



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAR 17 1994

John M. Wise  
UNIVERSAL COOPERATIVES, INC.  
C/O DIANA WILLIAMS  
BOX 460  
MINNEAPOLIS, MN. 55440

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 10/01/93 in Response to PR Notice 93-7  
EPA Reg. No. 1990-499  
CO-OP WEED-OUT LO-VOL ESTER 6

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

**WHAT THIS ACCEPTANCE MEANS:**

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

**WHAT YOU NEED TO DO NEXT:**

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable  
Printed with Soy/Candle Ink on paper that  
contains at least 50% recycled fiber

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Page 2

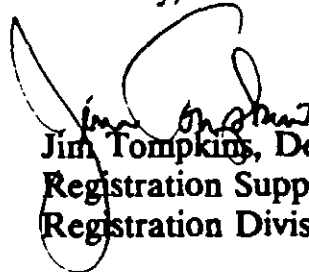
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs (7505C)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief  
Registration Support Branch  
Registration Division (7505W)

Attachment

UNIVERSAL COOPERATIVES, INC.  
C/O DIANA WILLIAMS  
1990-499 10/01/93  
CO-OP WEED-OUT LO-VOL ESTER 6  
Original Submission

EPA has determined that a "closed" mechanical transfer system is not required for 2,4-D products. In the personal protective equipment of your amended labeling, you may revise the statement to read as follows:

**CONTAINERS GREATER THAN 1 GALLON BUT LESS THAN 5 GALLONS:**  
"Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE."

EPA has determined that a "closed" mechanical transfer system is not required for 2,4-D products. In the personal protective equipment section of your amended labeling, you may revise the statement to read as follows:

**CONTAINERS 5 GALLONS OR MORE:** "A mechanical system (probe and pump) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], the handler PPE requirements may be reduced or modified as specified in the WPS."

Please conform with the special 2,4-D guidance issued by EPA on September 13, 1993 for adding WPS statements.

User Safety Recommendations must either be placed in a box or printed on the label in a contrasting color from surrounding text.

The headgear requirement for "applicators and other handlers" in the "Personal Protective Equipment" section on your proposed labeling is missing or incorrect. Remove the incorrect requirement (if any) and add "Chemical-resistant headgear for overhead exposure". The exact location is shown in Sections A and B on Part I of the Product Worksheet in Supplement Three-A to PR Notice 93-7.

UNIVERSAL COOPERATIVES, INC.  
C/O DIANA WILLIAMS  
1990-499 10/01/93  
CO-OP WEED-OUT LO-VOL ESTER 6  
Original Submission

Add the following statement to the "Personal Protective Equipment" section on your proposed labeling immediately following the statements requiring a closed system and enclosed cabs: "The closed systems and enclosed cabs must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.240(d)(4-6)]. The handler PPE requirements may be reduced or modified as specified in the WPS." The exact location is shown in Section A on Part 1 of the Product Worksheet in Supplement Three-A to PR Notice 93-7.

The Agricultural Use Requirements section must be located in a clearly separate box on the product labeling -- with lines or other graphic indicators (such as contrasting color) to separate the section from the surrounding text.

The headgear requirement for early entry in the Agricultural Use Requirements box on your proposed labeling is missing or incorrect. Remove the incorrect requirement (if any) and add "Chemical-resistant headgear for overhead exposure." The exact location is shown in Sections F and G on Part 2 of the Product Worksheet in Supplement Three-A to PR Notice 93-7.

Delete the crossed-out statements on your proposed label. They are redundant statements or phrases.

Correct the typographical errors circled on your proposed label.

EPA Reg. No. 1990-499  
EPA Est. No. 32761-MO-03

# FARMLAND

## Lo Vol Ester 6-Pound

A Selective Herbicide

*If you wish to retain, you must use WPS language*

### Caution

**Keep out of reach of children**

**PRECAUCION AL USUARIO:** Si usted no lee ingles, no use este producto hasta que le etiqueta haya sido explicado ampliamente.

Not for sale to or use by homeowners. Directions for Use See side panels for additional precautionary statements And directions for use.

