



005905-00090-050599

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**Systems Integration Group, Inc.**

MAY 5 1999

Ms. Judy Smith  
Helena Chemical Company  
6075 Poplar Avenue, Suite 500  
Memphis, TN 38119

Dear Ms. Smith:

Subject: Label Amendment Extending 2,4-D Use in Reduced or No-Tillage Soybeans  
(Pre-plant Only)  
2,4-D LV Ester 4  
EPA Reg. No. 5905-90  
Your Application Dated April 14, 1999

The Agency is conditionally approving an amendment to the registration of the above-referenced product under the authority of section 3(c)(7)(B) of the Federal Insecticide, Fungicide Act (FIFRA). This amendment allows use of the subject product on reduced or no-tillage soybeans (pre-plant only) with a maximum permissible level for residues of the herbicide in or on soybeans of 0.1 ppm. This amendment will expire automatically on December 31, 2001. In addition, during the period that this amendment is effective, it will be subject to the conditions listed below:

- 1) This acceptance is based on your certification that the submitted labeling on preplant soybean use is an exact copy of the labeling accepted by the Agency on March 15, 1996. Please note that the acceptance of this labeling pertains to the previously approved preplant soybean use only and does not signify the acceptance of any other labeling revisions. No other label revisions are being reviewed or considered with this action. You should also note that if you fail to satisfy the conditions imposed in this certification, EPA may issue a notice to cancel this amendment under FIFRA section 6(e).
- 2) This conditional registration will expire automatically on December 31, 2001. Sale or distribution of the subject product bearing labeling for this use on reduced or no-tillage soybeans (pre-plant only) after December 31, 2001 will be illegal. The tolerance authorizing residues of the subject product will also expire on December 31, 2001. After that date, sale or distribution of food in interstate commerce containing any residue of the subject product will be a violation of the Federal Food, Drug, and Cosmetic Act.

RD:STANTON:PM Team 23:Rm. 237:CM-2:305-5218:Disk #10:

## CONCURRENCES

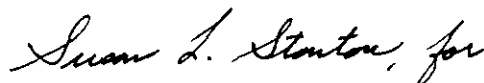
SYMBOL ▶	7505C							
SURNAME ▶	S. Stanton							
DATE ▶	May 5, 1999							

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- 3) Finally, if and when a permanent tolerance is established, EPA will entertain an application to amend the registration of the subject product without any special limitations on the duration of the amendment.

A stamped copy of the labeling is enclosed for your records. Please submit one copy of your final printed labeling before you release the product for shipment.

Sincerely yours,



Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

Enclosure

# 2,4-D LV ESTER 4

ACTIVE INGREDIENTS:	BY WT.
*2-Ethylhexyl 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.

Contains Petroleum Distillates

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Side Panels for Additional Precautionary Statements.

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

NET CONTENTS:

ACCEPTED  
with COMMENTS  
In EPA Letter Dated

MAY 5 1999

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

5905-90

MANUFACTURED BY  
HELENA CHEMICAL COMPANY  
MEMPHIS, TN 38119

**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. Dilute by giving 1 or 2 glasses of water to drink. Do not induce vomiting.

**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

If this container contains over 1 gallon and 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.

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 5 gallons or more in capacity, do not open pour. A mechanical system (such as a probe and pump or spigot) 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.

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. 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.

#### **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. 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 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 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 when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep 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 reconstitute.

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 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.

### 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 burning. 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 cleaning of 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 impervious pad (i.e., concrete slab, plastic sheeting) large enough to catch any spilled material. If spills occur, contain the spill by using an absorbent material (e.g., sand, earth, or synthetic absorbent). Dispose of the contaminated absorbent material by placing in a plastic bag and following disposal instructions on 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; spray 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 of the 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 conducive 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 1-5 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 pt.	2 pts.	1-1/2 pts.	1 pt.	3/4 pt.	1/2 pt.	1/4

#### 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.

For Spring Wheat and Durum, **2,4-D LV Ester 4** can be used when the crop is in the three leaf stage but before the booting stage.

**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.

**SOYBEANS (PREPLANT ONLY):** For use in crop residue management systems: Apply 3/4 to 1 pint not less than 7 days prior to planting soybeans or 1 to 2 pints not less than 30 days prior to planting. For best weed control, apply to postemergent weeds when small, actively growing, and free of stress caused by extremes in climatic conditions, diseases, or insect damage. The response of individual weed species is variable. Consult your local county agent or state Agricultural Extension Service or crop consultant for advice. Use the higher rate on larger weeds when perennials are present.

#### WEEDS CONTROLLED

alfalfa*	horseweed or maretail	ragweed, giant
bindweed*	ironweed	shepherdspurse
bullnettle	lambsquarters, common	smartweed,
Pennsylvania*		
bittercress, smallflowered	lettuce, prickly	sowthistle,
annual		
buttercup, smallflowered	morningglory, annual	speedwell
Carolina geranium	mousetail	thistle, Canada*
cinquefoil, common & rough	mustard, wild	thistle, bull
clover, red*	onion, wild*	velvetleaf
cocklebur, common	pennycress, field	vetch, hairy*
dandelion*	peppergrass*	Virginia copperleaf
dock, curly	plantains	
evening primrose, cutleaf	purslane, common	
garlic, wild	ragweed, common	

**\*Partially controlled**

Apply using air or ground equipment in sufficient gallonage to obtain adequate coverage of weeds. Use 2 or more gallons of water per acre in aerial equipment and 10 or more gallons of water per acre in ground equipment.

After applying, plant soybean seed as deep as practical or at least 1-1/2 to 2 inches deep. Adjust the planter press wheel, if necessary, to ensure that planted seed is completely covered.

If desired, this product may be applied preplant to soybeans in tank mixtures with other herbicides such as Poast, Poast Plus, Roundup, Roundup D-Pak, Honcho, Gramoxone Extra, Prowl, Pursuit Plus, Scepter 70DG, Squadron, and others that are registered for preplant soybean use.

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.

**NOTE:** Unacceptable injury to soybeans planted in treated fields may occur. Whether or not soybean injury occurs and the extent of the injury will depend on weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present. Injury is more likely under cool, rainy conditions and where there is less weed vegetation and crop residue present.

Not registered for use in California.

### USE RESTRICTIONS AND LIMITATIONS

Do not apply this product prior to planting soybeans if you are not prepared to accept the results of soybeans injury, including possible loss of stand and yield.

Do not use on low organic sandy soils (less than 1.0%).

Do not apply this product when weather conditions such as temperature, air inversions, or wind favor drift from treated areas to susceptible plants.

Do not mow or cultivate weeds prior to meeting with this product as poor control may result.

Do not use any tillage operations between application and planting.

Do not feed treated hay, forage, or fodder. Restrict livestock from grazing treated fields. Do not feed or graze treated cover crops to livestock.

Only one application may be made prior to planting soybeans per growing season.

Do not replant fields treated with this product in the same growing season with crops other than those labeled for 2,4-D use.

**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.

#### **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.

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