

STORAGE AND DISPOSAL

Do not contaminate water, feed or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty containers. Pesticides, spray mixture or residue that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place away from water supplies. **CONTAINER DISPOSAL:** Triple rinse (or equivalent) and dispose in an incinerator or landfill approved for pesticide containers, or bury in a safe place. Consult Federal, State or Local Disposal Authorities for approved alternative procedures such as limited open burning.

DIRECTIONS FOR USE

IMPORTANT: Read the entire Directions for Use and the Conditions of Sale and Warranty before using this product.

CONDITIONS OF SALE AND WARRANTY

The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of GRIFFIN or the Seller. All such risks shall be assumed by the Buyer.

GRIFFIN warrants that the product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. GRIFFIN makes no other express or implied warranty of Fitness or Merchability or any other express or implied warranty. In no case shall GRIFFIN or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product. GRIFFIN and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of GRIFFIN.

GENERAL INFORMATION

This herbicide controls many annual broadleaf and grass weeds in corn, sorghum, sugarcane, pineapple, and certain other crops specified on this label. It is also effective in noncrop areas and industrial areas for control of most annual and many perennial broadleaf and grass weeds. This product may be applied before or after weeds emerge.

When the use directions give a range of rates, use the lower rate or the higher rate on fine-textured soil and soil low in organic matter.

Since this product acts mainly through root absorption, its effectiveness in measure to move it into the root zone. If weeds develop, a shallow cultivation or rotary hoeing will generally result in weed control.

This product is noncorrosive to equipment and metal surfaces, nonflammable, and has low electrical conductivity.

Avoid using where adjacent desirable trees, shrubs or plants might be injured.

Failure to follow precautions may result in crop injury. Store in a dry place.

APPLICATION PROCEDURES

General Application: For uniform distribution, use fan-type nozzles. Screens in nozzles and in suction and in line strainers should be no finer than 80-mesh. Use a pump with capacity to (1) maintain 35-40 psi at the nozzles, and (2) provide sufficient agitation in tank to keep mixture in suspension. Unless otherwise specified, use a minimum of 10 gal of spray mixture. A for all pre-emergence, post-emergence, and post-emergence applications (with or without oil or surfactant).

For band applications, calculate amount to be applied: per acre as follows:

band width in inches	x	broadcast rate	amount needed
row width in inches		per acre	per acre of field

Aerial application: Use only where broadcast applications are specified. Apply a minimum of 1 gal of water for each 1.15 lb applied per acre. For post-emergence treatments on corn and sorghum, apply recommended rate in a minimum of 2 gal of water/A. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

Do not apply directly to humans or animals. Although it is unnecessary for flagmen or loaders to wear special protective clothing or equipment, they should avoid inhalation of dust or spray mist and prolonged contact with skin. Flagmen and loaders should wash thoroughly before eating and at the end of each day's operation.

Application in water or liquid fertilizer: Nitrogen solution or complete liquid fertilizer may replace all or part of the water as a carrier for pre-emergence or pre-plant application on corn and sorghum. Check the compatibility of this product with liquid fertilizer and/or nitrogen solution before use. Do not apply in liquid fertilizers after corn or sorghum emerges as crop injury may occur.

Application in water plus emulsifiable oil or oil concentrate: Adding emulsifiable oil or oil concentrate to post-emergence water-based spray on corn and sorghum may improve weed control. However, under certain conditions, the use of either type of oil may seriously injure crop. To minimize this possibility, observe the following directions:

Use a crop oil designated for use with this product containing 1.2% suitable emulsifier, or a suitable crop oil concentrate designed for use with this product and containing not more than 20% emulsifier or surfactant blend. Emulsifiable oil and oil concentrate contaminated with water or other materials can cause compatibility problems and/or crop injury.

Mixing procedures - oil seeds: (1) Be sure sprayer is clean and not contaminated with 2,4-D or other materials, as crop injury or sprayer clogging may result. (2) Fill tank 1/2 to 3/4 full with clean water, fill 1/4 to 1/2 full with nitrogen solution or complete liquid fertilizer. (3) Start agitation. (4) Pour product directly from bag into tank. (5) Add emulsifiable oil, or oil concentrate. (6) Finish filling tank with water, nitrogen solution, or liquid fertilizer. (7) Empty tank as completely as possible before refilling to prevent buildup of oil or emulsifiable concentrate residue in tank. Maintain agitation to avoid separation of other materials from water, nitrogen solution, or liquid fertilizer remaining in tank. (8) If an oil or oil concentrate film starts to build up in tank, drain it, and clean with strong detergent solution or solvents. (9) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent. (10) For liquid nitrogen or liquid fertilizer, use suction screens of 18 mesh or coarser.