**ACTIVE INGREDIENT:**  
Isooctyl Ester of 2,4-Dichlorophenoxyacetic acid\*.. 89.3%  
**INERT INGREDIENTS.....** 10.7%  
**TOTAL.....** 100.0%  
\*(Equivalent to 59.2% 2,4-Dichlorophenoxyacetic acid.) This product contains 5.66 pounds of 2,4-Dichlorophenoxyacetic acid per gallon. Isomer specific by AOAC Method No.6-D01-5.

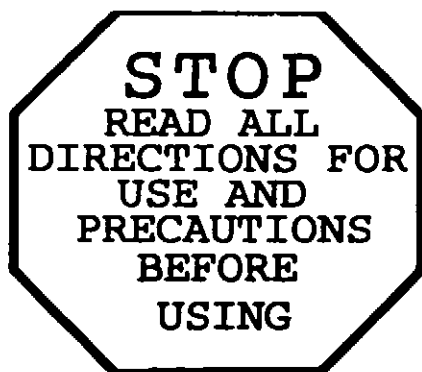
Net Contents: Gallons

Manufactured by Farmland Industries, Inc.  
General Offices Kansas City, MO 64116

Revision Date 9-24-93

ACCEPTED  
with COMMENTS  
in EPA Letter Dated  
**MAR 17 1994**

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 1990-499



**Precautionary Statements**

**Statement of Practical Treatment**

**If Swallowed:** Call a Physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering Syrup of Ipecac. Do not induce vomiting or give anything by mouth to an unconscious person.

**On Skin:** In case of contact with skin, wash with soap and water. Get medical attention if irritation persists.

**In Eyes:** For eyes, flush with water for 15 minutes and get medical attention.

**Hazards to Humans and Domestic Animals**

**CAUTION**

**Keep out of reach of children**

Harmful if swallowed. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

**Personal Protective Equipment (PPE):**

Applicators and other handlers (other than mixers and loaders) must wear:

- A. Coveralls over short-sleeved shirt and short pants
- B. Waterproof gloves
- C. Chemical-resistant footwear
- D. Protective eyewear
- E. Chemical resistant apron when cleaning equipment, mixing or loading.

Mixers and Loaders must wear:

- A. Coveralls over short-sleeved shirt and short pants.
- C. Waterproof gloves
- D. Chemical-resistant footwear plus socks
- E. Protective eyewear
- F. Chemical resistant apron when mixing or loading.

Follow Manufacturers' instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

**Engineering Controls Statements:**

**NOTE:** For containers of 5 gallons or more, a mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. The mechanical system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)]. The handler and PPE requirements may be reduced or modified as specified in the WPS.

A. When handlers use enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

B. The closed systems must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)] The handler PPE requirements may be reduced or modified as specified in the WPS.

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**\*\*\*User Safety Recommendations\*\*\***

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet
- Remove clothing immediately if pesticide gets inside. then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and put on clean clothing

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**Environmental Hazards**

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply when weather conditions favor drift from treated area. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

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**Directions for Use**

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency in your state responsible for pesticide regulation.

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**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses on this product that are covered by the Worker Protection Standard.

Do not enter or allow agricultural workers on farms and forests to enter into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- a. Coveralls over short-sleeved shirt and short pants
- b. Waterproof gloves
- c. Chemical resistant footwear plus socks
- d. Protective eyewear

PPE

During aerial application, human flaggers either must wear chemical resistant headgear, long-sleeved shirt, long pants, socks and shoes or are prohibited unless in enclosed vehicles.

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## Storage and Disposal

### Storage

Do not contaminate water, food, feed, seeds, fertilizer, insecticides, or fungicides by transportation, storage, disposal or cleaning of equipment. Do not store near other pesticides, fertilizers or seeds. Store only in the original container, tightly closed and in a locked and secure place away from children and pets. This product can be stored in an unheated building. However, Lo Vol Ester 6-Pound herbicide exposed to subfreezing temperatures should be warmed to at least 40 degrees F. and mixed thoroughly before using.

