

1103 1990-116

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

14 AUG 1992

Roger Unruh
Farmland Industries, Inc.
P.O. Box 7305
Kansas City, MO 64116

Dear Mr. Unruh:

Subject: Revised Label Text
Lo-Vol Ester 4-Pound
EPA Registration No. 1990-76
Your Submission Dated April 28, 1992

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

- 1) Due to new EPA policy, part of the Environmental Hazards section has been changed. To comply, change the sentence "Do not apply to water or wetlands (swamps, bogs, marshes and potholes)" to read "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark."
- 2) Under the Use Directions, reinstate the spray volume by air to 3 - 5 gallons.

We acknowledge the requested name change and recognize the official name of this product to be "Lo-Vol Ester 4-Pound." Please use this name in all future correspondences with the Agency regarding this product. A stamped copy is enclosed for your records. Please submit five (5) final printed copies for the referenced label, incorporating the above changes.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

CONCURRENCES

SYMBOL	H7505C						
SURNAME	D. KENNY						
DATE	8/13/92						

EPA Reg. No. 1990-76
EPA Est. No. 32761-MO-03

Farmland

Lo Vol Ester 4-Pound

A Selective Herbicide

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
See inside of booklet for additional
precautionary statements and directions for
use

Active Ingredient:	
Isocetyl Ester of 2,4-Dichlorophenoxyacetic acid*	67.3%
Inert Ingredients	32.7%
Total	100.0%

*(Equivalent to 44.6% 2,4-Dichlorophenoxyacetic acid)
This product contains 3.87 pounds of 2,4-Dichlorophenoxyacetic acid per gallon
Isomer specific by AOAC Method No. 6001-5

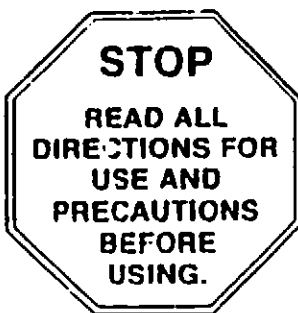
Net Contents: 1 Gallon

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

ACCEPTED
with COMMENTS
by EPA Letter dated:

14 AUG 1992

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, this product is registered under FIFRA No. 1990-76



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. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not wear contaminated shoes.

Protective Clothing: When handling this product, wear chemical-resistant gloves.

Environmental Hazards

This product is toxic to aquatic invertebrates. Grit or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply when weather conditions favor drift from treated area. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). 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.

Directions For Use

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

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

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... however, Lo Vol Ester 4-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.

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 4-Pound herbicide to control many broadleaf weeds including

Annual Weeds

Beggarticks	Fleabane (daisy)	Lettuce (wild)	Primrose	Turnpleweed
Bitterweed	Flixweed	Mallow	Puncturevine	Velvet leaf
Broomweed	Frenchweed	Marshelder	Radish (wild)	Vervain
Burdock	Gnatsoga	Marijuana	Ragweed (common)	Vetch
Carpenterweed	Goatshead	Morningglory (annual)	Russian thistle	Wild carrot
Cupressol	Goosefoot	Mustard	Shepherd's purse	Witchweed
Cockle	Jewelweed	Parsnip	Smartweed	Wormwood
Cocklebur	Jimsonweed	Pennycress	Sneezeweed	Yellow starthistle

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Coleseed	Kochia	Peppergrass	Sowthistle (common)	
Croton	Knotweed	Pigweed	Spanish needles	
Devil's claw	Lambsquarters	Prickly lettuce	Sunflower	
Biennial and Perennial Weeds				
Artichoke	Chicory	Hoary cress	Ragweed	Vervains
Aster	Clover (many types)	Horsetail	Rushes	Yellow rocket
Austrian field cress	Dandelion	Ironweed	Sowthistle	Wild garlic
Bindweed	Docks	Loco weed	Stinging nettles	Wild onion
Blackeyed susan	Dogbane	Musk thistle	Strawberry (wild)	Wild parsnip
Blue lettuce	Goldenrod	Nettles	Swamp smartweed	Wild sweet potato
Bull thistle	Ground ivy	Orange hawkweed	Tall buttercup	
Canada thistle	Gumweed	Plantains	Tan Weed	
Catnip	Healall	Poverty weed	Toad flax	

General Use Precautions

Do not apply Lo Vol Ester 4-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 from 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 4-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.