DIRECTIONS FOR USE

CRAB: Apply before planting, at planting, or after planting using 1.1-4.4 lb/A as indicated in the directions below for control of many annual broadleaf and grass weeds including barnyardgrass, witchgrass (*Panicum capillare*), yellow foxtail, green foxtail, wild oats, large (heavy) crabgrass, giant foxtail, velvetleaf (butterweed), morningglory, lambquarters, pigweed, ragweed, nightshade, purslane, and mustard.

Preplant (Broadleaf and grass control): Broadcast in spring after plowing, at rate in Table 1. Apply before, during, or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation. For best results, apply within two weeks before planting.

Post-emergence (Broadleaf and grass control): Apply during or shortly after planting before weed emergence, at rate in Table 1.

Post-emergence (Broadleaf and grass control): Apply before weeds exceed 1.5 inches in height, at rate in Table 1.

Table 1. Broadleaf and Grass Weed Control on Corn*		Broadcast rate - A
Soil texture		
COARSE		
Sand, loamy sand, sandy loam		2.2 lb
MEDIUM		
Loam, silt loam, silty clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter		2.6 lb
FINE		
Loam, silt loam, silty clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with medium to high organic matter, and clay (including the dark green seeds of the Corn Belt)		3.3 lb
Peat, muck, and high organic clay (apply post-emergence only)		3.3 lb

*Broadleaf control (western CO, western AS, western NE, NM, OK, Pan Handle, west TX, and eastern WY): In sand loam, mid to strongly alkaline soil, and all recently leveled soil, apply no more than 1.3 lb/A either preplant or post-emergence. Control many broadleaf weeds, including pigweed, lambquarters, nightshade, purslane, and tocoha. On other soils in these areas, apply rate in Table 1 for broadleaf and grass control.

Lay-by treatment (Broadleaf and grass control): Apply 1.1-2.2 lb/A in a minimum of 10 gal of water or nitrogen solution before weeds are 1.5 inches tall and corn is 20-30 inches tall. When using nitrogen solutions, direct spray to lower 3-4 inches of corn stalks to avoid foliage injury. Maintain agitation in spray tank during application.

Post-emergence with emulsifiable oil or oil concentrate in water: Broadleaf and grass control: Apply 2.2 lb/A after weed emergence, but before weeds reach 1.5 inches in height. Add 1 gal of emulsifiable oil or oil concentrate/A for ground application and 0.5 gal/A for aerial application. Add 1 qt of oil concentrate/A for ground application.

Broadleaf control: Apply 1.3 lb/A for control of many broadleaf weeds, including annual morningglory, cocklebur, lambquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Add 1 gal of emulsifiable oil or oil concentrate/A for ground application and 0.5 gal/A for aerial application. Add 1 qt of oil concentrate/A for ground application. Apply before pigweed and lambquarters reach 6 inches in height and before all other weeds reach 4 inches in height. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

Precautions for applications with emulsifiable oil or oil concentrate in water: (1) Do not apply when crop is under stress from prolonged cold, wet weather, poor fertility, or other factors, or when crop is wet and succulent from recent rains, as crop injury may occur. (2) Inbred lines or any breeding stock may be severely injured by applications with emulsifiable oil or oil concentrate. (3) Adding other insecticides, herbicides, liquid fertilizers, or other materials is not recommended, because they may cause compatibility problems or crop injury. (4) Store and handle emulsifiable oil or oil concentrate carefully. Do not contaminate with even a small amount of water may not emulsify properly when added to the tank. (5) Do not make more than one application per season except as recommended for control of yellow nutsedge and Canada thistle.

