Use at least 1 pt/A Basagran in the mixture to control cocklebur up to the 6-leaf stage and at least 1½ pt/A Basagran if velvetleaf is a significant problem. The label directions for rates and use of surfactant or crop oil vary on product labels. Non-ionic surfactant at 1 pt per 100 gal of solution should be used for general application. Surfactant should be increased to 2 to 4 pints per 100 gal of solution for escaped grasses. Crop oil concentrate at 1 pt/A is suggested for velvetleaf. For most severe weed situations, crop oil may be increased to 1 qt/A; however risk of foliage burn increases. Diammonium phosphate, commonly available in a water soluble fertilizer (10-34-0) may be used at 1 qt/A as a replacement for surfactant or crop oil. Velvetleaf control is improved. Leaf burn associated with crop oil is less apparent. Weeds should be under 2 or 3 inches tall for best results on most weeds. Minimum carrier is 20 gpa for ground and 10 gpa for air.

Poast (SETHOXYM)

½-2¾ pt Poast 1.5E (.1-.5 lb act)

POSTEMERGENCE. Very good to excellent control of annual grasses. Wild proso millet is controlled with lowest rate. Volunteer corn usually requires the higher rates. Provides some short-term suppression of quackgrass at high rate. Does not control broadleaves. Excellent crop tolerance.

Growth rate of treated grasses is reduced soon after application. Yellowing, reddening, and tip burn all usually noted within 3 weeks after application. Rates are ½ pt/A for wild proso (4-12 in), 1 pt/A for foxtail (3-8 in), and wild cane (6-18 in), 1 pt/A for volunteer corn (6-20 in), 1½ pt/A for wild oats (2-4 in) and 2½ pt/A for quackgrass (6-8 in). Quackgrass can be retreated with another 1½ pt/A when regrowth reaches 6 to 8 inches.

Crop oil concentrate at 1 qt/A is used with all Poast applications. Avoid cultivation for one week before and one week following application. Rainfall within one hour after application will reduce effectiveness. Control of weeds under drought stress is diminished.

Coverage is important. Use flat fan or hollow cone nozzles. Minimum carrier is 10 gpa for ground and 5 gpa for air. Tank-mixing with other herbicides except as noted on the label can reduce effectiveness. Allow at least one day between sequential applications of other herbicides. Pressure should be 40 to 60 psi. Do not apply within 70 days of harvest. Avoid drift to sensitive crops such as corn, sorghum, or cereals. Poast is formulated as a 1.5 lb/gal liquid.

Poast and/+ Basagran (SETHOXYM AND/+ BENTAZON)

½-2¾ pt Poast 1.5E and/+ ¾-1 qt Basagran 4L (.1-.5 and/+ .¾-1 lb act)

Sequential or tank-mix. Rates and growth stages for specific weeds as for Poast or Basagran alone. Add crop oil concentrate as specified for each. Refer to section for Poast or Basagran alone.

SEQUENTIAL POSTEMERGENCE. Growth stage of weeds determines sequence; usually annual broadleaves reach treatment stage first. Allow at least 24 hours between applications, regardless of sequence. Sequential preferred.

TANK-MIX POSTEMERGENCE. May be tank-mixed if grasses and broadleaves are both at proper growth stage; however the rate of Poast should be increased 50% from that listed to compensate for antagonism. Crop oil concentrate at 1 qt/A should be used.
Poast and + Blazer (SETHOXYDIM AND/ + ACIFLUORFEN)

Poast and + Basagran + Blazer (SETHOXYDIM AND/ + BENTAZON + ACIFLUORFEN)

½-2½ pt Poast 1.5E and/ + 1½-2 pt Blazer 2L (.1-.5 and/ + 3/8-1/2 lb act)
½-2½ pt Poast 1.5E and/ + 1-2 pt Basagran 4L + 1-2 pt Blazer 2L (.1-.5 and/ + ¼-½ lb act)

Sequential or tank-mix. Rates and growth stages for specific weeds as for Poast or Blazer or Poast + Blazer used as separate applications.

SEQUENTIAL POSTEMERGENCE. Growth stage of weeds determines sequence; usually annual broadleaves reach treatment stage first. If Blazer or Basagran + Blazer is applied first, allow time for grasses to resume growth and produce one new leaf. Usual time interval is 7 to 10 days before Poast should be applied. If Poast is applied first, allow at least 24 hours before applying Blazer or Basagran + Blazer. Use rates and surfactant or crop oil specified in the sections for each herbicide used alone. Sequential preferred.

TANK-MIX POSTEMERGENCE. These treatments can be tank-mixed if grasses and broadleaves are both at proper growth stages; however the rate of Poast should be increased 50% from that listed to compensate for antagonism. Crop oil concentrate at 1 qt/A is specified. Expect increased leaf burn under some conditions when compared to surfactant which can be used with the Blazer component in sequential treatment.

Fusilade (FLUAZIFOP-BUTYL)

¼-1½ pt Fusilade 4E (1/8-1/4 lb act)

POSTEMERGENCE. Good to excellent control of wild proso millet, wild cane, and volunteer corn with lowest rates. Fair control of annual grasses. Foxtail usually requires the higher rate. Provides some short-term suppression of quackgrass at high rate. Does not control broadleaved weeds. Excellent crop tolerance.

Growth rate of treated grasses is reduced soon after application. Weeds show leaf yellowing or browning 10 to 14 days after treatment. Control of foxtail has been variable under moisture stress conditions. Volunteer corn control is more consistent. Rates are ¼ pt/A for wild proso (4-8 in), wild cane (6-12 in), volunteer corn (12-18 in). Use ½ pt/A for foxtail, wild oats, and other annual grasses 2 to 4 inches tall. For quackgrass, apply ¼ pt/A when quackgrass has at least four leaves but is not over 10 inches tall. Repeat the treatment when quackgrass regrowth has three to five leaves.

Use 1 qt crop oil concentrate or ½ pt non-ionic surfactant per 25 gal of solution with all Fusilade applications. Avoid cultivation for one week before and one week after application. Rainfall within 1 hour after application will reduce effectiveness.

Do not apply after soybean bloom or within 100 days of harvest. Do not plant crops other than soybeans for 60 days after application. Avoid drift to sensitive crops such as corn, sorghum, or cereals.