### Spill or Leak Procedures

In the event of a spill or leak, Make sure all personnel involved in spill cleanup follow good industrial hygiene practices. Small spills can be handled routinely. Cover the spill with an absorbent material such as vermiculite or sawdust to prevent dust. Sweep up the material and place in an appropriate chemical waste container. Seal container and dispose of according to "Pesticide" disposal instructions below. Wash the spill area with a saturated solution of sodium carbonate and a strong detergent. Flush the spill area with water to remove any residue.

### Disposal

Containers: 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. Do not reuse empty container.

Pesticide: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law and may contaminate groundwater. 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.

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## Conditions of Sale and Warranty

**Conditions of Sale:** This product is sold subject to and buyer and users are deemed to have accepted the terms contained in the Conditions of Sale and Warranty, Directions for Use and Precautionary Statements, which may be varied only by agreement in writing by a duly authorized representative of Farmland Industries, Inc.

**Inherent Risks:** 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 use of the product in a manner inconsistent with its labeling, all of which are beyond the control of Farmland Industries, Inc., or the seller. All such risks shall be assumed by the buyer.

**Warranty Limitations:** Farmland Industries, Inc., 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. Farmland Industries, Inc., makes no other expressed or implied warranty of fitness or merchantability or any other expressed or implied warranty.

**Limitation of Liability:** In no case shall Farmland Industries, Inc., or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. No claim of any kind shall be greater in amount than the purchase price of the product in respect of which such damages are claimed.



**Weed List**

Use Lo Vol Ester 6-Pound herbicide to control many broadleaf weeds including:

**Annual Weeds**

Beggarticks	Bitterweed	Broomweed	Burdock	Carrot (wild)
Carpetweed	Cinquefoil	Cockle	Cocklebur	Coffeeweed
Croton		Devil's claw	Fleabane (daisy)	Flixweed
Frenchweed		Galinsoga	Goatsbeard	Goosefoot
Jewelweed		Jimsonweed	Knotweed	Kochia
Lambsquarters		Lettuce (wild)	Mallow	Marijuana
Marshelder		Morningglory (annual)	Mustard	Parsnip
Pennycress		Peppergrass	Pigweed	Prickly lettuce
Primrose		Puncturevine	Radish (wild)	Ragweed (common)
Russian thistle		Shepherd's purse	Smartweed	Sneezeweed
Sowthistle		Spanish needles	Sunflower	Tumbleweed
Velvet leaf		Vervains	Vetch	Witchweed
Wormwood		Yellow starthistle		

**Biennial and Perennial Weeds**

Artichoke	Aster	Austrian Field Cress	
Bindweed	Blackeyed Susan	Blue Lettuce	Bull Thistle
Canada thistle	Catnip	Chicory	Clover (many types)
Dandelion	Docks	Dogbane	Garlic (wild)
Goldenrod	Ground Ivy	Gumweed	Heaiall
Hoary cress	Horsetail	Ironweed	Loco weed
Musk thistle	Nettles	Onion (wild)	Orange hawkweed
Parsnip (wild)	Plantains	Poverty weed	Ragweed
Rushes	Sowthistle	Stinging nettles	Strawberry (wild)
Swamp smartweed	Sweet potato (wild)	Tall buttercup	Toad flax
Vervains	Yellow rocket		

For best weed control at time of treatment, weeds should be small, actively growing and free of stress caused by extremes in climatic conditions, diseases, or insect damage. The response of individual weed species to Farmland Lo Vol Ester 6-Pound is variable. Consult your local county or state Agricultural Extension Service or crop consultant for advise.

**General Use Precautions**

Do not apply Lo Vol Ester 6-Pound herbicide directly to, or in the vicinity of or otherwise permit it to come into contact with cotton, soybeans, grapes, fruit trees, vegetables, flowers or other desirable crop or ornamental plants which are sensitive to 2,4-D herbicide. Do not permit spray mist containing it to drift on them, since even very small quantities of the spray, which may not be visible, can cause severe injury during both growing and dormant periods. Use coarse sprays to minimize drift.

