

ACCEPTED

SEP 13 1982

Under the Federal Insecticide,
Fungicide and Rodenticide Act,
as amended for the pesticide
regulation under
EPA Reg. No. 160.107

D-D[®]
SOIL FUMIGANT

KEEP CONTAINER AND CONTENTS
AWAY FROM HEAT OR OPEN FLAME

ACTIVE INGREDIENTS

BY WEIGHT

Chlorinated C₃ Hydrocarbons, including
1,3-Dichloropropene, 1,2-Dichloropropane, 3,3-Dichloropropene,
2,3-Dichloropropene, and Other Related Chlorinated Hydrocarbons...100%

EPA Reg. No. 201-119

This product contains 10 pounds active ingredient per gallon.

KEEP OUT OR REACH OF CHILDREN

DANGER

HAZARDOUS LIQUID AND VAPOR MAY BE FATAL IF
INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED.
CAUSES BURNS OF SKIN OR EYES.
MAY PRODUCE KIDNEY AND LIVER DAMAGE UPON
PROLONGED EXPOSURE.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED, call a physician, poison control center, or hospital emergency room immediately and follow the directions given. If medical advice is not available, induce vomiting. NEVER INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR DROWSY PERSON. To induce vomiting, give one or two glasses of water followed by two tablespoons (30 cc or one ounce) Syrup of Ipecac. For a child, give one glass of water followed by one tablespoon (15 cc or one-half ounce) Syrup of Ipecac. If Ipecac is not available, give two glasses of water (one glass for a child) and induce vomiting by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. After vomiting has occurred, get medical attention. If you are not successful at inducing vomiting, get medical attention immediately. Do not waste time with further attempts.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is labored, give oxygen. Get medical attention.

IF ON SKIN, immediately flush skin with plenty of water for 15 minutes while removing contaminated clothing and shoes or boots. If water is not immediately available, remove excess chemical from skin with sorbent material such as a towel or dry soil, then proceed at once to a location where water is available. Get medical attention.

IF IN EYES, immediately flush eyes with water for 15 minutes. Get medical attention immediately.

See Side Panel For Additional Precautionary Statements

NET CONTENTS _____

ACL 2144B 3-82

SHELL CHEMICAL COMPANY, A DIVISION OF SHELL OIL COMPANY,
AGRICULTURAL CHEMICALS, HOUSTON, TEXAS 77001

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER!

HAZARDOUS LIQUID AND VAPOR. MAY BE FATAL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES BURNS OF SKIN OR EYES. MAY PRODUCE KIDNEY AND LIVER DAMAGE UPON PROLONGED EXPOSURE.

DO NOT INHALE

NIOSH-approved respiratory equipment should be worn when liquid D-D is exposed to the atmosphere. A NIOSH-approved half mask organic vapor respirator (such as MSA 460968 with a 464031 cartridge or Wilson 1721) should be worn during loading and maintenance operations where only small amounts of liquid or vapor are released. For loading and maintenance operations where sizeable amounts of liquid or vapor are released in unconfined spaces, a NIOSH-approved full facepiece (such as MSA 460560 with 464031 cartridge or a Wilson 1621) organic vapor cartridge respirator is recommended. When liquid D-D is exposed to the atmosphere in confined spaces where high concentrations may occur, where oxygen deficiency may occur, when handling large spills, and during fire fighting, a self-contained breathing apparatus is required. Cartridges should be replaced per manufacturer's instructions but should in no case be used if the odor of the product is present. Used cartridges should be destroyed immediately.

DO NOT GET ON SKIN

When handling or working with D-D, wear clean body covering including polyethylene or neoprene gloves and heavy (greater than 3 mil thickness) polyethylene, neoprene, or rubber footwear. Leather goods offer no protection. Wash and aerate all clothing and gear thoroughly after use or

immediately following significant contamination. Never wear clothing, footwear or gear having an odor of D-D. Dispose of thin rubber and leather items that are accidentally contaminated; do not reuse.

DO NOT GET IN EYES

Wear eye protection such as chemical workers' goggles when handling D-D.

DO NOT SWALLOW

Do not use the mouth to siphon D-D from containers or to blow out clogged lines, nozzles, etc. Wash thoroughly after handling and before eating or smoking.

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL (713) 473-9461.

ENVIRONMENTAL HAZARDS

To avoid injury to fish and other wildlife, do not spill or empty containers into streams, ponds, or any other body of water. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL OR CHEMICAL HAZARDS

FLAMMABLE. Do not use, pour, or store near heat or open flame. Do not cut or weld container. Do not store in or use containers or equipment made of aluminum, magnesium, or their alloys.

IN CASE OF A SIGNIFICANT SPILL, CALL (713) 473-9461 or CHEMTREC (800) 424-9300.

DIRECTIONS FOR USE

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

STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

PESTICIDE DISPOSAL: Pesticide or rinsate that cannot be used according to label instructions must be disposed of according to Federal or approved State procedures under Subtitle C of the Resource Conservation and Recovery Act.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Dispose of in a sanitary landfill or by other approved State and local procedures.

