JUN 1 2 1990

Brent Randol Marketing Assistant Van Diest Supply Co. Highway 20 West, Box 610 Webster City, Iowa 50595-0610

Dear Mr. Randol:

Subject:

Cornbelt Atrazine 90DF EPA Reg. No. 11773-13 Cornbelt Atrazine 4L EPA Reg. No. 11773-1

Re: Atrazine Voluntary Exposure Reductions Measures

Your Amendment Submissions Dated May 31, 1990

The labeling referred to above, submitted in connection with the Federal Insecticide, Fungicide, and Rodenticide Act, as amended is acceptable with the following comment:

Please update "Statements of Practical Treatment (First Aid)" on both labels to read as follows: STATEMENTS OF PRACTICAL TREATMENT: IF SWALLOWED: contact your local poison control center, hospital or physician. If the patient is unconscious, maintain breathing and heartbeat (cardiopulmonary resuscitation). If the patient is conscious and alert, induce vomiting (syrup of ipecac or stimulate the back of the throat with a finger). Never Give Anything By Mouth To An Unconscious Person. IF ON SKIN: remove contaminated clothing and wash skin with plenty of soap and water. Get medical attention if irritation persists. IF IN EYES: flush with plenty of water. Get medical attention if irritation persists.

Stamped approved copies of your labels are attached. (Please note that submitted inserts are also stamped approved and should remain attached to draft labeling.) Please submit five (5) copies your final printed labels incorporating this amendment and above mentioned comment before you release the products for shipment. All technical and end-use products released for shipment must have amended labels after September 1, 1990.

Sincerely yours,

Robert J. Taylor

Trodict Manager (25)

CONCURRENCES giolde Harbicide Branch

ENRHAME MUMM

DATE 6/1/90

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

eb.B. @0 : 1984-159-319

RESTRICTED USE PESTICIDE (GROUDD MATER COUCERNS)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR ITECT SUPERVISION, AND ONLY FOR THOSE USES TOVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

THIS PRODUCT IS A RESIDICTED USE HERBICIDE DUE TO GROUND WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATE-MENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POSENTIAL FOR AIRAZINE TO REACH GROUND WATER.

INSERT #2

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL. CROP INJURY, OR ILLEGAL RESIDUES.

INSERT #3

Do not apply this product through any type of irrigation system.

INSERT #4

Users are required to wear long-sleeved shirts and long pants or equivalent, chemical resistant gloves, and boots (waterproofed). In addition, persons involved in mixing/loading operations are required to use chemical resistant rubber or neoprene gloves and a face shield or goggles.

INSERT #5

This product may not be mixed/loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sink toles.

INSERT #6

Do not apply where recoff is likely to occur. Do not apply when weather conditions favor drift from treated areas.

INSERT #7

Storage

Shound water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermenble material.

INSERT #8

INSERT #9

a meta l



* Indicates partial Control only.

Certain states may have established nate limitations within specific geographical areas. Consult your state lead posticide control agency for additional information. It is a violation of this label to deviate from state use regulations. In Iowa, for example, maximum use rates have been established within a specific perticide management area. Contact the lows Extension Societies, or the lowa Department of Agriculture and Land Stevardship for additional information.

INSERT #11

Compatibility Test: Since liquid fertilizers can vary, elect within the same analysis, always check compatibility with herbicide(s) each time before use. Be especially careful when using complete suspension or fluid fertilizers as ser cous compatibility problems are more likely to occur. Commercial application equipment may improve compatibility is some instances. The following test assumes a spray volume of 25 gal. per acre. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure:

- Add 1 pint of fertilizer to each of 2 one-quart jars with tight lids.
- 2. To one of the jars add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex or Unite (1/4 tsp. is equivalent to 2 pt. per 100 gal. spray). Shale or stir gently to mix.
- 3. To both jers add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry horbicides first, flowables mext, and emulsifiable concentrates last. After each addition, shale or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:

Dry herbicides: For each pound to be applied par acre. add 1.5 level teaspoons to each jar.

Liquid herbicides: For each pint to be applied per accesadd 0.5 teaspoon or 2.5 milliliters to each jar.

