ATRAZINE

ACCEPTED
OCT 1 9 1981
[illegible] Federal Insecticide Fungicide and Rodenticide Act, [illegible] for the pesticide registered under
EPA Reg. No. 44 317-4 [illegible]

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.

TEN POUNDS
Net Weight

Active Ingredients: Atrazine:2-chloro-4-ethylamino-6-isopropylamino-s-triazine	85.5%
Related compounds	4.5%
Inert ingredients	10.0%
Total:	100.0%

Atrazine 90% W.D.G. is a water dispersible granule

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back of bag for additional precautionary statements.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY
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 the 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 MARZONE or the Seller. All such risks shall be assumed by the Buyer.
MARZONE warrants that this 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. MARZONE MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF Fitness or Merchantability or any other express or implied warranty. In no case shall MARZONE or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. MARZONE 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 MARZONE.

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 sites for control of most annual and many perennial broadleaf and grass weeds. This product may be applied before or after weeds emerge.
Since this product acts mainly through root absorption, its effectiveness depends on moisture to move it into the root zone. If weeds develop, a shallow cultivation or rotary hoeing will generally result in better 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.
Store in a dry place.
Where the use directions give a range of rates, use the lower rate on coarse textured soil and soil low in organic matter; use the higher rate on fine textured soil and soil high in organic matter.
For band application, calculate amount to be applied per acre as follows:

Band width in inches / row width in inches × Broadcast rate per acre = amount needed per acre of field

Note: MARZONE does not recommend applications in combination with other herbicides or oils except as specifically described on the label or in literature published by MARZONE.

Mixing Procedures-All Uses

Unless otherwise specified, use a minimum of 10 gal of spray mixture/A for all preplant, preemergence, and postemergence applications (with or without oil or surfactant) with ground equipment. For aerial application, apply a minimum of 1 gal of water for each 1-1.5 lb applied per acre. For aerial postemergence treatments on corn and sorghum, apply recommended rate in a minimum of 2 gal of water/A.
Water: (1) Be sure sprayer is clean and not contaminated with any material, as crop injury or sprayer clogging may result. (2) Fill tank ¼ full with clean water and start agitation. (3) Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface. (4) Pour product directly from bag into tank. (5) Continue filling until 90% full; increase agitation if necessary to maintain surface action. (6) Add emulsifiable oil, oil concentrate, or tank mix herbicides. (7) Complete filling tank, maintaining sufficient agitation at all times to ensure surface action. This applies to both spray and nurse tanks. (8) Empty tank as completely as possible before refilling to prevent buildup of oil or emulsifiable concentrate residue. Always maintain agitation to avoid separation. (9) If an oil or emulsifiable concentrate film starts to build up in tank, drain and clean with strong detergent solution or solvent. (10) Immediately after use, clean sprayer thoroughly by flushing system with water containing a detergent.

Liquid fertilizer: (1) Nitrogen solution or complete liquid fertilizer may replace all or part of the water as a carrier for preemergence or preplant application on corn and sorghum. Do not apply fertilizer mixtures after corn or sorghum emerge as crop injury may occur. Before mixing, always check for compatibility. To test, put proportionate quantities of this product and the liquid fertilizer being used into a quart jar. If 2.6 lb is being in 25 gal of liquid fertilizer per acre, mix [illegible] oz of this product in 1 pt of liquid fertilizer. After shaking vigorously for 30 seconds, let stand for 5 minutes. If the fertilizer/herbicide combination remains mixed or can be remixed readily, the mixture is compatible and can be sprayed. If it is not compatible, make a water slurry with the herbicide before adding fertilizer and use the mixture only if this test shows it is compatible. Always maintain agitation. (2) If the product is compatible with the liquid fertilizer, follow the mixing procedures for water-steps 1-10. Perform the compatibility test as outlined in (1) above for herbicide tank mixture also.

