Reg # 5905-90 PM-23 File 1911

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

JAN 31 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Beverley Neale
HELENA CHEMICAL CO
6075 Popular Ave - Suite 500
Memphis, TN 38119

Subject: Label Amendment Submission of 09/02/93 in Response to PR Notice 93-7
EPA Reg. No. 5905-90
HELENA BRAND 2,4-D LV ESTER

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.

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

3 9 11

2,4-D LV ESTER 4

ACTIVE INGREDIENTS:	BY WT.
*Isooctyl ester of 2,4-Dichlorophenoxyacetic acid	65.5%
INERT INGREDIENTS:	34.5%
TOTAL	100.0%

*2,4-Dichlorophenoxyacetic Acid equivalent 43.5% - 3.76 lbs. per gallon.
Isomer specific by AOAC method 6.D01-5.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See Side Panels for Additional Precautionary Statements.

EPA REG. NO. 5905-90
EPA EST. NO.

NET CONTENTS:

MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TN 38119

ACCEPTED
with COMMENTS
In EPA Letter Dated
JAN 31 1994
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 5905-90

PRECAUTIONARY STATEMENTS

CAUTION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing. May produce skin sensitization reaction in certain individuals. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

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. Do not induce vomiting or give anything by mouth to an unconscious person.

IF ON SKIN: Wash 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.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, or viton.
- Shoes plus socks
- Protective Eyewear
- Chemical-resistant apron when cleaning equipment, mixing or loading

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

Engineering Control Statements

If this container contains over 1 gallon and less than 5 gallons, mixers and loaders who do not use a closed 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.

If this container contains 5 gallons or more in capacity, a closed 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. 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 PPE requirements may be reduced or modified as specified in the WPS.

When handlers use enclosed cabs or aircraft in a manner that meets 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.

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 change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not contaminate water when disposing of equipment washwaters.

GROUNDWATER CONTAMINATION

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.

CHEMIGATION PROHIBITION

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

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and 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 re-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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.

Do not enter or allow worker entry 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:

Coveralls
Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, or viton.
Shoes plus socks
Protective Eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies wh this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. K children and pets out of treated area until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Protect from freezing. If stored below 32°F and crystals form, warm to 72°F for 24 hours, periodically rolling drum to reconstitut

Do not use, pour, spill, or store near heat or open flame.

PESTICIDE DISPOSAL:

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a vi tion of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by u according to label instructions, contact your State Pesticide or Environmental Control Agency, o Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL:

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.

Plastic: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by bu ing. If burned, stay out of smoke. This product can reach groundwater as a result of mixing and loading. To minimize groundwater contamination from spills during mixing, loading, and cleanin equipment, take the following steps:

Mixing and Loading:

The mixing and loading of spray mixtures into the spray equipment must be carried out on an imp ous pad (i.e., concrete slab, plastic sheeting) large enough to catch any spilled material. If spills o contain the spill by using an absorbent material (e.g., sand, earth, or synthetic absorbent). Dispos the contaminated absorbent material by placing in a plastic bag and following disposal instructio this label.

Triple rinse empty containers and add the rinsate to the mixing tank.

Cleaning of Equipment: When cleaning equipment, do not pour the washwater on the ground; or drain over a large area away from wells and other water sources.

OBSERVE THESE PRECAUTIONS

Avoid application of spray or drift of spray to desirable plants, as this product may injure cotton, tomatoes, beans, peas, most vegetables, ornamentals, grapes, or others. Even minute quantities o

spray may cause severe injury. Accordingly application by airplanes should be made only when there is no hazard from drift. All sprays are likely to drift under certain conditions. The finer the spray, the greater the likelihood of drift effect. Coarse sprays are less likely to drift.

Use only amount needed. **DO NOT OVERDOSE.**

Since vapors of the ester in this product may injure susceptible plants in the vicinity, use only where there is no danger from such vaporization.

Be sure that airplane spraying equipment has a quick-acting, effective cutoff valve, and is used from the lowest possible altitude by an aircraft operator experienced in the application of herbicides.

Do not use same equipment for other purposes. If necessary to use sprayer for any other spraying, be sure to thoroughly clean all equipment with a suitable chemical cleaner. (1 qt. household ammonia in 20 to 25 gals. water - let stand overnight, then rinse thoroughly with water).

Do not store or place near fertilizers, seeds, plant insecticides, or fungicides.

Excessive amounts of 2,4-D LV Ester 4 in the soil may temporarily inhibit seed germination or plant growth.

A selective, emulsifiable or oil-miscible herbicide
FOLLOW DIRECTIONS CAREFULLY

Always mix with water or oil (heater oil or diesel fuel recommended) so as to apply the recommended amount of 2,4-D LV Ester 4 per acre in the amount of material necessary to cover an acre with the spraying equipment used.