4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy only film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitar tion is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add 1/3 of the compatibility agent to the fertilizer and the other 1.2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

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and before corr reaches 12 inches in height

INSERT #13

Certain states may have established rate limitations within specific geographical areas. Coosult your state lead posticide control agency for additional information. It is a violation of this label to deviate from state use regulations. In lowal for example, maximum use rates have been established within a specific pesticide management area. Contact the lowa Estension Service, or the lowa Department of Agriculture and Land Stewardship for additional information.

INSERT #14

and before corn reaches 12 inches in height

INSERT #15

(5) Do not exceed 3 lbs. active ingredient (or 6 pts. of this product) per acre per calender year. (6) Postemergence applications to corn must be made before corn reaches 12 inches in height.

INSERT #16

partial

INSERT #17

quackgrass

INSERT #18

SUPPLESSION

INSERT #19

partially

INSERT #20

(suppress)

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Four alternative methods of use for partial control (suppression) of yellow rutsedge and Tenada thistle are listed below in order of preference. If other weed species, such as aroual grasses, are also expected, use alternative 2 or 4.

- 1. Broadcast 3 pts./A plus 1 gal. of emulsifiable bil or 1 gt. of oil concentrate. Apply after crop and yellow nut-codes or Canada thistle emerge. Lut before yellow nutsedge reaches a height of 3 inches or Canada thistle reaches a height of 5 inches. Repeat application tefore corn reaches 12 inches in height.
- 2. Broadcast 3 pts./A preplant incorporated for central of yellow notsedge, or broadcast 3 pts./A during or shortly after planting, but prior to crop or weed emergence for control of Canada thistle. Follow with an application of 3 pts./A plus 1 gal. of emulsifiable oil or 1 gt. of oil concentrate after corn and weeds emerge, but before yellow nutsedge or Canada thistle reaches a height of 6 inches and before corn reaches 12 inches in height.
- 3. Broadcast 6 pts./A plus 1 gal. of emulsifiable oil or 1 qt. of oil concentrate after crop emerges, but before corn reaches 12 inches in height. Apply after yellow nutsedge and Canada thistle emerge, but before yellow nutsedge is 3 inches tall or Canada thistle is 6 inches tall.
- 4. Proadcast 6 pts./A before, during, or shortly after planting, but before crop or weed emergence (yellow outsedge suppliession only).

INSERT #22

on emop loguery may occur

INSERT #23

suppression

INSERT #24

early

INSERT #25

and before corn reaches 12 inches in height

INSERT #26

BUPPPPBF

INSERT #27

control

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INSERT #28

Quarkgrass control on land going into corn production
Make a single broadcast application of 6 pts./A in spring before
planting. Plow I-3 weeks later. Follow-up in the fall by utilizing a suitable contact herbicide, such as Roundup.

(1) To avoid crop injury and illegal residues, do not apply more than 3 lbs./A active regredient (5 pts./A of this product) per calendar year. (2) For best control of cocklebur, the application rate cannot be less than 2 lbs./A active ingredient, either alone or in tank mic combinations.

INSERT #30

or illegal residues may result.

INSERT #31

¥ 4-

INSERT #32

* *

INSERT #33

** Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations. In Iowa, for example, maximum use rates have been established within a specific pesticide management area. Contact the Iowa Extension Service, or the Iowa Department of Agriculture and Land Stewardship for additional information.

INSERT #34

Postemengence (Broadleaf and grass control):

INSERT #35

and before sometime reaches 12 inches in height

INSERT #36

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INSERT #37

* Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations. In lowa, for example, maximum use rates have been established within a specific pesticide management area. Contact the lowa Extension Service, or the lowa Department of Agriculture and Land Stewardship for additional information.

INSERT #38

but before it reaches 18 inches in height.

INSERT #39

and before soughum reaches 12 inches in height.

INSERT #40

(5) In not apply more than 3 lbs. active ingredient (6 pte. of this product) per acre per calendar year.

or illegal residues may result

INSERT #42

or compliantury may result

INSERT #43

To a old illegal residues.