DO NOT REUSE CONTAINER
DO NOT CUT OR WELD CONTAINER

APPLICATION PRECAUTIONS

IMPORTANT: NOTE CAREFULLY. Fumigation may temporarily raise the level of ammonia nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertilizer and fumigant are applied to soils that are either cold, wet, acid, or high in organic matter. To avoid injury to plant roots, fertilize as indicated by soil test following fumigation. To avoid ammonia injury, nitrate starvation, or both to crops, avoid using fertilizers containing ammonium salts and use only fertilizers containing nitrates until after the crop is well established and the soil temperature is above 65°F. Certain crops, including cotton, sugarcane, and pineapple, are tolerant to ammonia, and the above rule does not apply to them. Liming highly acid soils before fumigation stimulates nitrification and reduces the possibility of ammonia toxicity.

Do not store in or use containers or equipment made of aluminum, magnesium, or their alloys. Store in cool place away from dwellings. After use, always empty and clean applicator thoroughly with kerosene or fuel oil. Avoid using water in equipment.

Avoid reinfesting treated soil. Do not use irrigation water, transplants, tools, seed pieces, or crop remains that could carry soilborne pests from infested land. Clean equipment carefully before using.

GENERAL DIRECTIONS

Use D-D Soil Fumigant at full strength as a preplanting treatment by injection in the soil only, for control of cyst (soybean, golden, tobacco, sugar beet) root knot, root lesion or meadow, burrowing, citrus, stem and bulb, sting, ring, awl, spiral, lance, pin, stubby root, stylet, dagger and other plant parasitic nematodes, symphylids, and wireworms. Nematodes, wireworms, and symphylids appear on many field, forage, vegetable, nursery crops, grasses, ornamentals, small fruits, citrus, avocados, nut and deciduous fruits, mint, hops, sugar beets, and vineyards. For best results, treat prior to each crop planting. Do not use on heavy clay soils. Avoid reinfestation of treated soil from transplants, tools, equipment, or crop remains from infested areas.

WHEN TO TREAT

Treat in spring or fall, whenever soil conditions are suitable. Soil temperature 6 inches deep should be between 40 and 80°F. (Cold or wet soils retain fumigant longer. Dry or hot soils release fumigant too rapidly.) Fall treatment is suggested for land to be planted to early planted crops such as celery, tomatoes, and nursery stock. Early fall treatment allows planting a fall cover crop.

A three-month period should be allowed before planting treated muck and heavy soils to allow complete aeration. For symphylid control, time application in accordance with local, state, and federal recommendations.

SOIL PREPARATION

Plow to a depth of 16 to 12 inches. Disc soil thoroughly to break up clods and cut up trash. Cover trash or allow to rot before fumigation. Soil should be smooth and free of debris with adequate moisture for good germination. Deep tillage, 12 to 18 inches, often improves results, especially in heavy and muck soils.

APPLICATION

OVER-ALL (BROADCAST) APPLICATION: Apply with chisel or plow-sole equipment. Apply in uniform streams 10 to 12 inches apart and at least 6 to 12 inches deep in the soil. With chisel application, seal chisel channels with a drag, ring roller, or press wheel behind the applicator. With plow-sole applications, disc IMMEDIATELY to break clods and then seal with roller or drag.

ROW (BAND) TREATMENT: Adjust injection chisels to same spacing as planter. Inject at least 6 to 12 inches below the final soil surface. Seal with roller or drag. Plant directly in treated strips.

SPLIT APPLICATION: (Use only for dosages in excess of 80 gallons per acre.) Apply only half the suggested dosage, wait one to two weeks and plow, turning the treated soil completely over. (Discing is not satisfactory.) Then apply the remainder and seal with drag or roller.

CITRUS REPLANTING SITES: Space chisels 18 to 20 inches apart and inject 12 to 14 inches deep over-all.

FOR DECIDUOUS ORCHARDS, FOREST AND NURSERY CROP PLANTING SITES: Treat large areas over-all or in strips 10 feet wide. Individual tree sites can be treated by injecting with a handgun in a 10 foot square area. Inject 10 to 12 inches deep with injections spaced 12 inches apart. When using a handgun, seal the injection hole with the foot.

WHEN TO PLANT

Under normal conditions, a waiting period of one week for each 10 gallons of D-D Soil Fumigant used on a broadcast basis should be allowed. (Pine-apple land can be treated at time of planting.) Allow additional time before planting if temperatures are below 60°F or if there has been heavy rains.

Soil treated with massive doses of fumigant before planting, such as for deep-rooted trees and shrub planting sites, requires a 3 to 6 months waiting period. Before planting, plow or open planting hole to thoroughly aerate soil.