Apply 2,4-D sprays at low pressures of approximately 30 to 50 pounds with nozzles adjusted to give a coarse, wetting, fan-shaped spray. For airplane application, adjust nozzles to produce a coarse, wetting spray of large droplets.

For best results, apply 2,4-D sprays when soil and climatic conditions are conductive to rapid growth. This product may be applied when temperatures range from 50°F to 95°F; results may be unsatisfactory below 65°F and above 95°F. Sprays applied under adverse conditions (abnormally cool or hot and dry weather or when weeds are near maturity) should contain maximum recommended dosage. Under such conditions, control results may not always be entirely satisfactory.

Recommendations given are general. Because of varietal and local conditions, consult Agricultural Experiment Station or Extension Service weed specialists.

AMOUNTS OF SPRAY MIXTURE TO APPLY

AIRPLANE APPLICATION - Water - Dilute recommended amount of 2,4-D LV Ester 4 in 3 to 5 gallons of water and apply per acre. **Oil** - Dilute recommended amount in 1 gallon of heater oil or diesel fuel and apply per acre.

GROUND SPRAYERS - Dilute recommended amount in 8 to 20 or more gallons of water and apply per acre. The amount of water required will depend upon the crop and type of equipment used.

Thorough agitation of spray mixture is necessary for best results.

	CONVERSION TABLE					
2,4-D Acid Required	1 lb.	3/4 lb.	1/2 lb.	3/8 lb.	1/4 lb.	1/8 lb.
Amount 2,4-D LV Ester 4 to use	2 pts.	1-1/2 pts.	1 pt.	3/4 pt.	1/2 pt.	1/4 pt.

TO CONTROL WEEDS IN RESISTANT CROPS

The following dosages are suggested on growing crops for the control of susceptible weeds such as mustard, sunflower, lambsquarters, pigweed, ragweed, docks, cocklebur, sow thistle, marsh elder, and many other species. Perennial weeds are best killed when in bud or in early bloom stage of growth.

WHEAT, OATS, BARLEY, and RYE - 2,4-D sprays applied during seeding stage may reduce yields. When crop plants are tillering (stooling), use 1/2 to 3/4 pints of 2,4-D LV Ester 4 per acre and a maximum of 1 pint per acre when fully tillered (stooled). Sprays containing 1 to 2 pints per acre may be applied as an emergency weed control measure when seed in heads is past dough stage. Sprays applied after early boot stage and up to the dough stage may reduce yields. Do not forage or graze treated grain fields within two weeks after treatment with 2,4-D. Do not feed treated straw to livestock. Fall Applications are not recommended.

CORN and SORGHUM - 2,4-D sprays may cause injury to stalks such as lodging, bending, and brittleness. The condition of brittleness may last 5 to 7 days during which time stalks are subject to breakage by high winds and cultivation. Avoid cultivating while this condition prevails. Plants generally recover from lodging or bending. Crops are most susceptible to injury during periods of rapid growth, but do not apply from tasseling to dough stage.

SORGHUM may be seriously injured - spray only when 4 to 12 inches tall. Pre-emergence sprays are not recommended.

Pre-emergence - On loam and finer textured soils, annual grasses, and some tolerant broadleaved weeds such as purslane can be controlled with 1 to 2 quarts of 2,4-D LV Ester 4 applied before corn emergence. Do not treat corn planted in sandy soil. Heavy rains after treatment may cause some injury to germinating seeds and result in some early crop stunting. To reduce this risk, plant corn one inch deeper than normal (2-1/2 to 3 inches). For band spraying, (14 inch band with 40 inch corn rows) use 1/2 dosage listed.

Post-emergence - Apply 1/2 pint of 2,4-D LV Ester 4 per acre. Spray as soon as majority of weeds are actively growing, but do not apply while corn is tasseling. Use extension nozzles to direct sprays away from the leaves of corn and sorghum that are 8 inches or more high.

RICE (Use only where low volatile ester formulations of 2,4-D are recommended by state and local

authorities) - To control coffeebean, dry indigo, redstem, ducksalad, spikerush, umbrella sedge, gooseweed, arrowhead, water hyacinth, and smartweed in rice apply 2,4-D LV Ester 4 at 1 to 2 pints per acre any time after rice is well tillered but before the jointing or boot stage (4 to 8 weeks after emergence; or where flooded, treat between 7 and 9 weeks after seeding when plants have emerged above water and leaves are standing erect). Rice plants are sensitive to 2,4-D in the early seedling, boot, and early heading stages; avoid applications of 2,4-D LV Ester 4 during these stages of growth. Avoid drift to cotton or other 2,4-D susceptible crops.