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INSERT #44

To expid illegal residues and crop injury,

INSERT #45

TANK MIXTURES FOR CHEMICAL FALLOW

Wheat-Sorghum-Fallow or Wheat-Corn-Fallow (KS, NE)
Gramoxone Extra: If weeds are present at application, a
tank mi; with Gramoxone Extra may be used. Broadcast 6 pts.
of Cornbelt Atrazine 4L plus a suitable amount of Gramoxone
Extra in 20-60 gal. of water/A by ground equipment. Add
0.5-1 pt. of nonionic surfactant, such as Cornbelt Spray Activator, per 100 gal. of spray mixture. Add Atrazine to
spray tank first and thoroughly mix with water. Then add
Gramoxone Extra, followed by surfactant. Use the higher
rate of Gramoxone Extra specified on the label if weeds are
4-6 inches tall. This mixture will not control weeds taller
than 5 inches. Apply to stubble ground. Treat only once
during same fallow period. Refer to Gramoxone Extra label
for further directions, precautions, and limitations.

Wheat-Fallow-Wheat (CO, KS, MT, NE, ND, SD, and WY)
Gramoxone Extra: If weeds are present at applications, a table of out with Gramovone Extra day be used. Breadcast 1-2 pts. A of Combelt Atrazine 4L plus a suitable amount of Gramovone Extra in 80-60 gal. of water/A by ground equipment. Add 0.5-t pt. of a nonionic surfactant, such as Combelt Spray Activator, per 100 gal. of spray mixture. Add Atrazine to spray tank first and thoroughly mix with water. Then add Gramoxone Extra, followed by surfactant. Use the higher rate of Gramoxone Extra specified on the label if needs are 4-6 inches tall. This mixture will not control where taller than 6 inches. Apply to stubble ground. Treet only done during same fallow period. Refer to Gramowone Extra label for further directions, precautions, and limitations.

If useds are present at application and this product is reed a (e^{\pm}) , the either an approved contact herbicide before we after treatment, or tillage after treatment.

Use tillage to control weeds which escape during fallow period. Till before planting. For this product applied alone of its task mixture with Gramoxone Extra. plant at least 2 indies deep and 12 minths or more after application.

or illegal residues may result

INSERT #47

(1) In areas west of the Booky Mountains (except the Great Basin), grazing may be begin 7 months after a fall application or three months after a winter or spring application. (2) To prevent illegal residues, do not graze treated areas of the Great Basin, or areas east of the Booky Mountains.

INSERT #48

Precautions

INSERT #49

(2) Do not exceed 10 lbs. active ingredient (10 qts. of this product) per acre per calendar year. (3) Certain states may have established rate limitations within specific geographical areas or within the state itself. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations. In Iowa, for example, maximum use rates have been established within the state and specific pesticice management areas. Contact the Iowa Extension Service, or the Iowa Department of Agriculture and Land Stewardship for additional information.

INCERT #50

Compex trademark of FALO Agricultural Chemicals, Inc.

Gramoxore trademark of ICI Americas for parquat

Unite trademark of Hiskins Agricultural Chemical Co.

Commbelt - is a registered trademark of VAN DIEST SUPPLY CO.. Webster City. IA 50575

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EPA Est. 11773-IA-1 EPA Reg. No. 11773-1 Insert #1

CORNBELT ATRAZINE 4L

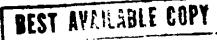
Herbicide -- for season-long weed control in corn, sorghum, and certain other crops

Cornbelt Atrazine 4L contains 4 lbs. active ingredients per gallon.

Shake well before using.

Use entire contents at one time.

CAUTION Keep Out of Reach of Children



See inside Panel for Additional Precautionary Statements.

Cornbelt trademark of VAN DIEST SUPPLY CO.

See directions for use inside booklet.

VAN DIEST SUPPLY CO. Webster City, Iowa 50595 9-14-88

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

ACCEPTED
with COMMENTS
in EPA Letter Dated:

Unier the Pederal Investigite, Fulls delicing to the contract of the same of t

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

Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read accompanying booklet for complete directions for use.

CHEMIGATION: Refer to supplemental labeling entitled (Center Pivot Sprinkler Application) for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter treated areas without protective clothing until

Insert



sprays have dried (or, if appropriate, dusts have settled).

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. (Indicate specific oral warnings which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure). When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: "CAUTION Area treated with Cornbelt Atrazine 4L on (date of application). Do not enter without appropriate protective clothing until product has dried. In case of accidental exposure, remove contaminated clothing and wash with soap and water. In case of contact with eyes, flush with plenty of water. Get medical attention if irritation persists."