Center pivot sprinkler application:

Pre-emergence or post-emergence (Co., KS, NE, SD, and WY): Apply with irrigation water either after planting before corn and weeds emerge, or after corn emergence, but before lay-by (20-30 inches) and before weeds exceed 1.5 inches in height, at rates in Table 1. Prepare mixture with minimum ratio of 1 part product to 1 part water. Injecting a larger volume of a more dilute slurry per hour will assure more accurate calibration of metering equipment. Maintain sufficient agitation to keep herbicide in suspension. Meter slurry into irrigation water during entire period. Apply in 1/2 inch of water. Use the lower volume on coarser textured soils, the higher volume on finer textured soils. More than 1 inch of water may reduce weed control by moving herbicide below the effective zone in the soil. Inject dilute slurry into system through a positive displacement pump.

Refer to supplemental literature published by GRIFFIN for more information on calibrating.

Precautions: (1) Apply only through irrigation systems containing anti-siphon and check valves to prevent contamination of well during shutdown and overflow of solution tank. (2) Inject ahead of any right angle turn in the main line to insure adequate mixing. (3) Chemical injection pumps and water pumps must have interlocking controls to insure simultaneous shutoff. (4) Application when dirt may occur from sandy conditions, when system joints and connections are leaking, or when nozzles are not provided uniform distribution may cause crop injury. (5) Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

Problem weeds:

Yellow nutsedge and Canada thistle: This product will control yellow nutsedge (*Cyperus esculentus*) and Canada thistle (*Cirsium arvense*) when applied according to directions. For best results, apply each year until yellow nutsedge or Canada thistle is eliminated or reaches a level of infestation where neither weed is a problem. If yellow nutsedge or Canada thistle regrow following last application, cultivate once.

Alternative methods of use for control of yellow nutsedge and Canada thistle are listed below in order of preference. If other weed species, including annual grasses, are also expected, use alternative 2, 3, 5, or 6.

- Apply 2.2 lb plus 1 gal of emulsifiable oil or 1 qt of oil concentrate/A after crop and yellow nutsedge or Canada thistle emerge, but before yellow nutsedge reaches a height of 3 inches or Canada thistle reaches a height of 6 inches. Repeat application before lay-by (20-30 inches), 10-20 days after the first application.
- Apply 2.2 lb/A pre-plant. Follow with an application of 2.2 lb plus 1 gal of emulsifiable oil or 1 qt of oil concentrate/A after corn and weeds emerge, but before yellow nutsedge reaches a height of 3 inches (yellow nutsedge control only).
- Apply 2.2 lb/A during or shortly after planting, but before crop or weed emergence. Follow with an application of 2.2 lb plus 1 gal of emulsifiable oil or 1 qt of oil concentrate/A after corn and weeds emerge, but before yellow nutsedge reaches a height of 3 inches or Canada thistle reaches a height of 6 inches.
- Apply 4.4 lb plus 1 gal of emulsifiable oil or 1 qt of oil concentrate/A after crop emerges, but before lay-by (20-30 inches) and after yellow nutsedge and Canada thistle emerge, but before yellow nutsedge is 3 inches tall or Canada thistle reaches 6 inches tall.
- Apply 4.4 lb/A pre-plant (yellow nutsedge control only).
- Apply 4.4 lb/A during or shortly after planting, but before crop or weed emergence (yellow nutsedge control only).

Note: Do not use alternative 1, 2, 3, or 4 when corn is wet or under stress. See "Precautions for applications with emulsifiable oil or oil concentrate in water" for additional directions.

Quickgrass control on land going into corn production:

Sprinkler application: Broadcast 2.2 lb/A in fall or spring. Plow 1-3 weeks later. Apply a second application at 2.2 lb/A in spring before, during, or after planting but before weeds are 1.5 inches high. This split application will control quickgrass and most annual broadleaf and grass weeds.

Single application: Broadcast 3.3-4.4 lb/A in fall or spring. Plow 1-3 weeks later.

Precautions for all applications to corn: (1) Do not apply more than 4.4 lb/A of this product per year. (2) Following harvest, plow (moldboard or disk plow) and thoroughly till soil in fall or spring to minimize possible injury to rotational spring seeded crops, regardless of rate used.

Note for all applications to corn: Do not graze or feed forage from treated areas for 21 days following application.

