

Reg # 2217-77

PM-23

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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 22 1991

James A. Armbruster, Ph.D.  
PBI/Gordon Corporation  
P.O. Box 4090  
1217 West 12th Street  
Kansas City, MO 64101

Dear Dr. Armbruster:

Subject: Revised Ingredient Statement  
LV 400 2,4-D Weed Killer  
EPA Registration No. 2217-77  
Your Submission Dated November 13, 1991

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 provision:

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."

A stamped copy is enclosed for your records. Please submit five (5) final printed copies for the referenced label, incorporating the above change.

Sincerely yours,

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

Enclosure

CONCURRENCES							
SYMBOL	H7505C						
SURNAME	D. KENNY						
DATE	11/27/91						

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# LV 400 2,4-D WEED KILLER

A LOW VOLATILE ESTER

**ACTIVE INGREDIENT:**

*Isooctyl (2-ethylhexyl) ester of 2,4-Dichloro- phenoxyacetic acid . . . . .	65.5%
INERT INGREDIENTS . . . . .	34.5%
TOTAL	100.0%

**THIS PRODUCT CONTAINS:**

\*3.6 lbs. 2,4-Dichlorophenoxyacetic acid equivalent per gallon or 43.5%  
Isomer Specific By AOAC Methods.

**KEEP OUT OF REACH OF CHILDREN**

DEC 02 1991

**CAUTION**

2217-77

See Next Panel for Additional Precautionary Statements  
and Statement of Practical Treatment

NET CONTENTS \_\_\_\_ GALLONS

861/1191 AP111391

EPA REG. NO. 2217-077  
EPA EST. NO. 2217-KS-1

Mfd. by PBI/GORDON CORPORATION  
KANSAS CITY, KANSAS 66118

STOP! READ THE ENTIRE LABEL FIRST. OBSERVE ALL PRECAUTIONS  
AND FOLLOW DIRECTIONS CAREFULLY.

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## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

**CAUTION:** Harmful if swallowed. Avoid contact with skin, eyes or clothing. When handling this product, wear chemical resistant gloves. Wash thoroughly after handling. Harmful if inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash before reuse.

### Statement of Practical Treatment

**IF SWALLOWED:** Do not induce vomiting. Call a physician immediately.

**IF ON SKIN:** Wash with soap and water. Get medical attention if irritation persists.

**IF IN EYES:** Flush with water for 15 minutes and get medical attention.

**ENVIRONMENTAL HAZARDS:** Do not apply directly to water. Do not apply when weather conditions favor drift away from target area. Use with care when applying in areas adjacent to any body of water. Do not contaminate water intended for irrigation or domestic purposes. This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment washwaters.

**Physical or Chemical Hazards:** Do not use or store near heat or open flame.

### DIRECTIONS FOR USE:

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

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.

### STORAGE & DISPOSAL

**STORAGE:** Store in original container in a locked storage area inaccessible to children or pets. This product may be stored in an unheated building. To prevent cross-contamination, do not store near other herbicides, fertilizers, insecticides, fungicides, or near seeds.

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by storage or 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:** FOR PLASTIC CONTAINERS - 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. FOR METAL 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.

# **USE PRECAUTIONS:**

Do not apply this product through any type of irrigation system. Don't overdose. Avoid spray drift to cotton, soybeans, tomatoes, tobacco, grapes, fruit trees, flowers, garden crops, ornamental plants, shrubs, trees and other hormone herbicide -- sensitive desirable plants. Do not apply near these plants because small quantities of wind-drifted herbicide may cause severe injury. Do not apply when wind speeds sufficient to cause drift. Do not apply when a temperature air inversion exists. An air inversion may be detected by creating a smoke column and observing for a layering effect. Do not apply when temperature exceeds 90° F. Do not apply if rain is expected within the hour.