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Precautionary Statements -- Caution

Hazards to Humans and Domestic Animals: Harmful if swallowed, inhaled or absorbed through skin. Do not breathe vapors or spray mist. Avoid contact with eyes, skin contact through skin contact with eyes, skin eyes, ey

Statement of Practical Treatment: If swallowed, contact your local poison control center, hospital or physician. If the patient is unconscious, maintain breathing and heartbeat (cardiopulmonary resuscitation). If the patient is conscious and alert, induce vomiting (syrup of ipecac or stimulate the back of the throat with a finger).

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

In case of skin contact, remove contaminated clothing and wash with soap and water. In case of contact with eyes, flush with plenty of water. Get medical attention in irritation persists.

Note to Physician: There is no specific antidote for atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

Environmental Hazards: Do not apply directly to any body of water. Do not contaminate water by cleaning of equipment or disposal of wastes.

Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water.

Atrazine has been found in groundwater. Users are advised not to apply Atrazine to sand and loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e., well-drained. local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

All crops -- this pesticide is toxic to aquatic Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas.

Do not contaminate water by cleaning of equipment or

disposal of wastes.

STORAGE AND DISPOSAL

BEST AVAILABLE COPY

Storage: Do not contaminate water, food or feed by storage or disposal. This product may be stored in unheated buildings. Product which has been stored should be thoroughly agitated by shaking or stirring prior to use.

Disposal: Do not contaminate water, food, or feed by storage or disposal.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: PLASTIC: Triple rimse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities by burning. burned, stay out of smoke. METAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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 VAN DIEST SUPPLY CO. or the Seller. All such risks shall be assumed by the Buyer. DIEST SUPPLY CO. 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. VAN DIEST SUPPLY CD. makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall VAN DIEST SUPPLY CD. or the Seller be liable for consequential, special, or indirect damage resulting from the use or handling of this product. VAN DIEST SUPPLY CD. 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 VAN DIEST SUPPLY CD.

General Information

This herbicide controls many annual broadleaf and grass weeds in corn and sorghum including barnyardgrass, witchgrass (Panicum capillare), yellow foxtail, green toxtail, wild oats, large (hairy) crabgrass, morningglory, lambsquarters, pigweed, ragweed, nightshade, purslane, and mustard. This product may be applied before or after weeds emerge.

Insert #8

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

Following many years of continuous use of this product and chemically related products, biotypes of some of the weeds listed on this label have been reported which cannot be effectively controlled by this and related herbicides. Where this is known or suspected and weeds controlled by this product are expected to be present along with resistant biotypes, we recommend the use of this product in combinations or in sequence with other registered herbicides which are not triazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide. Consult with your state Agricultural Extension Service for specific recommendations.

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.

DO NOT USE THIS PRODUCT ON CROPS GROWN FOR SEED. SCMC INBREDS HAVE A VERY LOW TOLERANCE TO CHEMICALS AND THE USE OF THIS COMPOUND COULD RESULT IN INJURY TO A CROP GROWN FOR SEED.

This product is nonflammable.

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

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result.

NOTE: VAN DIEST SUPPLY CO. does not recommend applications in combination with other herbicides or oils except as specifically described on the label or in literature published by VAN DIEST SUPFLY CO.

Application Procedures

Ground application

For the most uniform distribution of broadcast applications, use 80 degree flat fan-type nozzles. For band applications, use flat fan even spray nozzles. Screens and strainers should be no finer than 50-resh. Use a pump with capacity to (1) provide sufficient aditation during mixing and application to keep material in suspension, and (2) maintain 30-40 psi operating pressure. Unless otherwise specified, use a minimum of 10 gal. of water/A for preplant incorporated, preemergence, and postemergence (without oil or surfactant) applications. Use a minimum of 10 gal. of water/A for all postemergence applications combined with oil or surfactant.

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

Band width Broadcast Amount needed in inches x rate = per acre Row width per acre of field in inches

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Aerial application

For preplant and preemergence broadcast treatments, apply at a 1:1 ratio to water (example: recommended rate of 1 qt. of product is mixed with 1 qt of water) to be applied/A. For postemergence treatments, apply recommended rate in a minimum of 5 gal. of water/A. Avoid applications under conditions where uniform colerage cannot be obtained or where excessive spray drift may occur.