Rotational crops: (1) Do not rotate to any crop except corn or sorghum until the following year, as injury may occur. (2) If applied after June 10, do not rotate with crops other than corn or sorghum the next year, as crop injury may occur. (3) If used at a rate higher than 3.3 lb/A or equivalent band application rate, a crop of untreated corn or sorghum should precede the next rotational crop. (4) In the High Plains and intermountain areas of the West where rainfall is sparse and erratic, or where irrigation is required, use only when corn or sorghum is to follow corn or sorghum or when a crop of untreated corn or sorghum is to precede other rotational crops. (5) In eastern parts of the Dakotas, KS, western MN, and NE, do not rotate to soybeans if the rate applied to corn or sorghum was more than 2.2 lb/A or equivalent band application rate, as soybean injury may occur. (6) Injury may occur to soybeans planted in north central and northwest IA, south central and southwest MN, northeast NE, southeast SD, and other areas the year following application on soils having a calcareous surface layer. (7) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring seeded small grains, or small seeded legumes and grasses the year following application, as injury may occur.

SORGHUM AND SORGHUM-SUDAN HYBRIDS (Grain and Forage Types): Apply before planting, at planting, or after planting, as indicated in the directions below. See Corn section for weeds controlled.

Preplant (Broadleaf and grass control): Apply in spring after plowing at rate in Table 1. Apply before, during, or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation. For best results, apply within two weeks before planting.

GRIFFIN

Atrazine 90

DRY FLOWABLE HERBICIDE

For season-long weed control in corn and sorghum.
For weed control in certain other crops; in noncrop areas; and industrial sites.

ACTIVE INGREDIENTS:

Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine	85.5%
RELATED COMPOUNDS	4.5%
INERT INGREDIENTS:	10.0%
TOTAL	100.0%

Griffin Atrazine 90 Dry Flowable is a water dispersible granule

CAUTION:
KEEP OUT OF REACH OF CHILDREN

Harmful if swallowed. Avoid contact with eyes, prolonged contact with skin, inhalation of dust, and contamination of food and feed.

Do not contaminate domestic or irrigation water supplies or lakes, streams, or ponds.

Do not reuse container. Destroy when empty.

GRIFFIN CORPORATION
VALDOSTA, GEORGIA 31601
NET CONTENTS _____

E.P.A. Reg. No 1812-253
E.P.A. Est. No 1812-GA-3



Preemergence (Broadleaf and grass control): Apply during or shortly after planting, before weed seeds emerge or shortly after.

Table 4 Preplant and Preemergence Broadleaf and Grass Weed Control in Sorghum*

Soil texture	Organic matter	Broadleaf rate - A
COARSE		
Sand, loamy sand, sandy loam	0-15%	DO NOT USE except for preemergent use on interbedded sorghum in AZ and CA
MEDIUM AND FINE		
loam, silty loam, silty clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay, clay	Over 15%	2.226 lb

*Do not apply preplant in AL, AR, FL, GA, LA, MS, NC, NM, OK, SC, TN, or TX. Do not apply preemergence in NM, OK, or TX, except in northeast OK and Texas coast.

In case of planting failure, sorghum may be replanted. Do not make a second broadcast application, as injury may occur. If originally applied in a band and sorghum is replanted in untreated row middles, this product may be applied in band to the seed and planting.

Preemergence broadleaf weed control in furrow irrigated bedded sorghum (AZ and CA only): For preemergence control of many broadleaf weeds including groundcherry, lambquarters, morningglory, mustard, pigweed, and purslane, apply 0.9-1.3 lb/A after bed preparation during or after planting, but before sorghum and weeds emerge and before the first furrow irrigation. Follow with several regular irrigations, making sure to thoroughly wet all soil.

Precautions for preemergence application to furrow irrigated bedded sorghum in AZ and CA: To avoid possible sorghum injury, do not use on sand or loamy sand soil or on sorghum planted in furrows. Applications to sorghum growing on alkali soils or where cuts, fills, or erosion have exposed calcareous or alkali subsoils may cause crop injury. In case of crop failure, do not replant sorghum for 8 months following application. Corn may be planted immediately.

Postemergence (Broadleaf and grass control): Apply at rate in Table 5 before weeds exceed 1.5 inches in height. Apply up to 10 days after.