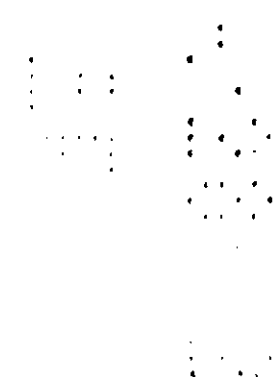
Ground Equipment

The potential for 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 insecticide or other nozzles that produce a fine droplet spray.

Aircraft Applications

The potential for 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 spraying only when 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 4-Pound as a water or oil spray during warm weather when weeds or brush are actively growing. Application 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 1 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. Deep-rooted perennial weeds such as Canada Thistle, field bindweed, and many woody plants usually require repeated application for maximum control. Do not apply Lo Vol Ester 4-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.

Notes: If there are uncertainties concerning special local use situations, specific crop variety tolerances to 2,4-D, or the use of raindrop 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 4-Pound with agitation, and finally the rest of the water. **Note:** Lo Vol Ester 4-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 4-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 4-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.

Use in Liquid Nitrogen Fertilizer:

Lo Vol Ester 4-Pound may be combined with liquid nitrogen (nonpressure) fertilizer suitable for foliar application to accomplish weeding and feeding in corn, small grains, or grass pastures in one operation. Use Lo Vol Ester 4-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 4-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 (post emergent)	1/2 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
	3/4 to 1 pint	Application of 3/4 to 1 pint per acre may be needed to control resistant weeds but crop injury is more likely

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Corn (preharvest)	1 to 2 pints	Apply after the hard dough or denting stage by air or ground equipment to suppress perennial weeds, decrease weed seed production, and control tall weeds such as bindweed, cocklebur, dogbane, jimsonweed, ragweed, sunflower, velvet leaf and vines that interfere with harvesting. Do not forage or feed corn fodder for 7 days following application.
Grain sorghum (milo) post emergence	½ to 1 pint	Spray when weeds are small and crop is 4 to 12 inches tall. Use 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, oil or other adjuvants. 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 lower 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)	½ to ¾ 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.
	1 to 2 pints	For wild onion and wild garlic. These rates may injure the crop.
Wheat, Barley, Rye (spring seeded)	½ to 1 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)	1 to 2 pints	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	2 to 3 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. Do not feed treated straw to livestock. When using high rates in special

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situations consult your State Weed Specialist for recommendations to fit local conditions.

Rangeland and Grass Pastures

Weeds	Amount Per Acre	Directions
Weeds	1 to 2 quarts	Apply when weeds are small and actively growing. Spray perennials when in the bud stage. The lower rate can be used for susceptible species.
Special broadleaf weeds such as bit-terweed, broom-weed, croton, docks, kochia, marshelder	1½ to 2½ quarts	Use adequate water to provide uniform application. (See General Use Precautions for volumes of water.)
Musk thistle	1½ quarts 2 quarts	In spring in rosette stage before stalk lengthens and plants have bolted. In spring after bolting or in late fall or winter. Treatment after bolting will give variable, inconsistent control.
Wild garlic, wild onion	2 to 3 quarts	Make 3 applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring.

Legumes such as clover or alfalfa may be damaged. 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.

If weeds are young and growing actively, 1 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.

Crops	Amount Per Acre	Directions
Grass seed crops	1 to 1½ pints	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 bermu-dagrass	1 to 2 quarts	Spray preemergence and/or postemergence.

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

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Noncrop Areas

Site	Amount Per Acre	Directions
Fence rows, lawns, airfields, roadsides, vacant lots, drainage ditches	1½ to 3 quarts	Use the amount of water needed for uniform application. (See General Use Precautions for volumes of water to use.) Usually 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.

Site	Amount Per Acre	Directions
Forest conifer release	1½ to 3 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 State Extension Forester for recommendations to fit local conditions.
Spot treatment in noncropland areas	¼ 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.

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