Applications by aircraft, ground rig or hand dispenser should be carried out only when there is no hazard of spray drift potential. A spray thickening agent may be used with this product to reduce the potential of spray drift. Do not spray when the wind is blowing toward susceptible crops or ornamental plants.

Drift from this product may injure susceptible plants growing nearby. Do not use in or near a greenhouse. Excessive amounts of this herbicide in the soil may temporarily inhibit seed germination or plant growth. Do not contaminate irrigation ditches or water used for irrigation or domestic purposes. To avoid injury to desirable plants, do not handle or apply other agricultural chemicals with the same equipment used for Lo Vol Ester 6-Pound except as specified on this label. Do not store near fertilizers, seeds, insecticides or fungicides.

Local conditions may affect the use of herbicides. Consult your State Agricultural Experiment Station or Extension Service Weed Specialists for advice in selecting treatments from this label to best fit local conditions. Be sure that use of this product conforms to all applicable regulations. Apply this product only as specified on this label.

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

Do not replant fields treated with Lo Vol Ester 6-Pound in the same growing season with crops other than those labeled for 2,4-D use. Livestock should be restricted from feeding/grazing of treated cover crops.

**Ground Equipment**

The potential of spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; by using no more than 20 pounds spraying pressure with flat fan or flooding flat fan nozzle tips; by spraying when wind velocity is low and by stopping all spraying when wind exceeds 6 to 7 miles per hour. Do not apply with hollow cone-type nozzles that produce a fine droplet spray.

**Aircraft Applications**

The potential of spray drift can be reduced by applying no less than 3 gallons of spray per acre; by using no more than 20 pounds spray pressure at the nozzles; by using nozzles which produce a coarse spray pattern; and by the wind velocity is less than 5 miles per hour. Do not apply by aircraft when an air temperature inversion exists.

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**Use Directions**

Apply Lo Vol Ester 6-Pound as a water or oil spray during warm weather when weeds or brush are actively growing. Applications under drought conditions often will give poor results. Use low spray pressure to minimize spray drift potential. On cropland and along roadsides, do not exceed 20 psi pressure. Apply enough spray volume to provide uniform coverage of weeds, usually 5 to 20 gallons per acre by ground equipment and 3 to 5 gallons per acre by aircraft.

Higher gallonage may be used if desired to improve spray coverage and reduce the potential of spray drift. Generally, the lower dosages recommended on this label will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species and under conditions where control is more difficult, the higher dosages will be needed. For crop uses, do not mix with oil or other adjuvants unless specifically recommended on this label. Deep rooted perennial weeds such as Canada thistle, field bind weed, and many woody plants usually require repeated applications for maximum control.

Do not apply Lo Vol Ester 6-Pound where spray drift may contact nearby susceptible crops or other desirable plants or may contaminate water for irrigation or domestic use. Do not apply in the vicinity of 2,4-D sensitive crops or ornamental plants since vapors from this product may cause injury to such crops or plants. Read and follow all Use Precautions given on this label.

Note: If there are uncertainties concerning special local use situations, specific crop variety tolerances to 2,4-D, the use of rain drop nozzles, or controlled droplet applicators, consult your Agricultural Experiment Station or Extension Weed Specialist for advice.

Adding oil, wetting agent, or other surfactant to the spray may increase effectiveness on weeds, but may result in crop damage and should only be used as directed on this label or where crop damage can be tolerated.

To Prepare the Spray: (1) Fill the spray tank about half full with water, then add the required amount of Lo Vol Ester 6-Pound with agitation, and finally the rest of the water. Note: Lo Vol Ester 6-Pound in water forms an emulsion which tends to separate, especially in hard water, unless the mixture is kept agitated. Keep the solution agitated during use. (2) If oil is added, first mix the Lo Vol Ester 6-Pound and the oil and then add this mixture to the water with agitation. However, with adequate agitation, the oil can be added after the Lo Vol Ester 6-Pound is mixed in the water. (3) If oil alone is used as the carrier, a solution is formed and separation does not occur. Do not allow any water to get into the oil-herbicide mixture to avoid formation of an invert emulsion.