# **GENERAL:**

Apply LV 400 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 drift. On cropland and along roadsides, do not exceed 20 psi pressure. Apply enough spray volume to provide uniform coverage of weeds and brush, usually 5 to 20 gallons per acre by ground equipment and 3 to 5 gallons by aircraft. Higher gallonage may be used if desired to improve spray coverage. Generally, the low 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 and field bindweed, and many woody plants usually require repeated applications for maximum control. Do not apply LV 400 where spray drift may contact nearby susceptible crops or other desirable plants, or may contaminate water used for irrigation or domestic purposes. Read and follow all precautions on this label. 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.

# **WEEDS:**

Arrowhead	Manzanita	Sneezeweed, Bitter
Bindweed	holder	Sowthistle, Annual
Buckbrush	Milkweed	Spanishneedles
Buckhorn	Milkvetch	Sumac
Buckwheat	Morningglory, Annual	Sunflower
Canada thistle	Mustards	Sweetclover
Cocklebur	Nettles	Tansy mustard
Coffeeweed	Pennycress	Tansy Ragwort
Cornflower	Pepperweed, Field	Thistle, Bull
Coyotebrush	Pigweed	Thistle, Musk
Croton	Plantains	Thistle, Russian
Dandelion	Poison Ivy	Tumbleweed
Docks	Poorjoe	Velvetleaf
Dogfennel	Rabbitbrush	Vervains
Elderberry	Ragweed	Vetch
Fanweed	Rape, Wild	Water Plantain
Galinsoga	Redstem	Wild Carrot
Goatsbeard	Sage, Coastal	Wild Garlic
Halogeton	Sagebrush, Big	Wild Hemp
Horsenettle	Sagebrush, Sand	Wild Onion
Jewelweed	Salsify	Wild Radish
Jimsonweed	Sand	Wild Sweet Potato
Knotweed	Shinnery Oak	Willow
Kochia	Sheep Sorrel	Wormwood
Lambsquarter	Shepherdspurse	Yellow Rocket
Locoweed	Sicklepod	Yellow Starthistle
Mallow, Venice	Smartweed	

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## NOTES ABOUT WIND DRIFT:

Ground Equipment -- Spray drift can be lessened by: Keep the spray boom as low as possible and apply 20 gallons or more of spray per acre. Use no more than 20 pounds spraying pressure with flat fan or flooding flat fan nozzle tips. Spray when wind velocity is low. Do not spray with oil 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 Application -- Spray drift can be lessened by: Apply not less than 5 gallons of spray per acre. Use no more than 20 pounds spray pressure at the nozzles. Use nozzles which produce a coarse spray pattern. Spray only when wind velocity is less than 5 miles per hour.

## PREPARATION OF THE SPRAY:

With Water -- Fill the spray tank about half full with water. Add the required amount of LV 400 with agitation. Then, add the rest of the water.

NOTE: LV 400 in water forms an emulsion which tends to separate unless the mixture is kept agitated.

With Water & Oil -- Mix LV 400 and the oil first. Add this mixture to the water. However, with adequate agitation, the oil can be added after the LV 400 is mixed in the water.

With Oil -- If straight oil is used, a solution is formed and separation does not occur. Do not allow any water to get into the herbicide-oil solution to avoid formulation of an invert emulsion.

## SMALL GRAINS (not underseeded with a legume):

NOTE: Do not permit dairy or meat animals being finished for slaughter to forage or graze treated grain fields within 2 weeks after treatment. Do not feed treated straw to livestock.

Spring Wheat & Barley -- Apply 1/2 to 1 pint per acre. Spray when grain is in full tiller stage (usually 4 to 8 inches tall) but before the boot stage, and when weeds are small. Do not apply before the tiller stage nor from early boot to the dough stage. Higher rates (3/4 to 1-1/2 pints per acre) may be required to control certain weeds but crop injury may occur.

Winter Wheat & Rye -- Apply 1/2 to 3/4 pint per acre in the spring at the full tiller stage but before the early boot stage.

Spring Seeded Oats -- Apply 1/2 pint per acre at the full tiller stage but before the early boot stage. Oats are less tolerant to 2,4-D than wheat or barley and more likely to suffer some injury.