Application Equipment

Ground equipment: Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application. Be certain that nozzles are uniformly spaced and the same size. Calibrate sprayer before use and recalibrate at the start of each season and when changing carriers.
Use a pump with capacity to (1) maintain 35-40 psi at nozzles, (2) provide sufficient agitation in tank to keep mixture in suspension, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide propeller shear action for dispersing and mixing this product. The pump should provide a minimum of 10 gal/minute/100 gal tank size circulated through a correctly positioned sparger tube or jets.
Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on suction side of pump should be 16 mesh or coarser. Do not place a screen in the recirculation line. Use 50 mesh or coarser screens between the pump and boom, and where required, at the nozzles. Check nozzle manufacturer's recommendations.

Aerial Application Procedures

Use only where broadcast applications are specified. Apply a minimum of 1 gal of water [illegible] postemergence treatments on corn and sorghum [illegible] under conditions where uniform coverage cannot be obtained or where excessive spray [illegible].
Do not apply directly to humans or animals. Although it is unnecessary for flaggers [illegible] of equipment, they should avoid inhalation of dust or spray mist and prolonged contact with [illegible] wash thoroughly before eating and at the end of each day's operation.

Oil and Oil Concentrate Recommendations

Adding emulsifiable oil or oil concentrate to postemergence water based sprays on corn and sorghum may improve weed control. However, under certain conditions, the use of either type of oil may increase injury crop. To minimize this possibility, observe the following directions:
Use a crop oil designated for use with this product containing [illegible] suitable emulsifier, or a [illegible] designed for use with this product and containing no more than [illegible] emulsifier or surfactant [illegible] concentrate contaminated with water or other materials can cause compatibility problems and/or crop injury. See additional precautions under Directions for Use.

Directions for Use

FAILURE TO FOLLOW ALL PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY OR ILLEGAL RESIDUES

Corn

Apply before planting, at planting, or after planting using [illegible] as indicated in the [illegible] annual broadleaf and grass weeds including [illegible] oats, [illegible] nightshade, [illegible].

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.
Preemergence (Broadleaf and grass control): Apply during or shortly after planting before weed emergence at rate in Table 1.
Postemergence (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*

Soil texture	Broadcast rate/A
COARSE	
Sand, loamy sand, sandy loam	2 [illegible]
MEDIUM	
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	2 [illegible]
FINE	
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with medium to high organic matter and clay (including the dark prairie soils of the Corn belt)	[illegible]
Peat, muck, and high organic clay (apply postemergence only)	3.3 [illegible]

*Broadleaf control (eastern CO, western KS, Western NE, [illegible] OK Pan Handle, west TX, and eastern WY) on sand, loamy sand, sandy loam, mod to strongly alkaline soil and all recently eroded soil, apply no more than [illegible] A either preplant or preemergence. Controls many broadleaf weeds, including pigweed, lambsquarters, nightshade, purslane, and kochia. 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 solution, direct spray to cover 3-4 inches of cornstalks to avoid corn foliage injury. Maintain agitation in spray tank during application.
Postemergence 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/A for ground application and 0.5 gal/A for aerial application. Add 1 qt of [illegible] concentrate/A for ground application and 0.5 gal/A for aerial application. Apply before [illegible] weeds and lambsquarters reach [illegible] other weeds reach 4 inches in height. A cultivation may be necessary if all weeds are [illegible].

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 rainfall, as crop injury may occur. (2) Inbred lines or any breeding stock may be adversely 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 and oil concentrate carefully. Oil contaminated 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

Preemergence or postemergence (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 a mixture with minimum ratio of 1 part product to 1 part water. Injecting a larger volume of 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 [illegible] period. Apply in [illegible] 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.

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 drift may occur from windy conditions, when main joints and connections are leaking, or when nozzles are not providing 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 used 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.
Six 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.

1. 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.
2. Apply 2.2 lb/A preplant. 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).
3. 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.
4. 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 is 6 inches tall.
5. Apply 4.4 lb/A preplant (yellow nutsedge control only).
6. 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.