Table 5 Postemergence Broadleaf and Grass Weed Control in Sorghum

Soil texture	Minimum sorghum height at treatment	Broadleaf rate - A
Sand or loamy sand	DO NOT USE	
See directions for postemergence broadleaf weed control		
Sandy loam	Completely emerged	2.226 lb
Silt loam to sandy clay loam	6 inches	2.226 lb
Oron and Pullman clay soil	Completely emerged	3.3 lb
Silty clay loam and finer textured soil	Completely emerged	3.3 lb

Post emergent broadleaf weed control with emulsifiable oil or oil concentrate in water: Apply 1.3 lb/A for control of many broadleaf weeds, including annual morningglory, cockspur, lambquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Apply before weeds and lambquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and desert regions of AZ and CA, apply when sorghum is 6-10 inches in height, but before it reaches leaf stage. In all other areas, apply after sorghum reaches the 3-leaf stage. Add 1 gal of emulsifiable oil/A for ground application and 0.5 gal/A for aerial application. Add 1 qt. of oil concentrate/A for ground application. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

Precautions for applications with emulsifiable oil or oil concentrate in water: See Precautions for applications with emulsifiable oil or oil concentrate in water in Corn section.

Postemergence broadleaf weed control with surfactant (CO, western KS, NM, OK, TX, and desert regions of AZ and CA only): Apply 1.3 lb plus 0.75-1.5 pt. of surfactant/A after sorghum reaches 6 inches in height, but before weeds exceed 1.5 inches in height. Apply only on sandy loam and finer textured soil.

Precautions for all applications to sorghum: (1) Heavy rain immediately following application tends to cause excessive concentrations of herbicide in seed furrows, resulting in possible crop injury. Do not apply to furrows planted sorghum until furrows are leveled (plowed in). Level deep planer marks or seed furrows before application. (2) Application to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly alkaline soil may result in crop injury. (3) Following harvest, plow (moldboard or disk plow) and thoroughly till soil in fall or spring to minimize possible injury to spring seeded rotational crops, regardless of rate used. (4) Injury may occur if both this herbicide, preplant or preemergence, and an at planting systemic insecticide are used.

Note: Do not graze or feed forage from treated areas for 21 days following application. Rotational crops: See Rotational crops at end of Corn section.

CHEMICAL FALLOW

Wheat-Sorghum-Fallow: To control annual broadleaf and grass weeds following wheat harvest and into following sorghum crop when grown under minimum tillage.

Apply 3.3 lb/A to wheat stubble immediately following wheat harvest. If weeds are present, remove them with a sweep plow or other suitable implement after application. Plant sorghum into wheat stubble the following spring with minimum soil disturbance. Use a surface planer or a planter leaving a shallow furrow. If weeds are present at planting, remove them with a sweep plow or other suitable implement before planting.

Precautions: (1) Use only on silt loam or finer textured soil. (2) Wheat sorghum fallow cropping sequence must be followed. (3) Do not apply following sorghum harvest.

Note: Do not graze or feed forage from treated area to livestock. Do not plant any crop other than those on this label within 18 months following treatment.

Precautions: (1) Do not use on sand soil. (2) Do not treat eroded hill-sides, catch-basins and rocky outcroppings, or exposed calcareous subsoil. (3) Do not treat soils of the Rosebud and Canyon Series in western NE and adjoining counties in CO and WY. (4) Do not treat soils with calcareous surface layers. (5) Avoid spray overlap.

Note: Do not graze treated areas within six months after application.

RANGELAND

To control certain weeds including heavy grass, foxtail, bromes, fescues, timothy, and other weeds, apply to barley, medusahead, sagewort, and tumble mustard. Use lower rate where heavy grass is an important weed. Use higher rate for other weeds.

For ground applications, use a minimum of 10 gal. of water/A. For aerial applications, use a minimum of 5 gal. of water/A. See Application Procedures for additional information.

Establishment of perennial range grasses in West: CA, ID, NV, OR, UT, WA. Apply 0.9-1.1 lb/A in fall after rains begin, but before ground freezes. Perennial range grass may be seeded when rain begins the next fall following treatment. Plant in deep furrows such as those made by a deep furrow rangeland disk. Treated areas may be grazed 7 months after seeding. However, to provide sufficient time the establishment of desirable range grasses, treated areas should not be grazed until the fall following seeding.

Renovation of existing stands of perennial range grasses

Western Great Plains: CO, KS, MT, NE, ND, SD, WY. Apply 6.1 lb/A in fall before freezes.

Southern Great Plains: OK, TX. Apply 1.1 lb/A in spring before April 1.