Fall Seeded Oats (Southern) Grown for Grain -- Apply 3/4 to 1 -1/2 pints per acre after full tillering but before the early boot stage. Some difficult weeds may require the higher rate for maximum control but crop injury may result. Do not apply during or immediately following cold weather.

Preharvest Treatment -- Apply 1 to 2 pints per acre when grains are in the hard dough stage to control large weeds that may interfere with harvest. Best results are obtained when soil moisture is sufficient to cause succulent weed growth.

**CORN:** 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 or your Agricultural Experiment Station or Extension Service weed specialists for this information. Use one of the following programs for weed control in corn:

Pre-emergence -- Apply 1 to 2 quarts per acre to soil anytime after planting but before corn emerges. Do not use on light sandy soil. Do not cultivate until necessary.

Emergence -- Apply 1 pint per acre just as corn plants are breaking ground.

Postemergence -- After emergence of corn, use 1/2 pint per acre. Application of 3/4 to 1 pint per acre may be needed for maximum control of some weeds but such rates are more likely to injure the corn. Do not apply from the tasseling to dough stage. Do not use with oil, Atrazine or other adjuvants. Crop injury is more likely to occur if corn is growing rapidly under high temperature and high soil moisture conditions. To reduce breakage of stalks from temporary brittleness caused by 2,4-D, delay cultivation for 8 to 10 days after treatment.

Early Spraying: When corn is 2 to 4 inches high, apply as soon as possible after most weeds have emerged. Use 1/2 pint per acre. Corn drop nozzles are not necessary at this time.

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Lay-By Spraying: When corn is 2 to 3 feet high, use 1/2 pint per acre. At this stage of corn growth, since stalks may become brittle from exposure to 2,4-D there is always a chance that high winds may damage the crop 1 to 3 days after spraying. Use drop nozzles. Cultivation should be completed before applying this spray.

High-Clearance Spraying: Apply 1 pint per acre when weeds get started after lay-by. Adjust spray nozzles to hit highest weeds.

Preharvest Treatment -- After the hard dough or denting stage, apply 1 to 2 pints per acre by air or ground equipment to suppress perennial weeds, decrease weed seed production, and control tall weeds such as bindweed, cocklebur, dogbane, jimsonweed, ragweed, smartweed, velvetleaf, and vines that interfere with harvesting. Do not forage or feed corn fodder for 7 days following application.

**SORGHUM (Milo):** Apply 1/2 pint per acre when sorghum is 5 to 15 inches tall. A higher rate of 3/4 to 1 pint per acre may be needed to control some weeds but the chance for crop injury is likewise increased. Do not use with oil. Do not treat before the sorghum is 5 inches tall nor during the boot, flowering, or early dough stages. If sorghum is taller than 8 inches, use drop nozzles to keep the spray off the foliage as much as possible. Temporary crop injury may occur under conditions of high soil moisture and high air temperatures. Varieties vary in tolerance to 2,4-D and some hybrids are quite sensitive. Spray only varieties known to be tolerant to 2,4-D. Contact seed company or your Agricultural Experiment Station or Extension Service weed specialists for information.

**GRASS SEED CROPS:** Use 1 to 1-1/2 pints per acre in the amount of water required for uniform application by air or ground equipment. Apply to established stands in spring from the tiller to early boot stage. Do not spray in boot stage. New spring seedlings may be treated with the lower rate after the grasses have at least five leaves. Perennial weed regrowth may be treated in the fall.

**WEED AND BRUSH CONTROL IN RANGELANDS & GRASS PASTURES:** Do not graze dairy cattle on treated areas within 7 days after application. Do not use on bentgrass, alfalfa, clover or other legumes. Do not use on newly seeded areas until grass is well established. Do not use from early boot to milk stage where grass seed production is desired. Observe a 30-day preharvest interval for grass cut for hay, and observe a preslaughter interval for meat animals of 3 days.

Bitterweed, Broomweed, Croton, Docks, Kochia, Marshelder, Muskthistle and Other Broadleaf Weeds -- Use 2 quarts of LV 400 per acre in the amount of water needed for uniform application. If the 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.