Do not apply directly to humans or animals. Flagmen or loaders should avoid inhalation of spray mist and contact with skin and should wash thoroughly before eating and at the end of each day's operation.

Application in water or liquid fertilizer
Nitrogen solutions or complete liquid fertilizers may
replace all or part of the water as a carrier for
preemergence and preplant applications. 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 postemergence water based sprays may improve weed control. However, under

certain conditions, use of either emulsifiable oil or oil concentrate may seriously damage corn or sorghum. To minimize this possibility, follow directions, procedures, and precautions below.

Use a crop oil designated for use with this product containing 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. Several oils and crop oil concentrates of these types are on the market. Emulsifiable oil and oil concentrate contaminated with water or other materials can cause compatibility problems and/or crop injury.

Mixing procedures - all uses: (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 2/3 full with clean water. (3) Start agitation. product directly from container into tank. (5) Add emulsifiable oil, oil concentrate, or a tank mix herbicide. (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 solvent. (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 16-mesh or coarser.

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 as indicated below.

Preplant (Broadleaf and grass control)
Broadcast in spring after plowing at rate in Table). 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 prior to planting.

Preemergence (Broadleaf and grass control)

Apply during or shortly after planting, prior to 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.

Insert #12

TABLE 1

Broadleaf and Grass Weed Control on Corn* Soil texture Broadcast rate/A COARSE Sand, loamy sand, sandy loam <u>4 pt</u> MEDIUM 4.75 pt Silt and clay loam low in organic matter FINE Silt and clay loam with medium to high organic matter, clay (including the dark prairie soils of the Corn Belt) Peat, muck, high organic clay (postemergence only) 6 pt *Broadleaf weed control (eastern CB, western KS, western NE, NM, OK Pan Handle, west TX, and eastern WY): On sand, loamy sand, sandy loam, mild to strongly alkaline soil, and all recently leveled soil, apply 2.4 pt/A, either preplant or preemergence. Controls many broadleaf weeds including pigweed, lambsquarters, nightshade, purslane, and kochia. On other soil types in these areas, apply at rate in Table 1 for broadleaf and grass control.

Lay-by treatment (Broadleaf and grass control)
Broadcast 2-4 pt/A in a minimum of 5 gal. of water or
nitrogen solution, before weeds are 1.5 inches high and corn
is 20-30 inches high. When using nitrogen solutions, direct
the spray to lower 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: Broadcast 4 pt/A after weed emergence, but before weeds reach 1.5 inches in height. Add emulsifiable oil at rate of 1 gal/A for ground applications and 0.5 gal/A for aerial applications. Add oil concentrate at rate of 1 qt/A for ground applications.

Broadleaf control: Broadcast 2.4 pt/A for control of broadleaf weeds, such as annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Add emulsifiable oil at rate of 1 gal/A for ground applications and 0.5 gal/A for aerial applications. Add oil concentrate at rate of 1 qt/A for ground applications. Apply before pigweed and lambsquarters 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 rainfall, 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

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insecticides, herbicides, liquid fertilizers, and other materials is not recommended because they may cause compatibility problems and/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 tank. (2) Do not make more than one application per season except as recommended for control of yellow nutsedge and Canada thistle on this label.

Inself #1)

Insert *15

Center pivot sprinkle application - Freemergence or postemergence (C7, 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 ration 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 1/2-1 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 VAN DIEST SUPPLY CO. for more information on calibrating.

Precautions: (1) Apply this product only through center pivot irrigation systems. Do not apply this product through any other type of irrigation system. (2) Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. (3) If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. (4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place. (5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. (6) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. (7) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. (8) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock

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to prevent fluid from being withdrawn from the surply tank when the irrigation system is either automatically or manually shut down. (9) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. (10) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. (11) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. (12) Do not apply when wind speed favors drift beyond the area intended for treatment. (13) Inject ahead of any right angle turn in the main line and agitate pesticide supply tank to insure adequate mixing. (14) Application when drift may occur from windy conditions, when system joints and connections are leaking, or when nozzles are not providing uniform distribution patterns may cause crop injury. (15) Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

Ensert.