Fusilade and Blazer (FLUAZIFOP AND ACIFLUORFEN)

¼-1½ pt Fusilade 4E and 1½-2 pt Blazer 2L (1/8-1/4 and 3/8-1/2 lb act)

Apply Fusilade at rate and grass growth stages as for Fusilade alone and Blazer at rate and growth stages as for Blazer used alone. Add surfactant or crop oil as directed for each. Refer to section for Fusilade and Blazer alone.

SEQUENTIAL POSTEMERGENCE. Growth stage of weeds determines sequence; usually annual broadleaves reach treatment stage first. If Blazer is applied first, allow time for grasses to resume growth and develop a new leaf. Usual time interval is 7 to 10 days before Fusilade should be applied. If Fusilade is applied first; allow 3 days for annuals and 5 days for perennials before applying Blazer.

Hoelon (DICLOFOP)

2-3½ pt Hoelon 3E (¾-1¼ lb act)

POSTEMERGENCE. Good to excellent control of annual grasses. Effective on barnyardgrass, green and yellow foxtail, wild oats, and volunteer corn. Does not control perennial grass or broadleaved weeds. Annual grasses should be in the 1- to 4-leaf stage and soybeans not beyond the sixth trifoliate leaf. Use 2-2½ pt at the 1- to 2-leaf stage, and 2½-3½ pt at the 3- to 4-leaf stage. Do not treat after 4-leaf stage. Yellow foxtail should be treated before the second leaf is fully emerged. Treat volunteer corn after all corn has emerged but before first emerged corn is too tall for thorough coverage into the whorl. Add 1 to 2 pt crop oil concentrate when using 2 pt/A for volunteer corn. Annual grasses are frequently beyond susceptible stage and control will be reduced. Coverage is important. Minimum carrier is 20 gpa for ground or 5 gpa for air. Restricted Use Pesticide.
OTHER SOYBEAN HERBICIDES

Vernam or Reward + Treflan (VERNOLATE OR VERNOLATE + EXTENDER + TRIFLURALIN)

Vernam or Reward + Prowl (VERNOLATE OR VERNOLATE + EXTENDER + PENDIMETHALIN)

Vernam or Reward + Amiben (VERNOLATE OR VERNOLATE + EXTENDER + CHLORAMBEN)

Vernam or Reward + Lasso (VERNOLATE OR VERNOLATE + EXTENDER + ALACHLOR)

Vernam or Reward and Amiben (VERNOLATE OR VERNOLATE + EXTENDER + CHLORAMBEN)

Vernam or Reward and Lorox (VERNOLATE OR VERNOLATE + EXTENDER + LINURON)

Vernam or Reward + Treflan + Sencor or Lexone (VERNOLATE OR VERNOLATE + EXTENDER + TRIFLURALIN + METRIBUZIN)

Treflan and/ + Furloe (TRIFLURALIN AND/ + CIPC)

Vernam and/ + Furloe (VERNOLATE AND/ + CIPC)

Furloe gives very good to excellent control of smartweed and wild buckwheat. Control of large-seeded annual broadleaves is not improved. Good to excellent control of annual grasses. Very good crop tolerance. Low rates are for light, low organic matter soil. Minimum carrier is 10 gpa. Appears to have limited potential, except where smartweed is a major problem. Refer to section for each herbicide used alone.

PREPLANT INCORPORATED. Tank-mix. Incorporate into the top 1½ to 2 inches of soil as for Treflan or Vernam alone. Split application preferred, as deep incorporation reduces Furloe performance.

SPLIT PREPLANT INCORPORATED AND PREEMERGENCE. Incorporate Treflan or Vernam as recommended for each herbicide used alone. Apply Furloe preemergence. Preferred application method.
Three-way combinations. These combinations are intended to improve weed control with Treflan or Prowl + Amiben combinations while minimizing the risk of injury associated with Sencor or Lexone. Provides very good to excellent control of many annual weeds; however control of weeds such as velvetleaf or cocklebur is less than for the combinations using full Sencor or Lexone rates. Appears to have limited potential for most weed situations. Follow soil limitations as for Sencor or Lexone.

PREPLANT INCORPORATED. Tank-mix. Incorporate as for Treflan or Prowl alone.

Excellent annual grass control. Both herbicides are most effective on grasses. Combination useful for improved black nightshade control or for situations when grass problems are critical. Rates are essentially full rates of each used alone. Limited data on crop tolerance. Use 3 to 3 ½ pt/A Sonalan for black nightshade. Potential primarily for nightshade or to improve control of difficult grass problems. Refer to section for Sonalan alone.

SHALLOW PREPLANT INCORPORATED. Tank-mix. Apply and incorporate as for Sonalan alone. Use 1 pt/A more Lasso than for preemergence. Do not incorporate herbicide over 2 inches deep.

Prowl + Dual (PENDIMETHALIN + METOLACHLOR)

Prowl + Lasso (PENDIMETHALIN + ALACHLOR)

Treflan + Dual (TRIFLURALIN + METOLACHLOR)
Lasso + Amiben + Sencor or Lexone (ALACHLOR + CHLORAMBEN + METRIBUZIN)

Dual + Amiben + Sencor or Lexone (METOLACHLOR + CHLORAMBEN + METRIBUZIN)

2-3 qt Lasso 4E or 4MT + 4-6 qt Amiben 1.8L or 2.4-3.6 lb Amiben 75DS + ½-1 pt Sencor or Lexone 4L or ½-1½ lb Sencor or Lexone 75DF

1½-3 pt Dual BE + 4-6 qt Amiben 1.8L or 2.4-3.6 lb Amiben 75DS + ½-1 pt Sencor or Lexone 4L or ½-1½ lb Sencor or Lexone 75DF

Three-way tank mix. Intended to improve control of certain weeds which are not controlled by Lasso or Dual + Amiben combination while reducing the risk of injury associated with Sencor or Lexone. Provides very good to excellent control of many annual weeds; however control of weeds such as velvetleaf or cocklebur is less than for the combinations using full Sencor or Lexone rate. Appears to have limited potential for most weed situations. Follow soil limitations as for Sencor or Lexone.

SHALLOW PREPLANT INCORPORATED. Incorporate as for Lasso or Dual alone.

PREEMERGENCE. As for Lasso or Dual alone. Do not apply after crop emerges. Rainfall required.