Quackgrass control on land going into corn production

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

Tank Mixtures for Corn

Metolachlor: Use tank mixture for control of certain broadleaf and grass weeds in corn. Refer to Metolachlor label for all directions, weeds controlled, precautions, and limitations.

[redacted]

[redacted]

[illegible] Simazine 4L [illegible] tank mixture for [illegible] of many annual weeds [illegible] [illegible] lambsquarters [illegible] Apply before [illegible] Table [illegible] for control of above weeds [illegible] heavy infestations of [illegible] Apply [illegible] of 10 gal of water [illegible] weeds [illegible]

[illegible] Apply [illegible] worked after [illegible] avoid deep [illegible] For best results [illegible] few weeks before planting.

[illegible] Apply [illegible] weeds emerge.

[illegible] corn [illegible] for further directions [illegible]

Table 3. Tank Mixtures with Simazine on Corn

	Broadcast rate/A			
	1:1 Ratio*		1:2 Ratio**	
Soil texture	This product	Simazine 80W or Simazine 4L	This product	Simazine 80W or Simazine 4L
[illegible] sand [illegible]	1.1 lb	1.25 lb or 2 pt	0.73 lb	1.67 lb or 2.67 pt
Loam [illegible] sandy clay loam [illegible]	[illegible]	1.5 lb or 2.4 pt	0.86 lb	2 lb or 3.2 pt
Loam [illegible] clay loam, sandy clay [illegible]	[illegible]	1.8 lb or 3 pt	1.67 lb	2.4 lb or 3.84 pt

*[illegible] control of above weeds

**For control of expected heavy infestations of [illegible]

[redacted]

Precautions for all applications to c[illegible] (1) Do not apply more than 4.4 lb/A of this product per year. (2) Following harvest plow [illegible] to minimize possible injury to rotational spring seeded crops regardless of rate used.

Note: For all applications to [illegible] graze or feed forage from treated areas for 21 days following application.

Rotational crops: (1) Do not rotate to any crop [illegible] until the following year, as injury may occur. (2) If applied after June [illegible] 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 [illegible] 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, [illegible] 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 [illegible] 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 [illegible] 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 4. 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.

Preemergence (Broadleaf and grass control): Apply [illegible] after planting, before weed or crop emergence at rate in Table 4.

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

Soil texture	Organic matter	Broadcast
COARSE [illegible]	[illegible]	DO NOT USE (except for preemergence use on bedded sorghum in AZ and CA)
MEDIUM AND FINE [illegible] silty clay loam, sandy clay, silty clay, clay	Less than 1.5%	[illegible]
	1.5%	1.1-2.2 lb
	Over 1.5%	[illegible]

[illegible] Do not apply preemergence [illegible] or south in the Gulf Coast.

[illegible] sorghum may be replanted [illegible] second broadcast application [illegible] in a band and sorghum [illegible] this product may be applied in a band to the [illegible]

Preemergence broadleaf weed control in furrow irrigated bedded sorghum, AZ and CA only: [illegible] before the first [illegible]

[illegible] preemergence [illegible] bedded sorghum [illegible] AZ or CA. To avoid [illegible] Applications to sorghum [illegible]

Postemergence (Broadleaf and grass control): [illegible] Table 5 before weeds exceed 1.5 inches in height. [illegible]

Table 5. Postemergence Broadleaf and Grass Weed Control in Sorghum

Soil texture	Minimum sorghum height at treatment	Broadcast rate/A
[illegible]	[illegible]	
[illegible]	See directions for postemergence broadleaf weed control	
[illegible] sandy clay loam	[illegible] emerged	[illegible]
[illegible] and Pullman clay loam	[illegible] inches	2.2 lb
[illegible] loam and finer textured soil	[illegible] emerged	3.3 lb

