

Reg # 5905-90

PM-23

183

CAUTION

Avoid contact with eyes, skin and clothing. In case of contact with weed killer, flush eyes with water. Avoid inhaling spray mist. May cause skin irritation. Avoid contamination of food

stuffs. Harmful if swallowed. If swallowed, call a physician immediately. Contains petroleum solvent.

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 over night, then rinse thoroughly with water).

Do not store or place near fertilizers, seeds, plants, insecticides, or fungicides. Do not reuse empty container. Destroy by burying in a safe place. Do not burn. Do not contaminate irrigation ditches or water used for domestic purposes.

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

Obtain necessary approval and/or permits for use in States or areas where required. Helena 2,4-D LV Ester exposed to sub-freezing temperatures should be warmed to at least 40 F. and mixed thoroughly before using.

Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

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 Helena 2,4-D LV Ester 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 to 95; results may be unsatisfactory below 65 and above 95. 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.

TO CONTROL WEEDS IN RESISTANT CROPS

The following dosages are suggested on growing crops for the control of susceptible weeds such as Mustard, Sunflower, Lamb's-Quarters, 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 $\frac{1}{2}$ to $\frac{3}{4}$ pints of 2,4-D LV Ester 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.

2,4-D**CAUTION: KEEP SEE S**

ACTIVE INGREDIENTS (By W
Isocetyl ester of 2,4-Dichloro
INERT INGREDIENTS

*2,4-Dichlorophenoxyace
Isomer sp

BEST AVAILABLE COPY**NON-WARRANTY NOTICE**

Use directions carefully. Seller warrants such directions to be proper and that product conforms to the descriptions on this label. Timing and method of application, weather and crop conditions, and other influencing factors in the use of the product are beyond the control of the Seller, so Seller

makes no other warranty, express or implied (including a warranty of merchantability), with reference to the results or effects of use. No person has authority to make any representation not contained on this label.

THIS CONTAINER IS NONRETURNABLE**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 to use	2 pts.	1 1/2 pts.	1 pt.	3/4 pt.	1/2 pt.	1/4 pt.

NET CONTENTS**U.S. GALLONS****ACCEPTED**

NOV 7 1980

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pest registered under EPA Reg. No. 5905-90

DO NOT REUSE TH



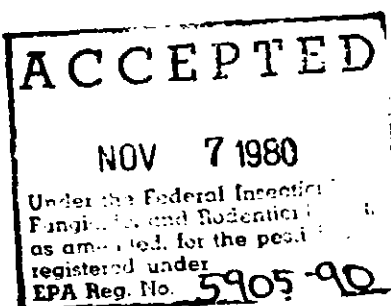
2,4-D LV ESTER

CAUTION: KEEP OUT OF REACH OF CHILDREN.
SEE SIDE PANEL FOR ADDITIONAL CAUTIONS.

ACTIVE INGREDIENTS (By Weight)

*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.



E.P.A. REG. NO. 5905-90
SN 110779-3M

DO NOT REUSE THIS CONTAINER FOR ANY PURPOSE

HELENA

HELENA CHEMICAL COMPANY

BEST AVAILABLE COPY

hold
inse

ants,
iner.
not
estic

may

es or
sub-
and

ated
int or

or the
ower.
Sow
reeds
owth.
plied
ts are
acre.
oled).
as an
s pest
to the
ated
to not
e not

Oil—Dilute recommended amount in 1 gallon Diesel Fuel and apply per acre.
GROUND SPRAYERS—Dilute recommended or more gallons of water and apply per acre. water required will depend upon the crop equipment used. Thorough agitation of necessary for best results.
CORN and SORGHUM—2,4-D sprays may stalks such as lodging, bending and brittleness of brittleness may last 5 to 7 days during which subject to breakage by high winds and cultivating while this condition prevails. recover from lodging or bending. Crops are injury during periods of rapid growth, but tasseling to dough stage.
SORGHUM may be seriously injured—spray inches tall. Pre-emergence sprays are not re
Pre-emergence—On loam and finer textured grasses, and some tolerant broadleaved Purslane can be controlled with 1 to 2 quarts of Ester applied before corn emergence. Do not in sandy soil. Heavy rains after treatment injury to germinating seeds and result in stunting. To reduce this risk plant corn normal (2½ to 3 inches). For band spraying (40 inch corn rows) use ½ dosage listed.
Post-emergence—Apply ½ pint of Helena 2 acre. Spray as soon as majority of weeds are but do not apply while corn is tasseling. Use to direct sprays away from the leaves of corn are 8 inches or more high.