Lasso + Lorox + Lexone (ALACHLOR + LINURON + METRIBUZIN)

Dual + Lorox + Lexone (METOLACHLOR + LINURON + METRIBUZIN)

1-3 qt Lasso 4E or 4MT + ½-2 pt Lorox 4L + ¼-1 pt Lexone 4L or ¼-½ lb Lexone 75DF

1-2½ pt Dual BE + ½-2 pt Lorox 4L + ¼-1 pt Lexone 4L or ¼-½ lb Lexone 75DF

Three-way tank-mix. Intended to improve control of annual broadleaves while limiting the rate of Lexone; especially on marginal soils. Excellent general broadleaf control. Performance on velvetleaf primarily dependent on Lexone rate. If rates are reduced to lessen risk of injury, velvetleaf control diminishes. Rate of 1½ pt Lorox + Lexone at ½ pt 4L or ½ lb 75DF with usual rate of Dual or Lasso suggested for most soils. There is considerable risk of injury from the combined effect of Lorox and Lexone if full rates listed for each are used. Do not use on light, sandy soil or soil with a pH over 7.5.

PREEMERGENCE. Apply as soon as possible after planting. Do not incorporate or apply after crop emergence.

Modown (BIFENOX)

3-4 pt Modown 4F

PREEMERGENCE. Most useful in shallow preplant or preemergence combinations to improve control of certain broadleaves. Not suggested for use alone.

Treflan and Modown (TRITLURALIN AND BIFENOX)

Prowl and Modown (PENIMETHALIN AND BIFENOX)

1-2 pt Treflan 4E and 3-4 pt Modown 4F

1-3 pt Prowl 4E and 3-4 pt Modown 4F

Excellent control of annual grasses and very good control of certain small-seeded annual broadleaves such as pigweed and lambsquarters. Fair control of certain large-seeded annual broadleaves. Fair crop tolerance. Weed control and crop tolerance affected less by variations in soil type than for linuron or metribuzin; however, leaf burn and stunting can be serious if raindrops splash bifenox onto the emerging crop. Yields are usually not affected. Use higher rate for dense weed infestations on heavy soil. Rates of 1½ pt Treflan or 2 pt Prowl and 3 pt of Modown 4F per acre have been used in most SDSU tests. Note precautions in Treflan or Prowl section.

SPLIT PREPLANT INCORPORATED AND PREEMERGENCE. Incorporate normal rate or Treflan or Prowl before planting and apply Modown preemergence.
Modown + Lasso + Sencor or Lexone (BIFENOX + ALACHLOR + METRIBUZIN)

Modown + Dual + Sencor or Lexone (BIFENOX + METOLACHLOR + METRIBUZIN)

Treflan + Sencor or Lexone and Modown (TRIFLURALIN + METRIBUZIN AND BIFENOX)

Three-way combinations utilizing Modown and Sencor or Lexone in the mixture with another herbicide for grass control. Velvetleaf, sunflower, or cocklebur control primarily related to rate of metribuzin. Rates of metribuzin in the combination give adequate control of several annual broadleaves in two-way combinations. Rates of 2 qt Lasso or 2 pt Dual or 1 ½ pt Treflan per acre suggested for the grass herbicide used for most soils. Rates of Sencor or Lexone at ½-¾ pt 4L or 1/3-½ lb 75DF and 3 pt Modown per acre suggested for most soils.

SHALLOW PREPLANT INCORPORATED. Tank-mix. Lasso or Dual combination. Apply within 7 days of planting and incorporate into the top 1 inch of soil with a rotary hoe or other suitable equipment. Less risk of leaf malformation than for surface application.

SPLIT TANK-MIX PREPLANT INCORPORATED AND PREEMERGENCE. Treflan combinations. Incorporate a tank-mix of Treflan + Sencor or Lexone before planting and apply Modown preemergence. Some risk of leaf malformation.

Lorox (LINURON)

1-5 lb Lorox 50W or 1-5 pt Lorox 4L

PREEMERGENCE. Most useful in preemergence combinations to improve broadleaf control. Note safety and handling precautions. Minimum carrier is 20 gpa for ground equipment. Not suggested for use alone.

Sencor or Lexone (METRIBUZIN)

½-1 pt Sencor or Lexone 4L or ½-¾ lb Sencor or Lexone 75DF

Most useful in preplant or preemergence combinations to improve broadleaf control. Not suggested for use alone.

Surflan (ORYZALIN)

1-2 lb Surflan 75W or ¾-1½ qt Surflan 4AS

PREEMERGENCE. Chemically related to Treflan but does not require incorporation. Weed control has been less satisfactory than for Treflan. May be applied in fall or in spring directly to undisturbed stubble for no-till soybeans. Potential for use alone or in combination with other herbicides in reduced tillage systems will continue to be evaluated. May be tank-mixed at 1½ to 1¼ qt/A with Lorox, Sencor, Lexone, Dyanap, Modown, Goal, or Amiben. May be applied in liquid fertilizer carrier.

Amiben + Lorox (CHLORAMBEN + LINURON)

Amiben + Sencor or Lexone (CHLORAMBEN + METRIBUZIN)

PREEMERGENCE. Tank-mix. Limited data. More effective on annual broadleaves than annual grasses. Adjust rates for soil type. Will allow for reduced rates of metribuzin for small-seeded weeds like Russian thistle; however velvetleaf and sunflower control will not be maintained. May be applied in liquid fertilizer. Refer to section for Amiben, or sections for Lorox, Sencor, or Lexone combinations.
**Furloe + Lasso (CIPC + ALACHLOR)**

2-3 qt Furloe 4EC + 2-3 qt Lasso 4E or 4MT

PREEMERGENCE. Tank-mix. Furloe gives very good to excellent control of smartweed and wild buckwheat. Lasso gives very good to excellent control of annual grasses. Less effective on other small-seeded annual broadleaves. Does not control large-seeded annual broadleaves. Preemergence combinations better than preplant incorporated Furloe combinations. Use high rates for most soils. Very good crop tolerance. Minimum carrier is 5 gpa water. Refer to Lasso section.

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**Goal (OXYFLUORFEN)**

1½-2 pt Goal 2E

PREEMERGENCE. Goal is chemically related to Modown. Weed control and crop effects similar. Most effective on annual broadleaved weeds such as pigweed. Fair control of certain large-seeded broadleaves. Grass control is usually unsatisfactory. Crop tolerance is marginal. Leaf burn and temporary stunting frequently noted. Most emphasis in future will be for use in no-till soybeans. Crop tolerance is not associated with soil texture or pH factors.