West: CA, ID, NV, OR, UT, WA. Do not graze area to be treated for 6 months prior to application. Apply 0.60 lb/A by ground equipment in fall before ground freezes.

*Do not apply preplant in AL, AR, FL, GA, LA, MS, NC, NM, OK, SE, TN, or TX. Do not apply premergence in NM, OK, or TX, except in northeast OK and TX Gulf Coast.

In case of planting failure, sorghum may be replanted. Do not make a second broadcast application, as injury may occur. If originally applied in a band and sorghum is replanted in untreated row middles, this product may be applied in a band to the second planting.

Premergence broadleaf weed control in furrow irrigated bedded sorghum (AZ and CA only): For premergence control of many broadleaf weeds, including groundcherry, lambquarters, morningglory, mustard, pigweed, and purslane, apply 0.9-1.3 lb A after bed preparation, during or after planting, but before sorghum and weeds emerge and before first furrow irrigation. Follow with several regular irrigations, making sure to thoroughly wet all soil.

Precautions for premergence application to furrow irrigated bedded sorghum in AZ and CA: To avoid possible sorghum injury, do not use on sand or loamy sand soil or on sorghum planted in furrows. Applications to sorghum growing on alkali soils or where cuts, fills, or erosion have exposed calcareous or alkali subsoils may cause crop injury. In case of crop failure, do not replant sorghum for 8 months following application. Corn may be planted immediately.

Postmergence (broadleaf and grass control): Apply at rate in Table 5 before weeds exceed 1.5 inches in height. Apply up to close in.

Table 5 Postmergence Broadleaf and Grass Weeds Control in Sorghum

Soil texture	Minimum sorghum height at treatment	Broadcast rate A
Sand or loamy sand	DO NOT USE	
Sandy loam	See sections for postmergence broadleaf weed control	
Silt loam to sandy clay loam	Completely emerged	2.2-2.6 lb
Ottum and Pullman clay soil	8 inches	2.2-2.6 lb
Silty clay loam and finer textured soil	Completely emerged	3.3 lb

Post emergence broadleaf weed control with emulsifiable oil or oil concentrate in water: Apply 1.3 lb A for control of many broadleaf weeds, including annual morningglory, cocklebur, lambquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Apply before pigweed and lambquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NE, OK, TX, and desert regions of AZ and CA, apply when sorghum is 6-10 inches in height, but before it reaches boot stage. In all other areas, apply after sorghum reaches the 3 leaf stage. Add 1 gal of emulsifiable oil or oil concentrate A for ground application and 0.5 gal A for aerial application. Add 1 qt of oil concentrate A for ground application. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

Precautions for applications with emulsifiable oil or oil concentrate in water: See Precautions for applications with emulsifiable oil or oil concentrate in water in Corn section.

Postmergence broadleaf weed control with surfactant (CO, western KS, NE, OK, TX, and desert regions of AZ and CA only): Apply 1.3 lb plus 0.75-1.5 pt of surfactant A after sorghum reaches 8 inches in height, but before weeds exceed 1.5 inches in height. Apply only on sandy loam and finer textured soil.

Precautions for all applications to sorghum: (1) Heavy rain immediately following application tends to cause excessive concentrations of herbicide in soil furrows, resulting in possible crop injury. Do not apply to furrow planted sorghum until furrows are leveled (plowed in). Level deep planter marks or seed furrows before application. (2) Application to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly calcareous soil may result in crop injury. (3) Following harvest, plow (moldboard or disk plow) and thoroughly till soil in fall or spring to minimize possible injury to spring seeded rotational crops, regardless of rate used. (4) Injury may occur if both this herbicide, preplant or premergence, and/or at planting systemic insecticide are used.

Note: Do not graze or feed forage from treated areas for 21 days following application. Rotational crops: See Rotational crops at end of Corn section.

CHEMICAL FALLOW

Wheat-Sorghum-Fallow: To control annual broadleaf and grass weeds following wheat harvest and into following sorghum crop when grown under minimum tillage.

Apply 3.3 lb A to wheat stubble immediately following wheat harvest. If weeds are present, remove them with a sweep plow or other suitable implement after application. Plant sorghum into wheat stubble the following spring with minimum soil disturbance. Use a surface planter or a planter leaving a shallow furrow. If weeds are present at planting, remove them with a sweep plow or other suitable implement before planting.