Insert / #20

Problem weeds — Insert #18
Yellow nutsedge and Canada thistle: This product will control, yellow nutsedge (Cyperus esculentus) and Canada thistle (Cirsium arvense) when applied according to use 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. When this product is applied postemergence to the weeds, acd 1 gal of emulsifiable crop oil or 1 qt of oil concentrate/A.

Insert-

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

- 1. Broadcast 4 pt 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 has been made.
- 2. Broadcast 4 pt/A preplant. Follow with an application of 4 pt 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. Broadcast 4 pt/A during or shortly after planting, but prior to crop or weed emergence. Follow with an application of 4 pt 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. Broadcast 8 pt plus 1 gal of emulsifiable oil or 1 qt of oil concentrate/A after crop emerges, but prior to 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. Broadcast 8 pt/A preplant (yellow nutsedge control only).
- 6. Broadcast 8 pt/A during or shortly after planting, but prior to crop or weed emergence (yellow nutsedge control only).

Note: Do not use emulsifiable oil or oil concentrate when corn is wet or under stress, especially when using Expt of this product/A. See "Precautions for applications with emulsifiable oil or oil concentrate in water" for additional directions.

Quackgrass control on land going into corn production Insert Split application: Broadcasta pt/A in fall or spring. Plow 1-3 weeks later. Broadcast a second application at #3 pt/A in spring before, during, or after planting, but before weeds are 1.5 inches high. This split application will weeds. Inser + #27 weeds. Inser + #26

Single application: Broadcast 6-8 pt/A in fall or spring. Plow 1-3 weeks later.

Precautions for all applications to corn: (14 Do not apply more than 8 pt/A of this product to corn in any one 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

Note for all applications to corn: Do not graze or feed forage from treated areas to livestock for 21 days following application __ Fosuf # 30

Rotational crops

Do not rotate to any crop except corn or sorghum unvil the following year, as injury may occur. (2) If applied after June 10, do not rotate with crops other than curn or sorghum the next year, as crop injury may occur. (3) If used at a rate higher than 6 pt/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 Inter-mountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use only when corn or sorghum is to "ollow 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 4 pt/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. (5) 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. See Corn section for weeds controlled.

Preplant (Broadleaf and grass control)

Broadcast in spring after plowing at rate in Table 2. 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 prior to planting.

Preemergence (Broadleaf and grass control)
Apply during or shortly after planting, but prior to weed or crop emergence at rate in Table 2.

TABLE 2
Preplant and Preemergence for Broadleaf
and Grass Weed Control in Sorghum*

	;	Organic	;	Broadcast
Soil texture	!	matter	;	rate/A
COARSE	;		:	DO NOT USE
Sand	!		:	(except for
loamy sand,	:	any level	:	preemergent use
sandy loam,	;		:	on bedded
sandy clay loam	;			sorghum in AZ
MEDIUM AND FINE		less than		and CA as
Silt loam,	;	1 %	;	indicated below)
clay loam	+	1-1.5%	;	3.2-4 pt Insert 43
clay	;	more than	:	
·	;	1.5%		4-4.75 pt - Insert #32

*Do not apply preplant in AL, AR, FL, GA, LA, MS, NC, MN, o_{R_f} SC, TN, and TX. Do not apply preemergence in NM, OK, and TX, except in northeast OK and the 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.

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Preemergence broadleaf control in furrow irrigated bedded sorghum (AZ and CA only)

For preemergence control of broadleaf weeds, including ground-cherry, lambsquarters, morningglory, mustard, pigweed, and purslane, broadcast 1.6-2.4 pt/A. Apply after bed preparation, during or after planting, but before sorghum and weeds emerge, and before the first furrow irrigation. Follow with several regular irrigations to thoroughly wet all soil. Use lower rate on coarse-textured soil and soil low in organic matter; use higher rate on fine-textured soil and soil high in organic matter.

Precautions for preemergence application to furrow irrigated bedded sorghum grown in AZ and CA: To avoid possible sorghum injury, do not use on sand or loamy sand soil or on sorghum planted in the furrow. Application to sorghum growing on alkali soil or where cuts, fills or erosions have exposed calcareous or alkali subsoil may cause crop injury. Do not replant sorghum for 8 months following application. Corn may be planted immediately.