Postemergence broadleaf weed control with emulsifiable oil or oil concentrate in water: Apply 1.1 lb/A for control of many broadleaf weeds including [illegible] velvetleaf [illegible] and wild buckwheat. Apply before pigweeds and lambsquarters reach [illegible] inches in height and before other weeds reach [illegible] inches in height. In CO, western KS, NM [illegible] TX, and desert regions of AZ and CA, apply when sorghum is [illegible] inches in height but before it reaches boot stage. In other areas apply after sorghum reaches the 3 leaf stage. Add [illegible] of emulsifiable oil/A for ground application and 0.5 gal/A for aerial application. [illegible] 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 1.1 lb plus 0.75-1.5 pt of surfactant/A after sorghum reaches [illegible] 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 furrow, resulting in possible crop injury. Do not apply to furrow planted sorghum until furrows are leveled (opened in); leave 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 soils may result in crop injury. (3) Following harvest, plow (Moldboard or disk plow) and thoroughly [illegible] 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.

Tank Mixtures for Grain Sorghum

Terbutryn: Use as tank mixture for control of certain broadleaf and grass weeds [illegible] sorghum. Refer to [illegible] label for directions, weeds controlled, precautions and limitations.

Chemical Fallow

Wheat-Sorghum-Fallow: To control annual broadleaf and grass weeds [illegible] when grown under the minimum tillage.

Apply 3.3 lb/A to wheat stubble immediately following wheat [illegible] or other suitable implement after application. Plant sorghum [illegible] disturbance. Use a surface planter or a planter leaving a [illegible] sweep plow or other suitable implement before planting.

Precautions: (1) Use only on silt loam or finer textured [illegible] followed. (2) Do not apply following sorghum harvest.

Note: Do not graze or feed forage from treated area to livestock [illegible] months following treatment.

Tank Mixtures for Wheat-Sorghum-Fallow

Terbutryn: Use as tank mixture for control [illegible] Refer to Terbutryn label for directions, weeds controlled, precautions and limitations.

Wheat-Corn-Fallow (KS, NE): This product [illegible] thistle and lettuce, wild sunflower, and volunteer wheat [illegible] following corn crop grown under minimum tillage.

Apply with ground equipment only.

Follow directions for use, notes, and precautions in the [illegible] references to sorghum.

Tank Mixtures for Wheat-Corn-Fallow (KS, NE)

Terbutryn: Use as tank mixture for [illegible] weeds [illegible] Refer to Terbutryn label for directions, weeds controlled, precautions and limitations.

Wheat-Fallow-Wheat (CO, [illegible] MT, NE, ND, SD, and WY): [illegible] common lambsquarters, field pennycress, [illegible] mustard, Russian thistle [illegible] during fallow period of a wheat-fallow-wheat rotation. [illegible] minimum of 5 gal of water/A for aerial application [illegible] wild sunflower, use the higher rate. Apply to stubble [illegible]

Tank Mixtures for Wheat-Fallow-Wheat (CO, KS, MT, NE, ND, SD, WY)

Terbutryn: Use as tank mixture for control of certain broadleaf and grass weeds [illegible] Refer to Terbutryn label for directions, weeds controlled, precautions and limitations.

[redacted]

Precautions: (1) Do not use on sand soils. (2) [illegible] (3) Do not [illegible] soils of the Rosebud and Canyon series [illegible] CO and WY. (4) Do not [illegible] soils with calcareous surface layers [illegible]

Note: Do not graze treated areas within [illegible] months after application.

Rangeland

To control certain weeds, including cheatgrass, downy brome [illegible] tansy mustard, and tumble mustard. Use lower rate where cheatgrass is [illegible] use higher rate for other weeds.

For ground applications, use a minimum of [illegible] gal of water/A. For aerial applications, use a minimum of [illegible] gal of water/A. See Mixing Procedures [illegible] for additional information.

Establishment of perennial range grasses in West (CA, ID, NV, OR, UT, WA): Apply [illegible] after [illegible] underground freeze. Perennial range grass may be seeded when [illegible] furrows such as those made by a deep furrow range drill [illegible] provide sufficient time for establishment of [illegible] range grasses. Treated areas should not be grazed until the fall following seeding.