**Goal + Lasso (OXYFLUORFEN + ALACHLOR)**

**Goal + Dual (OXYFLUORFEN + METOLACHLOR)**

1½-2 pt Goal 2E + 1½-2½ qt Lasso 4E or 4MT

PREEMERGENCE. Tank-mix. Refer to Goal alone. Provides good to excellent control of annual grasses and certain annual broadleaves. Velvetleaf or cocklebur control less consistent. Primary emphasis is for use in no-till systems.

**Premerge (DINOSEB)**

1 pt-2½ gal Premerge 3L

Contact herbicide. Follow handling precautions as it is highly toxic. Minimum carrier is 3 gpa for air and 30 gpa for ground.

PREEMERGENCE. Rates are 2 to 2½ gal/A Premerge. Erratic annual weed control. Short residual. Not for light soil.

EARLY POSTEMERGENCE. Rates are 2 to 3 qt/A Premerge. Apply when soybeans are in cotyledon stage but before first true leaves open. Timing is critical. Usually better control than preemergence. Emerged weeds only. Use low rate when temperature is over 75°F. Considerable risk of leaf burn.

LATE POSTEMERGENCE. Rates are 1 to 2 pt/A Premerge. Low rate for small weeds. Salvage treatment for cocklebur. Apply from first true leaves until bloom stage. Temporary leaf burn. Crop under stress may be permanently damaged. Use at grower’s risk. Minimum carrier is 3 gpa.

**Premerge + Lasso (DINOSEB + ALACHLOR)**

**Premerge + Dual (DINOSEB + METOLACHLOR)**

**Premerge + Amiben (DINOSEB + CHLORAMBEN)**

PREEMERGENCE. Tank-mix. Rates are 4 to 6 qt Premerge + 2 to 3 qt Lasso or 1½ to 2½ pt Dual 8E or 3 to 4 qt Amiben per acre. Refer to Premerge section.

EARLY POSTEMERGENCE. Tank-mix. Rates are 2 to 3 qt Premerge + 1½ to 3 qt Lasso or 1½ to 2½ pt Dual 8E or 3 to 4 qt Amiben per acre. Refer to Premerge section.
Dyanap (NAPTALAM + DINOSEB)

2-6 qt Dyanap 3L

Commercial premix. Contains 2 lb naptalam and 1 lb dinoseb per gallon. Poor to fair annual weed control. Usually used in combination with other herbicides.

PREEMERGENCE. Apply 6 qt/A Dyanap up to cracking stage. Some risk of crop injury with heavy rainfall.

POSTEMERGENCE. Apply 2 to 4 qt/A Dyanap in 8 to 10 gal of water after soybeans have second trifoliate leaf but before they are 20 inches tall. Use 10 gpa carrier if temperatures are under 80°F. Primarily for cocklebur. Fair sunflower and mustard control. High rate is for weeds up to 6 inches tall. Considerable risk of crop leaf burn and stunting. Risk is greater at temperature over 90°F. Do not apply when plants are wet. Use minimum of 40 psi pressure.

Dyanap + Lasso (NAPTALAM + DINOSEB + ALACHLOR)

Dyanap + Dual (NAPTALAM + DINOSEB + METOLACHLOR)

Dyanap + Surflan (NAPTALAM + DINOSEB + ORYZALIN)

4½-6 qt Dyanap 3L + 2 qt Lasso 4E or 4MT
4½-6 qt Dyanap 3L + 1½-2½ pt Dual BE
4½-6 qt Dyanap 3L + 1½-1¼ lb Surflan 75W or ½-1¼ qt Surflan 4AS

PREEMERGENCE. Tank-mix. Dyanap contains 2 lb naptalam + 1 lb dinoseb per gallon. Apply before soybeans reach cracking stage. Somewhat erratic. Slight improvement in short-term broadleaved control. Will improve control of cocklebur emerging at time of application. Refer to section for each herbicide.

Blazer + Butyrac 200 or Butoxone (ACIFLUORFEN + 2,4-DB)

1½-2 pt Blazer 2L + 2 oz Butyrac 200 or Butoxone 2L

POSTEMERGENCE. Tank-mix. Primarily for use in special situations where weeds exceed the maximum height for Blazer. The addition of 2,4-DB provides some improved control of cocklebur, ragweed, and pigweed up to 12 inches tall. Considerable soybean leaf and stem twisting and some yellowing can be expected. Some differential varietal tolerance to 2,4-DB has been reported. Do not add oil or surfactant. Do not treat plants under stress. Use maximum recommended rate of Blazer and 2 fl oz of Butyrac 200 or Butoxone per acre. Appears to have very limited potential for most field situations. Refer to Blazer section.

Basagran + Butyrac 200 (BENTAZON + 2,4-DB)

1½-2 pt Basagran 4L + 1/8 pt Butyrac 200

POSTEMERGENCE. Tank-mix. Primarily for improved control of annual morning glory, which escapes Basagran. Thorough coverage and early application required, for Basagran increases risk of injury from 2,4-DB portion. Corsoy, Amcor, and SRF 250 are reported to be more sensitive to 2,4-DB. Do not treat plants under stress. Do not add oil or surfactant. Appears to have very limited potential for most field situations. Refer to Basagran alone.

Rescue

Expect L + Butyrac 200 or Butoxone (NAPTALAM + 2,4-DB)

2-3 qt Rescue 2L

2-3 qt Alanap L 2L + 3-4 fl oz Butyrac 200 or Butoxone 2L

POSTEMERGENCE. Tank-mix. Or use commercial premix (Rescue) containing 2 lb Alanap L and .06 lb of 2,4-DB active per gallon. Primarily intended as a "rescue" treatment to control broadleaved annual weeds that cannot be controlled with other postemergence treatments. Most effective on cocklebur, sunflower, and marsh elder. Control has been somewhat variable; however weed growth and seed production have been reduced considerably when applied at proper stage. Cocklebur should be 10 to 36 inches or until early bloom; sunflower 12 inches through early bud, and marsh elder 12 inches through pollination. Activity is reduced if applied during low humidity, hot, dry conditions. Maximum effects on weeds usually apparent in 3 weeks. Rate of 2 to 3 qt/A of Rescue is equivalent to the tank-mix of 2 to 3 qt Alanap L + 3 to 4 fl oz of Butyrac 200 per acre. Use high rate for weeds over 10 to 12 inches tall. Add non-ionic surfactant or crop oil concentrate at 2 qt/100 gal solution. Apply after first bloom to midbloom. Leaf abnormalities or stunting may be increased with earlier application. Corsoy, Amcor, and SRF 250 are reported to be more sensitive to 2,4-DB. Spray boom should be 18 to 24 inches above weeds or crop. Minimum carrier is 10 gpa for ground or 5 gpa for air. Use 40 to 50 psi pressure to provide a fine spray with hollow cone nozzles. Do not apply within 60 days of harvest.
NO-TILL HERBICIDES

**Bronco (ALACHLOR + GLYPHOSATE)**

*3¼ - 5 qt Bronco 4E*

Commercial premix containing 2.6 lb alachlor (Lasso) + 1.4 lb glyphosate (Roundup) active per gallon. Intended to control emerged weeds in no-till situations. Excellent control of emerged annual grasses. Perennials may be suppressed. Lasso provides residual annual grass control but is dependent upon rainfall before weeds emerge. Bronco can be tank-mixed with Lorox, Lexone, or Sencor for improved annual broadleaf control. Do not apply after crop emergence.