MISCELLANEOUS USES

BACTERIAL CANKER AND DECLINE OF PEACH TREES

Use as a preplant treatment of light (sandy) soils using 40-60 gallons of D-D Soil Fumigant per acre. Apply by chisel injections at 10-12 inch depth on 12-inch spacings. Seal soil soon after treatment with ring roller or drag. Soil should be warm (50-85°F at 6 in. depth), moist and cultivated thoroughly before application. Remove roots and other plant debris prior to treatment. Fall application usually is best because of warm soil. Pre-irrigation may be necessary to provide sufficient moisture. A waiting period of one week should be allowed for each 10 gallons of D-D Soil Fumigant used on a broadcast basis.

WHITE POTATOES IN NORTHWESTERN STATES: To control quackgrass in fields to be planted to white potatoes, apply D-D Soil Fumigant as a spring or preferably a fall broadcast (over-all) treatment using 20 to 28 gallons per acre. For suppression of the damaging effects of verticillium wilt in fields to be planted to white potatoes, apply D-D Soil Fumigant as a spring or preferably a fall broadcast (over-all) treatment using 40 to 48 gallons per acre.

FIELD BINDWEED (PERENNIAL MORNINGGLORY) SUPPRESSION: Use 30-50 gallons of D-D Soil Fumigant per acre over-all as a spring or preferably fall treatment to aid in the control of field bindweed (perennial morningglory) on bare ground. Prior to planting, see section on "When to Plant".

MINT IN NORTHWESTERN STATES: Use 40 gallons of D-D Soil Fumigant per acre as a spring or preferably a fall treatment to aid in the reduction of the damaging effects of verticillium wilt in disease-infested land to be used for mint production. After treatment, allow at least 7 to 8 weeks or until the odor of the fumigant has left the soil before planting. Consult local Agricultural Experiment Station authorities for the use of other practices such as flaming the stubble, weed control, and cultural practices when using D-D Fumigant as an aid in reducing damage caused by verticillium wilt.

CROP	TYPE OF TREATMENT	SOIL TYPE	DOSAGE (GALLONS) PER ACRE) ^{1, 2}	
Field Crop (Tobacco, ³ Cotton, Etc.) Floral Crops Grasses and Turf Ornamentals Small Fruits Vegetables	Row (42")	Mineral	7½ to 10	
		Muck or Peat	15 to 20	
	Over-all (or broadcast)	Mineral	18 to 25 ⁴	
		Muck or Peat	40 ⁵ to 60	
Carrots	Over-all (or broadcast)	Mineral	18 to 25 ⁴	
		Muck or Peat	40 ⁵ to 60	
Sugar Beets	Root Knot Nematodes	Row (42")	Mineral	9
		Over-all	Mineral	20
	Sugar Beet Nematodes	Row (42")	Mineral	15 to 20
		Over-all	Mineral	25 to 30
Deciduous Orchards Forest Nurseries Nut Trees Ornamental Nurseries ⁶ Strawberries Vineyards	Strip-treatment	Mineral	Treat a 10 ft wide strip in which new trees are to be planted at 40 gal/acre. ⁷	
		Over-all	Mineral	40 to 60
	Pineapples	Row	Mineral	40 to 60
Citrus, Avocados	Florida	Over-all	Sandy	60
	California	Over-all	Sandy	60 to 100
			Loam	80 to 150
			Clay Loam	120 to 200

¹ One gallon of D-D Soil Fumigant weighs 10 pounds

² For symphylid control, apply 30 to 40 gallons of D-D Soil Fumigant per acre in accordance with local, state, and federal recommendations. To control wireworms, use dosage recommended for nematodes in broadcast treatment.

- 3 To calibrate equipment for tobacco--The following steps will help calibrate your gravity flow applicator for row treatment of tobacco to insure 10 gallons of D-D per acre. Measure 156 feet of row (52 steps). Lower injector 8-10 inches in soil. Place tube into pint or quart jar. Start tractor and open valve on gravity flow. After 156 feet, applicator must deliver 1 pint. This is 10 gallons per acre. If less, decrease tractor speed. If more, increase speed. Once set, maintain the same tractor speed. Calibrate each outlet separately.
- 4 For cyst-forming nematodes, increase dosage to 25 to 30 gallons per acre.
- 5 For muck soils containing less than 30% organic matter, reduce dosage to 30 gallons per acre.
- 6 In California, consult local recommendations for specific rates on individual nursery crops.

Examples: If trees are to be planted in rows 20 feet apart, only half of the area is treated (alternate 10 ft. strips), thus, only 20 gallons are applied--the part treated is at the over-all rate of 40 gallons per acre.

Formula for calculating dosage rate on strips:

$$\frac{\text{Width of strip to be treated}}{\text{Row Spacing}} \times \text{Over-all Rate} = \text{Actual gallons to be applied}$$

CORROSIVE

FLAMMABLE LIQUID

DICHLOROPROPENE AND
POLYENE DICHLORIDE
MIXTURE, Flammable Liquid (Corrosive)
NA 2047

NOTICE OF WARRANTY

SHELL CHEMICAL COMPANY MAKES NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PURPOSE, OR OTHERWISE, EXPRESS OR IMPLIED, concerning this product or its use, which extend beyond the statements on this label.