Wild Garlic and Wild Onion -- Apply 2 to 3 quarts per acre making three applications (fall-spring-fall) or (spring-fall-spring), starting in late fall or early spring.

Weed Control in Newly Sprigged Coastal Bermudagrass -- Apply 1 to 2 quarts per acre pre-emergence and/or postemergence.

Sand Shinnery Oak and Sand Sagebrush -- On the oak, use 1 quart in 5 gallons of oil or in 4 gallons of water plus 1 gallon of oil per acre. Apply by aircraft between May 15 and June 15. On the Sagebrush, use 1 quart in 3 gallons of oil per acre and apply by aircraft when foliage is fully expanded and the brush is actively growing.

Big Sagebrush and Rabbitbrush -- Use 2 to 3 quarts per acre in 2 to 3 gallons of oil or in 3 to 5 gallons oil-water emulsion spray. For rabbitbrush, the 3 quart rate is usually required. Brush should be leafed out and growing actively when treated. Retreatment may be needed.

Chamise, Manzanita, Buckbrush, Coastal Sage, Coyotebrush and Certain Other Chaparral Species -- Use 2 to 3 quarts per acre in 5 to 10 gallons of water. One gallon of fuel oil may be included in the spray mixture for added effectiveness. Make applications by aircraft or ground equipment to obtain uniform spray coverage. For effective control the brush must be fully leafed out and growing actively when sprayed. Retreatment may be needed.

**WOODY PLANT CONTROL IN NON-CROPLAND AREAS:** To control species susceptible to 2,4-D in right-of-ways, fencerows, roadsides, and along drainage ditchbanks, spray brush up to 5 to 8 feet tall after spring foliage is well developed, using 2 to 4 quarts of LV 400 in 100 gallons of water and wetting all parts of the brush including foliage, stems and bark. This may require up to 400 gallons of spray per

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acre for adequate coverage of solid stand of brush. Make application in such a way as to prevent drift of the spray away from the area being treated. Spraying can be effective at anytime up to 3 weeks before frost as long as soil moisture is sufficient for active growth of the brush. Control will be less effective in mid-summer during hot dry weather when soil moisture is deficient and plants are not actively growing. Oil or wetting agent may be added to the spray, if needed, for increased effectiveness.

**FOREST CONIFER RELEASE:** After northern conifers, jack pine, red pine, black spruce, and white spruce cease growth and "harder, off" in late summer, a spray of 1-1/2 to 3 quarts of LV 400 in 8 to 25 gallons of water per acre may be applied by air to control certain competing hardwood species such as alder, aspen, birch, hazel and willow. Since this treatment may cause occasional conifer injury, do not use if such injury cannot be tolerated. Consult your regional or extension forester or state herbicide specialist for recommendations to fit local conditions.

**WEED CONTROL IN NON-CROPLAND AREAS SUCH AS LAWNS, GOLF COURSES, CEMETERIES, PARKS, AIRFIELDS, ROADSIDES, VACANT LOTS, DRAINAGE DITCH BANKS:** Apply 1 to 3 quarts per acre in the amount of water needed for uniform application. Usually 2 quarts per acre provides 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 treatment in the same season or in subsequent years.

**TULE (BULRUSH) AND OTHER RUSHES:** Mix 2 quarts of LV 400 and 1 gallon of diesel oil or kerosene, then add this mixture to 100 gallons of water. Spray to wet all foliage (400-800 gallons per acre). Addition of a wetting agent may be advisable. Apply in the spring during flower head emergence. Respray if needed when regrowth is 3 to 5 feet tall.

**SPOT TREATMENT:** To control broadleaf weeds in small non-cropland areas with a hand sprayer, use 1/4 pint of LV 400 in 3 gallons of water and spray to thoroughly wet all weed foliage. Keep spray mixture agitated to prevent separation.

#### LIMITED WARRANTY AND DISCLAIMER.

The manufacturer warrants only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED. This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

The terms of this Limited Warranty and Disclaimer cannot be varied by any written or verbal statements or agreements. No employee or agent of the seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.