Precautions: (1) Use only on silt loam or finer textured soil. (2) Wheat sorghum fallow cropping sequence must be followed. (3) Do not apply following sorghum harvest.

Note: Do not graze or feed forage from treated area to livestock. Do not plant any crop other than those on this label within 18 months following treatment.

Precautions: (1) Do not use on sand soil. (2) Do not treat eroded hillides, caliche and rocky outcroppings, or exposed calcareous subsoil. (3) Do not treat soils of the Rosebud and Canyon Series in western NE and adjoining counties in CO and WY. (4) Do not treat soils with calcareous surface layers. (5) Avoid spray overlap.

Note: Do not graze treated areas within six months after application.

RANGELAND

To control certain weeds, including cheatgrass, downy brome, chess, summer annual, bloomweed, little barley, medusahead, sagewort, and tumble mustard. Use lower rate where cheatgrass is major problem; use higher rate for other weeds.

For ground applications, use a minimum of 10 gal of water A. For aerial applications, use a minimum of 5 gal of water A. See Application Procedures for additional information.

Establishment of perennial range grasses in West (CA, ID, NV, OR, UT, WA): Apply 0.9-1.1 lb A in fall after rains begin but before ground freezes. Perennial range grass may be seeded when rain begins the next fall following treatment. Plant in deep furrows such as those made by a deep furrow rangeland drill. Treated areas may be grazed 7 months after seeding. However, to provide sufficient time the establishment of desirable range grasses, treated areas should not be grazed until the fall following seeding.

Restoration of existing stands of perennial range grasses

Central Great Plains (CO, KS, MT, NE, ND, SD, WY): Apply 0.6-1.1 lb A in fall before freezes.

Southern Great Plains (OK, TX): Apply 1.1 lb A in spring before April 31.

West (CA, ID, NV, OR, UT, WA): Do not graze area to be treated for 6 months prior to application. Apply 0.6-0.8 lb A by ground equipment in fall before ground freezes.

Bluegrass and intermediate wheatgrass may be injured by the product at recommended rates.

Note: Do not cut or feed range grass hay. Do not use on treated areas within 7 months following fall application or seeding or 3 months following spring application. Apply only once per year.

Warm season perennial range grasses (Midwest)

Switchgrass: For control of many annual broadleaf and grass weeds including cheatgrass, foxtails (joint green and yellow), lambquarters, pigweed, ragweed, smartweed, and velvetleaf.

For ground application use a minimum of 15 gal of water A.

Use only on loam, silt loam, silty clay loam, clay loam, and silty clay soils with at least 1 percent organic matter.

New seeding: Apply 2.2 lb A after planting but before weeds emerge. Prepare a good firm seedbed. Plant 1/2 inch deep with a glassland drill (preferred method) or a conventional drill. If a conventional drill is used on prepared seedbeds, remove all tension from the disk openers. For best results, cultivate or roll after planting. Clip weeds that escape in July or August. Avoid clipping switchgrass seedlings.

Established stands: Apply 2.2 lb A in April or early May, before weed emergence.

Note: Do not cut for hay. Do not graze treated areas within 4 months following application at seeding or 3 months following application to established switchgrass. Treat only once per year.

Rotational crops: See Rotational crops at end of Corn section.

PERENNIAL RYEGRASS GROWN FOR BEED (PACIFIC NORTHWEST ONLY)

For control of annual ryegrass and rital fescue, apply 1.33 lb in at least 15 gal of water A after first fall rain.

Precautions: (1) Apply only to perennial ryegrass from which seed crop has been harvested. (2) Do not apply to ryegrass more than 2 years in succession.

Note: Do not graze treated land within 10 days after application. Do not plant treated land to other crops for 18 months.

SUGARCANE: For control of many annual broadleaf and grass weeds, including amaranth, crabgrass, fleabane, Florida panicum, foxtails, junglerice, and mesquite. Broadcast 2.2-4.4 lb in 20-80 gal of water A for adequate coverage of the soil surface at time of planting or ratooning, but before cane emerges. One additional application may be made over cane as it emerges, and two additional applications may be made interine after emergence as directed above.

For control of emerged palmetto weed (Florida only): Apply 0.4-0.6 lb in at least 40 gal of water A as a directed spray. Add 2 qt of surfactant for each 50 gal of spray. Thoroughly cover weed foliage.