Apply at rate in Table 3 before weeds exceed 1.5 inches in height. Apply up to "close-in."

Inself #35

TABLE 3 Postemergence Broadleaf and Grass Weed Control in Sorghum — Insert #36

	;	Minimum	;			
	:	sorghum height	:			
Soil texture	:	at treatment	:	Broadcast rate/A		
Sandy or leamy						
sand	:	DO NOT USE				
Sandy loam	;	See direction	ns fo	or broadleaf weed		
	;	control below	,			
Silt loam to	:		:			
sandy clay loam	;	Completely emerged	:	4-4.75 pt		
Diton and Pull-	:	At least 6	;			
man clay soil	:	inches high	;	4-4.75 pt		
Silty clay loam	:		;			
and finer	:	Completely emerged	i :	6 pt		
textured soil	:	-	:	·		

Frseit #37

Post emergence broadleaf control with emulsifiable nil or oil concentrate in water

Broadcast 2.4 pt/A for control of broadleaf weeds, including annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Apply before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and the desert regions of AZ, and CA, apply when sorghum is 6-10 inches in height, but before—boot stage. In all other areas, apply after sorghum reaches the 3-leaf stage. Add emulsifiable oil at 1 gal/A for ground applications and 0.5 gal/A for aerial applications. Add oil concentrate at 1 qt/A for ground applications.

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 control with surfactant (CO, western KS, NM, DK, TX, and desert regions of AZ and CA only)
Broadcast 2.4 pt plus 0.75-1.5 pt of surfactant/A after sorghum reaches 6 inches in height, but before weeds reach 1.5 inches in height. Apply only on sandy loam and finer textured soil.

Inser*34

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 (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 soils may result in crop injury. (3) Following harvest, plow (moldboard or disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to rotational spring-seeded crops regardless of rate used. (4) Injury may occur if both this herbicide, preplant or preemergence, and an at-planting systemic insecticide are used.

Inject40**

Rotational crops

See "Rotational crops" at end of Corn section.

Chemical Fallow

Wheat-Sorghum-Fallow

This treatment controls annual broadleaf and grass weeds following wheat harvest and in the following sorghum crop when grown under minimum tillage.

Apply 6 pt. 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 disturbance of the soil. 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.

Enseit #42 Pr cautions: (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.

Insert

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Frielt # 44

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

Wheat-Corn-Fallow (KS, NE)
This product controls cheatgrass (downy brome, chess),
kochia, mustards, pigweed, Russian thistle, wild lettuce,
wild sunflower, and volunteer wheat during period after
wheat harvest. Weed control may extend into following corn
crop grown under minimum tillage.

Apply with ground equipment only.

Follow directions for use, notes, and precautions in the "Wheat-Sorghum-Fallow" section above, substituting corn for references to sorghum.

Wheat-Fallow-Wheat (CO, KS, MT, NE, ND, SD, and WY) For preemergence control of cheatgrass (downy brome, chess), common lambsquarters, field pennycress, kochia, mustard, Russian thistle, wild lettuce, and suppression of volunteer wheat during fallow period of a wheat-fallow-wheat rotation, apply 1-2 pt in 10-40 gal of water/A for ground application, or in a minimum of 5 gal of water/A for aerial application, on all soils except those listed under "Precautions." For control of pigweed and wild sunflower, use the higher rate. Apply to stubble ground. Treat only once during same fallow period.

Boset #45

Precautions: (1) Do not use on sand soil. (2) Do not treat eroded hillsides, 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 6 months after application.

Insert #46

Rangeland

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

For ground applications, use a minimum of 10 gal of water/4. For aerial applications, use a minimum of 5 gal of water 4. See "Application Procedures" for additional information.

Establishment of perennial range grasses in Hest (CA, ID, NV, ΩR , UT, WA)

Apply 1.6-2 pt/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 for establishment of desirable range grasses, treated areas should not be grazed until the fall following seeding.

Renovation of existing stands of perennial range grasses Central Great Plains (CO, KS, MT, NE, ND, SD, WY): Apply 1-2 pt/A in fall before ground fremes.

Southern Great Plains (OK, TX): Apply 2 pt/A in spring before April 30.