**Roundup (GLYPHOSATE)**

Roundup is a non-selective, translocated, foliage applied herbicide used in no-till or reduced tillage systems, as a spot treatment for perennials, or in specialized application equipment. There is no soil residual. All emerged vegetation coming in contact with the herbicide will be damaged or killed.

NO-TILL or REDUCED TILLAGE SYSTEMS. Roundup may replace one tillage to control emerged weeds. It is used in combination with preemergence herbicides to provide residual weed control. Use lower rate for annual weeds under 6 inches tall and high rate for taller annuals. Minimum carrier is 5 gallons per acre. Several combination treatments are listed below.

Amount of product per acre, tank-mix (Liquid formulations are listed; however, an equivalent amount of other formulations may be used):

- 1-1½ qt Roundup + 2-3 qt Lasso + 1-3 pt Lorox
- 1-1½ qt Roundup + 1½-2½ pt Dual + 1-3 pt Lorox
- 1-1½ qt Roundup + 2-3 qt Lasso + ½-1 pt Sencor or Lexone
- 1-1½ qt Roundup + 1½-2½ pt Dual + ½-1 pt Sencor or Lexone
- 1-1½ qt Roundup + ½-1¼ qt Surflan + ½-1 pt Sencor or Lexone
- 1-1½ qt Roundup + ½-1¼ qt Surflan + 1-2 pt Lorox
- 1-1½ qt Roundup + 2-2½ pt Lasso + 4 qt Amiben
- 1-1½ qt Roundup + 2-2½ pt Dual + 4-6 pt Amiben

SPOT TREATMENT. Roundup may be used at 2 to 4 qt/A to control small patches of perennial weeds such as quackgrass or Canada thistle. It is usually applied with hand-held equipment. Use extreme caution to prevent drift. Crop contacted by spray or drift will be damaged or killed. Refer to label for mixing directions and precautions.

SPECIAL APPLICATION EQUIPMENT. Roundup used in special equipment gives very good control of volunteer corn or wild cane. Results with wild sunflower have been fair. Control of milkweed and hemp dogbane has been more erratic. A height differential is required so the taller weeds are treated over the top of the soybeans. Uniform weed emergence and sufficient height differential improve results. Equipment is usually operated at 3 to 5 mph. Do not add 2,4-D or other herbicides. Consult label directions for the equipment being used.

‘‘Recirculating Sprayers (RCS)’’ direct the spray across the top of the soybeans. Box types operate between the rows and broadcast types operate independent of row spacing. Spray not intercepted by the weeds is collected in a recovery chamber and goes back through the system. The RCS has been more effective than the rope wick for hemp dogbane and milkweed. The concentration of Roundup varies from 2 to 6 qt/per gallon of water. One gallon of Roundup will usually treat 16 to 20 acres. Equipment must be operated in a manner that minimizes droplet drift and ‘‘splash’’ effects.

‘‘Roller’’ applicators wipe the herbicide onto the taller weeds. The carpet covered roller is continually wetted with solution and rotates as it moves through the field. Some are equipped with electronic sensors that maintain proper roller wetness. Roller applicators avoid drift and splash problems. The Roundup to water ratio is 1 to 19 for corn and wild cane and 1 to 9 for broadleafed weeds. One gallon of Roundup usually treats 25 to 60 acres.

‘‘Rope Wick’’ applicators utilize segments of soft, braided nylon rope which serve as wicks. The rope ends are affixed through a hole into a 3- or 4-inch plastic pipe. The ropes remain wet by diffusion as they wipe the taller weeds. Variations of the wick applicator feature longer, diagonal ropes which are wetted from a supply tank. Wick applicators are inexpensive, efficient, and simple to operate. Drift and splash problems are essentially eliminated. Equipment must be operated to avoid ‘‘drips’’ from the ropes. The solution in the pipe or tank is mixed at a ratio of 1 gallon Roundup to 2 gallons of water. One gallon of Roundup will usually treat 50 to 100 acres.
Paraquat-Plus or Gramoxone (PARAQUAT)

1-4 pt Paraquat-Plus or Gramoxone 2L

HARVEST AID. Apply ½ to 1 pt/A paraquat when at least 65% of the seed pods have reached a mature color or when seed moisture is under 30%. The purpose is to dry weeds to facilitate harvest. Paraquat is the only desiccant labeled for use on soybeans that are to be used other than for seed for planting. Less effective on large kochia or Russian thistle than on other actively growing weeds. Contact treatment. Minimum carrier is 20 gpa for ground or 5 gpa for air. Add 1 qt X-77 spreader per 100 gal of solution. Do not graze treated soybean fields for 15 days after spraying, and remove livestock at least 30 days before slaughter. Follow handling precautions, as paraquat is highly toxic. Restricted Use pesticide.

TILLAGE Paraquat is a non-selective, contact herbicide which can be used to control emerged weeds at planting. It is used in combination with preemergence herbicides for residual control. Rates of 1 to 1½ pt/A paraquat are adequate for small weeds; the high rate is for larger weeds or dense stands. Add 1 to 2 pt X-77 spreader per 100 gal of solution. Minimum carrier is 20 gpa. Thorough coverage is very important. Refer to harvest aid section for precautions. Several combinations labeled for use with paraquat are listed below.

NO-TILL or REDUCED TILLAGE SYSTEMS. Paraquat is a non-selective, non-residual, contact herbicide which can be used to control emerged weeds at planting. It is used in combination with preemergence herbicides for residual control. Rates of 1 to 1½ pt/A paraquat are adequate for small weeds; the high rate is for larger weeds or dense stands. Add 1 to 2 pt X-77 spreader per 100 gal of solution. Minimum carrier is 20 gpa. Thorough coverage is very important. Refer to harvest aid section for precautions. Several combinations labeled for use with paraquat are listed below.