ESTABLISHED PASTURES, FIELD, and RANGE GRASSES - For control of most annual and many perennial broadleaved weeds use 1 to 2 pints per acre of 2,4-D LV Ester 4, depending on the susceptibility of weeds. Apply in sufficient water for uniform coverage of weeds. Use the lower rate for easy to kill annual weeds and apply while they are small. Repeat if new weeds appear. Either spring or fall applications may be made.

For perennial weeds such as bindweed, Canada thistle, St. Johnswort and garlic use 2 to 4 pints per acre of 2,4-D LV Ester 4. In general spray spring weed growth to bud stage and again on fall regrowth. Repeat applications for two or more successive years may be needed to control some weeds.

Keep dairy animals off treated areas for 7 days after treatment. Do not slaughter for meat animals for 3 days after treatment. Do not harvest grass cut for hay for 30 days after treatment. Do not spray seedling grass, nor while grass is in boot to milk stage. Do not mow grass within two days before or following treatment. In some areas bent, carpet, and buffalo grasses are susceptible to injury. Most legumes will be killed or injured with these rates of treatment.

TO CONTROL WEEDS ON GOLF COURSES, CEMETERIES, PARKS, AND OTHER LARGE TURF AREAS

Apply sprays containing 2 pints of 2,4-D LV Ester 4 per acre for most broadleaved weeds. Seedling grasses should not be sprayed until root systems are established and a sod has been formed. Some injury to clover, creeping bent grass, and St. Augustine grass may occur.

NOTES FOR ALL TURF SITES: (excluding sod farms)
The maximum number of broadcast applications per treatment site is 2 per year.

DEEP ROOTED PERENNIALS AND WOOD PLANTS ON NON-CROPPED AREAS

(fence rows, vacant lots, power lines)

Apply sprays containing 2 pints of 2,4-D LV Ester 4 per acre for control of most broadleaved weeds. Wet all the weed foliage thoroughly. Deep rooted perennial weeds such as bindweed, Canada thistle, hoary cress, and poison ivy may require 2 to 4 pints per acre and repeat applications may be necessary as new growth appears.

EMERGENT and MARGINAL AQUATIC WEEDS - To control arrowhead, creeping water primrose, water lily, lotus, pickerelweed, smartweed, spatterdock, and waterwillow in ponds, lakes, and drainage ditch banks, apply 2,4-D LV Ester 4 at 1 to 4 pints per acre in sufficient water to thoroughly spray all foliage. For spot treatment, mix 4 ounces 2,4-D LV Ester 4 per gallon of water.

Apply first spray before bud or heading stage of weeds and repeat as necessary on regrowth. The addition of a surfactant or wetting agent to the spray solution may be advisable when application is made on more mature plants.

To control bulrush, cattail, sweetflag, buttonbrush, and willow apply 1 to 1-1/2 pints 2,4-D LV Ester 4 in 150 to 300 gallons kerosene per acre. For spot treatment, mix 8 ounces 2,4-D LV Ester 4 per gallon of kerosene. Thoroughly spray all foliage before seed is formed and repeat as necessary on regrowth. Avoid spray drift on 2,4-D susceptible crops.

Treat only 1/3 to 1/2 of the water area in a single operation. Decaying vegetation depletes the oxygen content of water and will result in fish kills if extensive areas are treated at one time. Consult your state fish and game agency before applying this product.

TO CONTROL WOODY PLANTS

BRUSH - Sprays containing 2 to 4 pints of 2,4-D LV Ester 4 in 50 to 100 gallons of water per acre can be used on such plants as poison ivy, sumac, poison oak, wild grape, sage brush, and tree regrowth, when in full leaf. Cover vegetation completely. Such plants as sage brush that occur abundantly over large areas have been successfully sprayed by airplane, using sprays containing 2 to 4 pints in 1 to 2 gallons of oil per acre. Repeat application if new growth appears. Use Helena Brush Killer for general brush control.

LARGE TREES - On unwanted wild cherry, buck brush, willow, cottonwood, and certain others, use sprays containing 2 to 4 pints of 2,4-D LV Ester 4 in 100 gallons of water and spray the leaf area thoroughly. If growth is above 5 or 6 feet, cut close to the ground and spray the stump thoroughly with a solution of 4 pints of 2,4-D LV Ester 4 in 100 gallons of kerosene or fuel oil.

Small quantity usage - Thoroughly mix 1-1/2 to 2 teaspoons of 2,4-D LV Ester 4 in 1 gallon of water. Use a knapsack or compressed air type sprayer and apply sufficient spray to wet the weed foliage.

THIS CONTAINER IS NONRETURNABLE.

CONDITIONS OF SALE - LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man, or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of

this product is a claim for damage and in no event shall damages or any other recovery of any kind against the Company exceed the price of the product which causes the alleged loss, damage, injury, or other claim. The Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income.

The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability, and remedies.