West (CA, ID, NV, OR, UT, WA): Do not graze area to be treated for 6 months prior to application. Apply 1-1.5 pt/A by ground equipment in fall before ground freezes.

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

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

Warm season perennial range grasses - Midwest
Switchgrass and Big Bluestem
For control of many annual broadleaf and grass weeds
including cheatgrass, foxtails (giant, green, and yellow),
lambsquarters, pigweed, ragweed, and smartweed.

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 qt/A after planting but before weeds emerge. Prepare a good, firm seedbed. Plant 1/2 inch deep with a grassland 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, cultipack or roll after planting. Clip weeds that escape in July or August. Avoid clipping switchgrass or big bluestem seedlings.

Established stands: Apply 2 qt/A in April or early May, before weed emergence.

Note:

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

Rotational crops: See "Rotational crops" in Corn section.

Roadsides

To control certain annual weeds in established perennial grasses along roadsides in CO, KS, MT, NE, ND, SD, and WY, including cheatgrass (downy brome, chess), common (annual) broomweed, little barley, medusahead, sayewort, and tumble mustard, broadcast 2 pt/A in a minimum of 10 gallons of water by ground equipment in the fall before ground freezes, or after thawing in the spring, but before the established grasses green-up and before weeds emerge. Examples of desirable established grasses include big bluestem, bluegrama, bromegrass, buffalograss, crested wheatgrass, Indiangrass, little bluestem, side-oats grama, switchgrass, and Western wheatgrass. Apply only once per year. Temporary discoloration or other form of injury to the desirable perennial grasses may occur following application.

Note: To avoid illegal residues, (1) Do not cut or feed roadside grass hay. (2) Do not allow livestock to graze treated areas.

Sugarcane

For control of many annual broadleaf and grass weeds, including amaranths, crabgrass, fireweed, Flora's paintbrush, foxtails, junglerice, and wiregrass: Broadcast 2-4 qt in 20-50 gal of water/A for adequate coverage of the soil surface at time of planting or rationing, but before cane emerges. One additional application may be made over cane as it emerges, and two additional applications may be made interline after emergence as directed sprays.

For control of emerged pellitory weed (Florida only): Apply 0.8-1.2 pt 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 10 qt/A to any one crop of cane.

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

1. Apply 4 qt in 20-50 gal of water/A, preemergence, broadcast or banded. Follow with one or two broadcast or banded over-the-top applications as needed, postemergence to sugarcane and weeds, at 2 qt in 20-50 gal of water/A. Treat before weeds exceed 1.5 inches in height.

2. Apply 1-3 times as needed, at 2 qt in 20-50 gal of water/A either broadcast or banded over-the-top, postemergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.



Douglas Fir, Grand Fir, Noble Fir, White Fir, Logdepole Pine, Ponderosa Pine, and Scotch Pine

Annual broadleaf and grass weed control: Broadcast 2-4 qt in 20-40 gal/A between fall and early spring while trees are dormant or soon after transplanting. Apply before weeds are 1.5 inches tall.

Quackgrass control: Broadcast 4 qt/A in fall or early spring while trees are dormant and before quackgrass is more than 1.5 inches tall.

Insert # 47

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. Do not use near adjacent desirable plants or in greenhouses, or injury may occur.

Apply before or soon after weeds begin growth. Make postemergence 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 qt. of product; use more if practical.

Note: Do not allow livestock to graze treated areas, or illegal residues may result.

First #49

Annual broadleaf and grass weeds (including barnyardgrass, cheatgrass, crabgrass, lambsquarters, foxtail, ragweed, puncturevine, and turkey mullein): Broadcast 4.8-10 qt/A.

Hard-to-kill annual and many perennial broadleaf and grass weeds (including bluegrass, burdock, Canada thistle, dogfennel, orchardgrass, plantain, quackgrass, purpletop, redtop, and smooth brome): Broadcast 10-20 qt/A.

Hard-to-kill biennial and perennial weeds (including bullthistle and sowthistle): Broadcast 20-40 qt/A.

For longer residual control in regions of high rainfall and a long growing season, broadcast 20-40 qt/A.

For Small areas, 0.28 pt. per 1,000 sq. ft. is equivalent to 10 qt/A.

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