Precautions: (1) Do not apply after close in. (2) Do not apply more than 11 lb A to any one crop of cane.

For control of alexandergrass, large crabgrass, palmetto (artillery) weed, and spiny amaranth, use one of the following methods at planting or ratooning (Florida only):

1. Apply 4.4 lb in 20-80 gal of water A, premergence, broadcast or banded. Follow with one or two broadcasts or banded over the top applications as needed, postmergence to sugarcane and weeds, at 2.2 lb in 20-80 gal of water A. Treat before weeds exceed 1.5 inches in height.

2. Apply 1.3 times as needed, at 2.2 lb in 20-80 gal of water A either broadcast or banded over the top, postmergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.

TURF GRASSES FOR SOO PRODUCTION (ST. AUGUSTINE, CENTIPEDE, AND ZOYBA GRASS)

Apply 2.2-4.4 lb A according to soil texture:

Muck or peat	4.4 lb	Old beds: Within 2 days after lifting sod
		New beds: 3-4 days after springing or plugging
Sandy soil	2.2 lb	Old beds: Within 2 days after lifting sod
		New beds: 7-10 days after springing or plugging

If weeds regrow, apply an additional 2.2 lb A on muck or peat or 1.1 lb A on sandy soil.

Precautions: (1) Do not apply within 30 days before cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives, as injury may occur. (3) Do not use north of NC.

MACADAMIA NUTS: For premergence control of many broadleaf and grass weeds, including crabgrass, foxtail, wiregrass, Florida panicum, sparrowgrass, and mesquite. Broadcast 2.2-4.4 lb in 50 gal of water A before harvest and just before weeds emerge. Repeat as necessary. Do not spray when nuts are on ground during harvest period. Do not apply by air.

PINEAPPLE: For control of purslane, sparrowgrass, annual grasses, annual broadleaf, agrostum, amaranth, Florida panicum, fireweed, spurge, indigo, and papalo, apply up to 7.1 lb A as a blanket spray immediately after planting following harvest. Make additional blanket or interspace applications of up to 1.7 lb A at 1.2 month intervals as needed, or to differentiation. Apply in 20-40 gal of water A to assure thorough coverage.

Precautions: (1) Do not apply more than 33.3 lb A per cycle. (2) Repeated monthly applications to plant foliage may slow plant growth and delay fruiting.

Note: Do not apply within 45 days of fruit harvest or forage harvest if forage is to be fed to livestock.

DOUGLAS FIR, GRAND FIR, NOBLE FIR, WHITE FIR, LODGEPOLE PINE, PONDEROSA PINE, AND SCOTCH PINE

Annual broadleaf and grass weed control: Apply 2.2-4.4 lb in 20-40 gal of water A between fall and early spring while trees are dormant or apply soon after transplanting. Apply before weeds are 1.5 inches tall.

Quackgrass control: Apply 4.4 lb A in fall and early spring while trees are dormant and before quackgrass is more than 1.5 inches tall.

Precautions: (1) Do not graze treated areas. (2) Do not apply to seedbeds. (3) Apply only once per year.

NONSELECTIVE WEED CONTROL ON NONCROP LAND: This product provides long term weed control on industrial sites, highway medians and shoulders, railroad rights of way, lumberyards, petroleum tank farms, and in noncrop areas on farms, such as around buildings, equipment and fuel storage areas, along fences, and lanes.

Apply before or soon after weeds begin growth. Make postmergence applications when weeds are young and actively growing. Use the higher rates on fine clay and muck soils. Use sufficient water to assure thorough coverage. Use at least 1 gal of water for each pound of product; use more if practical.

Annual broadleaf and grass weeds (including barnyardgrass, cheatgrass, crabgrass, lambquarters, foxtail, ragweed, puncturevine, and turkey mullein): Apply 5.3-11.1 lb A.

Hard-to-kill annual and perennial broadleaf and grass weeds (including bluegrass, burdock, Canada thistle, dogfennel, or chardgrass, plantain, quackgrass, purpletop, redtop, and smooth brome): Apply 11.1-22.2 lb A.

Hard-to-kill biennial and perennial weeds (including bull thistle and southern): Apply 22.2-44.4 lb A.

For small areas, 4 oz per 1,000 sq ft is equivalent to 11.1 lb A.