Compatible crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may increase the herbicidal effectiveness of 2,4-D on certain weeds and may be added to the spray tank. Read and follow all directions and precautions on this label and on all labels of adjuvants or fertilizers mixed with this product.

**Use in Liquid Nitrogen Fertilizer**

Lo Vol Ester 6-Pound may be combined with liquid nitrogen (non-pressure) fertilizer suitable for foliar application to accomplish weeding and feeding of corn, small grains, or grass pastures in one operation. Use Lo Vol Ester 6-Pound in accordance with recommendations for these crops as given on this label. Use liquid fertilizer at rates recommended by supplier or State Extension Service personnel. Fill the spray tank about half full with the liquid fertilizer, then add the Lo Vol Ester 6-Pound with agitation and complete filling the tank with fertilizer. Apply immediately and continue agitation in the spray tank during application. Application during very cold weather (near freezing) is not advisable. Do not store the spray mixture.

**Recommendations for Use in Crops**

(Do not apply this product through any type of irrigation system)

Crops	Amount Per Acre	Directions
Corn (postemergent)	1/3 pint	Spray when weeds are small and crop is 4 to 12 inches tall. Use drop nozzles when corn is more than 8 inches tall or beyond the 5-leaf stage to keep the spray off the corn foliage.
	1/2 to 2/3 pint	Application of 1/2 to 2/3 pint may be needed to control resistant weeds but crop injury is more likely.
Corn (preharvest)	2/3 to 1-1/3 pint	Apply by air or ground equipment after the hard dough or denting stage to suppress perennial weeds, decrease weed seed production, and control tall weeds such as bindweed, cocklebur, dogbane, jimsonweed ragweed, sunflower, velvetleaf and vines that interfere with harvesting. Do not forage or feed corn fodder for 7 days following application.

Grain sorghum (milo)                      1/3 pint                      Spray when weeds are small and crop is 4 to inches tall. Use postemergence drop nozzles when sorghum is more than 8 inches tall. Do not spray before sorghum is 4 inches tall nor during boot, flowering or early dough stage.

Do not use with atrazine. Do not apply from the tasseling to dough stage in corn. Crop injury is more likely to occur if corn or sorghum is growing rapidly under high temperature and high soil moisture conditions. In such cases use the flower rate. To reduce breakage of stalks from temporary brittleness caused by 2,4-D, delay cultivation for 8 to 10 days after treatment.

**Note:** Hybrids vary in response to 2,4-D and some are easily injured. Spray only varieties known to be tolerant to 2,4-D. Contact seed company and Extension Service Weed Specialists for this information.

**Small Grains Not Underseeded With a Legume**

Crops	Amount Per Acre	Directions
Wheat, Barley, Rye (fall seeded)	1/3 to 1/2 pint	Apply in the spring after full tiller but before boot stage. Do not treat in fall. Do not apply from boot to milk stage or in seedling stage. Do not forage or graze treated grain fields within 2 weeks after treatment with 2,4-D. Do not feed treated straw to livestock.
	2/3 to 1-1/3 pint	For wild onion and wild garlic. These rates may injure the crop.
Wheat, Barley, Rye (spring seeded)	1/3 to 2/3 pint	Apply after full tiller (usually 4 to 8 inches) but before boot stage. Do not apply from boot to milk stage. Do not forage or graze treated grain fields within 2 weeks after treatment with 2,4-D. Do not feed treated straw to livestock.
Wheat, Barley, Rye (preharvest)	2/3 to 1-1/3 pint	Apply when grains are in the hard dough stage to control large weeds that may interfere with harvest. Best results are obtained when weeds are growing vigorously. Do not forage or graze treated grain fields within 2 weeks after treatment. Do not feed treated straw to livestock.
Grain stubble for wild garlic	1-1/3 to 2 quarts	Apply following harvest as wild garlic often produces new growth. Do not forage for 7 days following application. Do not plant to any crop until 3 months after treatment or until chemical has disappeared from soil.