Amount of product per acre, tank-mix (Liquid formulations are listed; however, an equivalent amount of other formulations may be used. Add X-77 at the rate of 1 to 2 pt/100 gal of solution):

1-2 pt paraquat + 2-2½ qt Lasso + ½-1 pt Sencor or Lexone
1-2 pt paraquat + 1½-2½ pt Dual + ½-1 pt Sencor or Lexone
1-2 pt paraquat + 1-2½ pt Prowl + 1-2½ pt Lorox
1-2 pt paraquat + 1-2½ pt Prowl + ½-1 pt Sencor or Lexone
1-2 pt paraquat + 1½-2½ pt Dual + 1-3 pt Lorox
1-2 pt paraquat + 2-3 qt Lasso + 1-3 pt Lorox
1-2 pt paraquat + 2-2½ qt Lasso + 4 qt Amben
1-2 pt paraquat + 1½-2½ pt Dual + 4-6 qt Amben
2 pt paraquat + ½-1½ pt Surflan + ½-1 pt Sencor or Lexone
2 pt paraquat + ½-1½ pt Surflan + 1-2 pt Lorox

SPECIAL WEED PROBLEMS IN SOYBEANS

Annual Grasses (FOXTAIL, BARNYARDGRASS, SANDBUR)

TREFLAN or PROWL
Preplant incorporated. Equal performance at adjusted rates. Excellent control of several foxtail species. Consistent performance. Good late season control. Fair to good on sandbur at higher rates. Refer to section for each herbicide.

LASSO or DUAL
Preemergence or shallow preplant incorporated. Very good to excellent control of several foxtail species. Preemergence application with adequate rainfall provides best control available. Late season yellow or bristly foxtail may escape. Inconsistent on sandbur. May be tank-mixed with other herbicides without significantly reducing grass control. Refer to section for Lasso or Dual.

Small Seeded Annual Broadleaves (PIGWEED, LAMBSQUARTERS, KOCHIA, SMARTWEED)

SENCOR or LEXONE
Preemergence or preplant incorporated. Excellent control. Very good on mustard. Use with other herbicides. Rates as low as ¼ lb/A active metribuzin used with other herbicides frequently give adequate control of light infestations. Use higher rates for best control. Less crop tolerance than other treatments on variable, high pH, or light soils. Refer to sections for Sencor or Lexone combinations.

LOROX
Preemergence. Use with other herbicides. Very good control. Slightly less risk of crop injury than for metribuzin on variable, high pH, or light soils. Refer to sections for Lorox combinations.

MODOWN
Preemergence or very shallow preplant incorporated. Use with other herbicides. Excellent on pigweed. Good control of some other broadleaves. Crop tolerance affected less by soil factors; however, leaf burn and stunting can be serious. Harrowing preemergence treatments reduces leaf burn and stunting. Refer to sections for Modown combinations.
AMIBEN
Preemergence preferred. Good to very good control. Fair on mustard. Good crop tolerance on variable soils. Use maximum rate for combination treatments for best control. Refer to Amiben section.

Velvetleaf, Venice Mallow

BASAGRAN
Postemergence. Very good control. Use 1½ pt/A for weeds up to 2 inches and 1 qt/A for weeds up to 4 inches tall. Larger weeds only partially controlled. Crop oil helpful. Weeds emerging later will escape. Best choice for light, variable, or high pH soils. Refer to Basagran section.

SENCOR or LEXONE
Split preplant incorporated tank-mix with Treflan, Prowl, Lasso, or Dual and additional Sencor or Lexone preemergence application. Allows for better crop tolerance with high Sencor rates. Best soil-applied treatment for velvetleaf. Refer to Sencor or Lexone split tank-mix preplant incorporated and preemergence sections.

Preemergence tank-mix or overlay with other herbicides preferred. Very good control. Use as tank-mix with other herbicides or as an overlay for preplant incorporated treatments. Follow precautions for soil factors. Use ½ lb/A active metribuzin if soil type allows. Rate of 3/8 lb/A active metribuzin applied in combination with preplant incorporated herbicides gives slightly less control except under extremely dry conditions. Refer to sections for Sencor or Lexone combinations.

AMIBEN
Preemergence for Venice mallow. Has provided good to very good control in SDSU tests. Use full rate. Refer to Amiben section.

Wild Sunflower

BASAGRAN
Best results are with split application using 1½ pt when weeds are 2 inches and 1 pt 10-14 days later. Weeds must be less than 4 to 6 inches for single application of 1 qt/A.

SEN COR or LEXONE
Preemergence. Used as a tank-mix or overlay treatment. Fair control. Use maximum rate for soil type. Most effective soil-applied treatment. Note soil factor precautions in sections for Sencor or Lexone combinations.

Cocklebur

BASAGRAN
Postemergence. Excellent control. Use 1½ pt/A for weeds up to 6 inches and 1 qt/A for weeds up to 8 inches tall. Rescue treatment for larger cocklebur. Refer to Basagran section.

Black Nightshade

SONALAN and DUAL or LASSO
Best control expected. Tank-mix shallow incorporated or apply Sonalan preplant incorporated and Dual or Lasso preemergence. Use 3-3½ pt/A Sonalan and usual Dual or Lasso rate.

LASSO or DUAL
Shallow preplant incorporated or preemergence. Good control. Use maximum rate for soil type. May be used with other herbicides without reduced control if the Lasso or Dual rate is not reduced. Refer to section for Lasso or Dual. Layby cultivation very helpful.

BLAZER
Postemergence. Good to very good control. Apply when weeds are under 4 inches tall. Risk of leaf burn. Refer to Blazer section.

Wild Cane

TREFLAN
Preplant incorporated. Good control. Use 2-2½ pt/A on most medium and heavy soils. Incorporate thoroughly. Cultivate crop. Refer to Treflan section.

PROWL
Preplant incorporated. Good control. Use 2 to 3 pt/A on most medium and heavy soils. Incorporate thoroughly. Cultivate crop. Refer to Prowl section.