TO
Apply sprays containing 2 pints of Helena 2 acre for most broadleaved weeds. Seeding be sprayed until root systems are established. Some injury to clover, creeping Augustine grass may occur.

DEEP ROOTED PERENNIALS AND WEEDS ON NON-CROPPED AREAS

(fence rows, vacant lots, power Apply sprays containing 2 pints of Helena 2 acre for control of most broadleaved weeds foliage thoroughly. Deep rooted perennials Bindweed, Canada Thistle, Hoary Cress require 2 to 4 pints per acre and repeat as necessary as new growth appears.

EMERGENT and MARGINAL AQUATIC WEEDS Arrowhead, Creeping Water Primrose, V Pickersweed, Smartweed, Spatterdock, ponds, lakes and drainage ditch banks, apply

BRUSH—Sprays containing 2 to 4 pints of Ester in 50 to 100 gallons of water per acre plants as Poison Ivy, Sumac, Poison Oaks, Brush, and tree regrowth, when in full leaf completely. Such plants as Sage Brush that over large areas have been successfully applying sprays containing 2 to 4 pints in 1 to acre. Repeat application if new growth appears. Brush Killer for general brush control.

LARGE TREES—On unwanted Wild Cherry Willow, Cottonwood and certain others, use

ding a
ults or
senta-

ONS

AMOUNTS OF SPRAY MIXTURE TO APPLY

AIRPLANE APPLICATION—Water—Dilute recommended amount of Helena 2,4-D LV Ester 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.

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 Helena 2,4-D LV Ester 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 (2½ to 3 inches). For band spraying (14 inch band with 40 inch corn rows) use ½ dosage listed.

Post-emergence—Apply ½ pint of Helena 2,4-D LV Ester 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, Duckweed, Spikerush, Umbrella Sedge, Gooseweed, Arrowhead, Water Hyacinth, and Smartweed in rice apply Helena 2,4-D LV Ester 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 Helena 2,4-D LV Ester 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 Helena 2,4-D LV Ester, 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 Helena 2,4-D LV Ester. 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 spray seedling grass, nor while grass is in boot to milk stage. Do not mow grass within two days before following treatment. In some areas bent, carpet, and be 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 Helena 2,4-D LV Ester 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.

DEEP ROOTED PERENNIALS AND WOOD PLANTS ON NON-CROPPED AREAS

(fence rows, vacant lots, power lines)

Apply sprays containing 2 pints of Helena 2,4-D LV Ester 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 Lilly, Lotus, Pickersweed, Smartweed, Spatterdock, and Waterwillow in ponds, lakes and drainage ditch banks, apply Helena 2,4-D LV

Ester at 1 to 4 pints per acre in sufficient water to thoroughly spray all foliage (For spot treatment, mix 4 ounces Helena 2,4-D LV Ester 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 1½ gallons Helena 2,4-D LV Ester in 150 to 300 gallons Kerosene per acre. (For spot treatment mix 8 ounces Helena 2,4-D LV Ester 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 Helena 2,4-D LV Ester in 50 to 100 gallons of water per acre can be used on such plants as Poison Ivy, Sumac, Poison Oaks, 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, Black Brush, Willow, Cottonwood and certain others, use sprays containing

2 to 4 pints of Helena 2,4-D LV Ester 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 Helena 2,4-D LV Ester in 100 gallons of Kerosene or fuel oil.

Small quantity usage—Thoroughly mix 1½ to 2 teaspoons of Helena 2,4-D LV Ester in 1 gallon of water. Use a knapsack or compressed air type sprayer and apply sufficient spray to wet the weed foliage.



STER

**HILDREN.
TIONAL CAUTIONS.**

..... 65.5%
..... 34.5%
Total 100.0%

3.76 lbs. per gallon.
01-5.

E.P.A. REG. NO. 5905-90
SN 110779-3M

ANY PURPOSE

R