Water is recommended to make up the spray. The use of the higher rates in special situations to handle difficult weed problems is more likely to cause crop injury.

Livestock should be restricted from feeding/grazing of treated cover crops. Do not feed treated straw to livestock. When using high rates in special situations, consult your State Weed Specialist for recommendations to fit local conditions.

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**Rangeland and Grass Pastures**

Weeds	Amount Per Acre	Directions
Weeds	2/3 to 1-1/3	Apply when weeds are small and actively quart growing. Spray perennials when in the bud stage. The lower rate can be used for susceptible species.
Special broadleaf weeds such as bitterweed, broomweed, croton, docks, kochia, marshelder	1 to 1-1/3 quart	Use adequate water to provide uniform application. (See General Use Precautions for volumes of water.)
Musk thistle	1 quart 1-1/3 quart	In spring in rosette stage before stalk lengthens and plants have bolted. After bolting or in late fall or winter. Treatment after bolting will give variable, inconsistent control.
Wild garlic, wild onion	1-1/3 to 2 quart	Make 3 applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring. Do not forage for 7 days following application.

If weeds are young and growing actively, 2/3 quart per acre will provide control of some species. Deep-rooted perennial weeds may require repeated treatments in the same year or in subsequent years. Legumes such as clover or alfalfa may be damaged.

Livestock should be restricted from feeding/grazing of treated cover crops. Do not graze to dairy animals within 7 days after treatment. Do not harvest grass cut for hay for a minimum of 30 days after application. Meat animals must be segregated from treated pastures and rangeland grasses for a minimum of 3 days before slaughter.

Do not apply to newly seeded areas or after heading begins. Do not apply to grass when in boot to milk stage. Do not apply to bent or susceptible grass pastures.

Crops	Amount Per Acre	Directions
Grass seed crops	2/3 to 1 pint	Use sufficient water to give uniform application by ground or air, (see General Use Precautions for volumes of water to use.) Apply to established stands in spring from the tiller to early boot stage. Can be applied in spring or fall.
Newly Sprigged Coastal Bermudagrass	2/3 to 1-1/3 quart	Spray pre-emergence and/or postemergence.

Do not spray from early boot to milk stage. New spring seedlings can be treated with the lower rate after the grasses have at least five leaves. Perennial weed regrowth can be treated in the fall. Do not use on bentgrass unless injury can be tolerated. For best results apply spray when soil moisture is adequate.

**Noncrop Areas**

Site	Amount Per Acre	Directions
Fence rows, lawns, air fields, roadsides roadsides, vacant lots, drainage ditches	1 to 2 quarts	Use the amount of water needed for uniform application. (See General Use Precautions for volumes of water to use.) Usually 1-1/2 quarts provide good weed control under average conditions.

Treat when weeds are young and growing well. Do not use on golf greens nor on dichondra or other broadleaf herbaceous ground covers. Do not use on creeping grasses such as bent and St. Augustine except for spot treating, nor on newly seeded turf until grass is well established. Reseeding of treated areas should be delayed following treatment. With spring application, reseed in the fall; with fall application, reseed in the spring. Legumes are usually damaged or killed, so do not treat areas where the legumes are desired. Deep-rooted perennial weeds may require repeated treatments in the same season or in subsequent years.

**Note:** Livestock should be restricted from feeding/grazing of treated cover crops.

Site	Amount Per Acre	Directions
Forest Conifer Release	1 to 2 quarts in 8 to 25 gallons of water	After northern conifers such as jack pine, red pine, black spruce and white spruce harden off in late summer, the spray may be applied by air to control competing hardwood species such as alder, birch, aspen, etc. This treatment may cause occasional conifer injury. Consult your Extension Forester for recommendations to fit local conditions.
Spot Treatment in noncropland areas	1/6 pint per 3 gallons spray	Spray when weeds are small and thoroughly wet all foliage.

Keep spray mixture agitated to prevent separation. Do not spray onto or near or let the spray drift onto susceptible plants.

**Note:** Livestock should be restricted from feeding/grazing of treated cover crops.