VERNAM or REWARD
Preplant incorporated. Fair to good control. Use 3 pt/A on most soils. Use with cultivation. Refer to Vernam section.
<table>
<thead>
<tr>
<th>Product</th>
<th>Application</th>
<th>Control Rate</th>
<th>Treatment Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LASSO</strong></td>
<td>Preplant incorporated and preemergence</td>
<td>Fair to good</td>
<td>Apply 4 qt/A shallow preplant incorporated and apply 2 qt/A preemergence.</td>
</tr>
<tr>
<td><strong>FUSILADE</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply ¼ pt/A when wild cane is 6 to 12 inches. Refer to Fusilade section.</td>
</tr>
<tr>
<td><strong>POAST</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply 1 pt/A when wild cane is 6 to 18 inches. Refer to Poast section.</td>
</tr>
<tr>
<td><strong>ROUNDUP</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply in recirculating sprayer, roller, or rope wick applicators. Refer to Roundup section.</td>
</tr>
<tr>
<td><strong>Volunteer Corn</strong></td>
<td>Preplant incorporated</td>
<td>Excellent</td>
<td>Apply 1 pt/A when volunteer corn is 6 to 18 inches. Refer to Poast section.</td>
</tr>
<tr>
<td><strong>FUSILADE</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply ¼ pt/A when volunteer corn is 12 to 18 inches. Refer to Fusilade section.</td>
</tr>
<tr>
<td><strong>HOELON</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply 2-3½ pt/A after all corn has emerged but before corn is too tall to allow good coverage in the whorl. Refer to Hoelon section.</td>
</tr>
<tr>
<td><strong>ROUNDUP</strong></td>
<td>Postemergence</td>
<td>Excellent</td>
<td>Apply in recirculating sprayer, roller, or rope wick applicators. Refer to Roundup section.</td>
</tr>
<tr>
<td><strong>Buffalo Bur</strong></td>
<td>Preplant incorporated</td>
<td>Partial</td>
<td>Apply when weeds are under 4 inches tall. Risk of leaf burn. Refer to Blazer section.</td>
</tr>
<tr>
<td><strong>Yellow Nutsedge</strong></td>
<td>Preplant incorporated</td>
<td>Good to very good</td>
<td>Preplant incorporated preferred. Thorough tillage prior to planting helpful. Good to very good control. Dual gives slightly better control. Use maximum rate possible. Refer to shallow preplant incorporated section for Dual or Lasso.</td>
</tr>
<tr>
<td><strong>VERNAM</strong></td>
<td>Preplant incorporated</td>
<td>Fair to good</td>
<td>Preplant incorporated. Incorporate immediately. Fair to good control. Must use maximum rate for soil type. Refer to Vernam section.</td>
</tr>
<tr>
<td><strong>REWARD</strong></td>
<td>Postemergence</td>
<td>Fair to good</td>
<td>Postemergence. Apply ¾ to 1 qt/A when weeds are 6 to 8 inches tall. Retreat in 7 to 10 days if necessary. Good control. Crop oil helpful. Useful for spot treatment or as a followup after other treatments. Refer to Basagran section.</td>
</tr>
<tr>
<td><strong>Canada Thistle</strong></td>
<td>Postemergence</td>
<td>Fair to good</td>
<td>Postemergence. Fair to good burn to topgrowth. Apply 1 qt/A when weeds are 8 inches tall to bud stage. Retreat 7 to 10 days later if necessary. Crop oil helpful. Refer to Basagran section.</td>
</tr>
<tr>
<td><strong>BLAZER</strong></td>
<td>Postemergence</td>
<td>Fair</td>
<td>Postemergence, Fair burn of topgrowth. Refer to Blazer section.</td>
</tr>
</tbody>
</table>
### Herbicide Cost

The table below gives the cost per acre for several herbicide treatments, based on average prices for previous season or current season price information available. Each herbicide and selected combinations are included. Cost for low and high rates are listed. Prices vary according to location and quantity. Consult your local dealer for actual prices.

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>AMT. OF PRODUCT/A</th>
<th>HERBICIDE</th>
<th>COST/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiben 1.8L</td>
<td>1-1½ gal</td>
<td>$16.60-24.90</td>
<td></td>
</tr>
<tr>
<td>Basagran 4L</td>
<td>1½-2 pt</td>
<td>16.10-21.50</td>
<td></td>
</tr>
<tr>
<td>Blazer 2L</td>
<td>1½-2 pt</td>
<td>14.00-18.75</td>
<td></td>
</tr>
<tr>
<td>Butyrac 2L</td>
<td>1/8 pt</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>Dual 8E</td>
<td>1½-3 pt</td>
<td>9.75-19.50</td>
<td></td>
</tr>
<tr>
<td>Dyanap</td>
<td>2-6 qt</td>
<td>5.40-16.10</td>
<td></td>
</tr>
<tr>
<td>Furloe 4E</td>
<td>2-3 qt</td>
<td>11.60-17.40</td>
<td></td>
</tr>
<tr>
<td>Fusilade 4E</td>
<td>¼-¼ pt</td>
<td>9.20-18.45</td>
<td></td>
</tr>
<tr>
<td>Goal</td>
<td>1½-2 pt</td>
<td>12.20-16.25</td>
<td></td>
</tr>
<tr>
<td>Hoelon 3E</td>
<td>2-3½ pt</td>
<td>11.75-20.50</td>
<td></td>
</tr>
<tr>
<td>Lasso 4E</td>
<td>2-3½ qt</td>
<td>11.00-19.25</td>
<td></td>
</tr>
<tr>
<td>Lorox 4L</td>
<td>1-5 pt</td>
<td>5.55-27.75</td>
<td></td>
</tr>
<tr>
<td>Modown 4F</td>
<td>3-4 pt</td>
<td>8.70-11.60</td>
<td></td>
</tr>
<tr>
<td>Paraquat, Gramoxone 2L</td>
<td>1-4 pt</td>
<td>5.60-22.50</td>
<td></td>
</tr>
<tr>
<td>Poast 1.5E</td>
<td>½-2½ pt</td>
<td>6.55-32.80</td>
<td></td>
</tr>
<tr>
<td>Premerge 3L</td>
<td>½-2½ qt</td>
<td>1.40-6.90</td>
<td></td>
</tr>
<tr>
<td>Prowl 4E</td>
<td>1-3 pt</td>
<td>2.95-8.75</td>
<td></td>
</tr>
<tr>
<td>Rescue 2L</td>
<td>2-3 qt</td>
<td>6.25-9.40</td>
<td></td>
</tr>
<tr>
<td>Reward 6E</td>
<td>2½-4 pt</td>
<td>6.40-9.60</td>
<td></td>
</tr>
<tr>
<td>Roundup 3L</td>
<td>1-1½ qt</td>
<td>21.25-31.90</td>
<td></td>
</tr>
<tr>
<td>Sencor/Lexone 4L</td>
<td>½-1 pt</td>
<td>6.05-12.10</td>
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</tr>
<tr>
<td>Sonalan 3E</td>
<td>1½-3½ pt</td>
<td>4.70-10.95</td>
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</tr>
<tr>
<td>Surflan 75W</td>
<td>1-2 lb</td>
<td>11.50-23.00</td>
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</tr>
<tr>
<td>Treffan 4E</td>
<td>1-2 pt</td>
<td>3.45-6.90</td>
<td></td>
</tr>
<tr>
<td>Vernam 7E</td>
<td>2½-3½ pt</td>
<td>7.50-11.25</td>
<td></td>
</tr>
<tr>
<td>Sonalan + Dual</td>
<td>1¼-3 pt + 1½-3 pt</td>
<td>13.65-28.90</td>
<td></td>
</tr>
<tr>
<td>Sonalan + Lasso</td>
<td>1¼-3 pt + 2-4 qt</td>
<td>14.90-31.35</td>
<td></td>
</tr>
<tr>
<td>Sonalan + Amiben</td>
<td>1¼-3 pt + 4-6 qt</td>
<td>20.50-34.25</td>
<td></td>
</tr>
<tr>
<td>Sonalan &amp; Lorox</td>
<td>1¼-3 pt &amp; 1-5 pt</td>
<td>9.45-17.10</td>
<td></td>
</tr>
<tr>
<td>Sonalan &amp; Sencor/Lexone</td>
<td>1¼-3 pt + ½-1 pt</td>
<td>10.00-21.50</td>
<td></td>
</tr>
<tr>
<td>Lasso + Amiben</td>
<td>2½-3½ pt + 1 pt</td>
<td>27.60-30.35</td>
<td></td>
</tr>
<tr>
<td>Lasso + Sencor/Lexone</td>
<td>2-3 pt + ½-1 pt</td>
<td>17.05-26.80</td>
<td></td>
</tr>
<tr>
<td>Lasso + Lorox</td>
<td>2-3 pt + 1-2 pt</td>
<td>16.55-27.60</td>
<td></td>
</tr>
<tr>
<td>Lasso + Modown</td>
<td>2½-3½ pt + 1 pt</td>
<td>18.25-28.10</td>
<td></td>
</tr>
<tr>
<td>Lasso + Lorox + Lexone</td>
<td>1-3 pt + 1½-2 pt + ¼-1 pt</td>
<td>10.40-39.70</td>
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</tr>
<tr>
<td>Lasso + Modown + Sencor/Lexone</td>
<td>2½-3½ pt + 1½-3 pt + ½-1 pt</td>
<td>27.00-37.50</td>
<td></td>
</tr>
<tr>
<td>Dual + Amiben</td>
<td>1½-2½ pt + 4 qt</td>
<td>26.35-32.85</td>
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</tr>
<tr>
<td>Dual + Sencor/Lexone</td>
<td>1½-2½ pt + ½-1 pt</td>
<td>15.80-28.35</td>
<td></td>
</tr>
<tr>
<td>Dual + Lorox</td>
<td>1½-2½ pt + 1-2 pt</td>
<td>15.50-27.35</td>
<td></td>
</tr>
<tr>
<td>Dual + Modown</td>
<td>1½-3½ pt + 2½-4 pt</td>
<td>17.00-31.10</td>
<td></td>
</tr>
<tr>
<td>Dual + Amiben + Sencor/Lexone</td>
<td>1½-3 pt + 4-6 qt + ½-1 pt</td>
<td>32.40-56.50</td>
<td></td>
</tr>
<tr>
<td>Treffan + Amiben</td>
<td>1-2 pt + 4-6 qt</td>
<td>21.75-31.75</td>
<td></td>
</tr>
<tr>
<td>Treffan + Sencor/Lexone</td>
<td>1-2 pt + 1½-1 pt</td>
<td>9.50-19.00</td>
<td></td>
</tr>
<tr>
<td>Treffan + Lorox</td>
<td>1-2 pt + 1½-2 pt</td>
<td>9.00-18.00</td>
<td></td>
</tr>
<tr>
<td>Treffan + Amiben + Sencor/Lexone</td>
<td>1-2 pt + 4-6 qt + ½-1 pt</td>
<td>26.10-43.90</td>
<td></td>
</tr>
<tr>
<td>Prowl + Amiben</td>
<td>1½-2½ pt + 4 qt</td>
<td>21.00-24.00</td>
<td></td>
</tr>
<tr>
<td>Prowl + Sencor/Lexone</td>
<td>1½-2½ pt &amp; ½-1 pt</td>
<td>10.50-19.50</td>
<td></td>
</tr>
<tr>
<td>Prowl + Lorox</td>
<td>1½-2½ pt &amp; 1-2 pt</td>
<td>10.00-18.50</td>
<td></td>
</tr>
<tr>
<td>Basagran + Blazer</td>
<td>1-2 pt + 1½-2 pt</td>
<td>20.10-40.20</td>
<td></td>
</tr>
<tr>
<td>Vernam + Treffan + Sencor/Lexone</td>
<td>2½-3½ pt + 1 pt + ½-¾ pt</td>
<td>17.00-23.75</td>
<td></td>
</tr>
<tr>
<td>Poast + Blazer</td>
<td>½-2½ pt + 1½-2 pt</td>
<td>20.55-51.55</td>
<td></td>
</tr>
<tr>
<td>Poast + Basagran</td>
<td>½-2½ pt &amp; 1½-2 pt</td>
<td>22.65-54.30</td>
<td></td>
</tr>
<tr>
<td>Poast + Basagran + Blazer</td>
<td>½-3½ pt + 1-2 pt + 1-2 pt</td>
<td>30.00-89.50</td>
<td></td>
</tr>
<tr>
<td>Poast + Basagran + Blazer</td>
<td>½-2½ pt &amp; 1-2 pt + 1½-2 pt</td>
<td>26.70-73.00</td>
<td></td>
</tr>
<tr>
<td>Fusilade &amp; Blazer</td>
<td>¼-½ pt &amp; 1½-2 pt</td>
<td>23.20-37.20</td>
<td></td>
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</table>