

HELENA

BRAND



8 lb. Emulsion

(This product contains 8 lbs. of Malathion per gallon.)

CAUTION KEEP OUT OF REACH OF CHILDREN
SEE OTHER CAUTIONS ON SIDE PANEL

ACTIVE INGREDIENTS	By Weight
Malathion*	81.42%
Xylene	6.29%
INERT INGREDIENTS	12.29%
TOTAL	100.00%

*O,O-dimethyl dithiophosphate of diethyl mercaptosuccinate.

®Trademark Agricultural Division American Cyanamid.

MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TENNESSEE

SMALL GRAINS: (Barley, oats, rye, wheat): Armyworms, English grain aphids, grasshoppers, greenbugs: 1-1 1/4 pt. Do not apply within 7 days of harvest. (1 1/4 pt.)

SPINACH: Aphids: 1 1/2 pt. Do not apply within 7 days of harvest.

STRAWBERRIES: Aphids (use at rate 2 pt.), field crickets, lygus bugs, potato leafhopper, spider mites, spittlebugs, strawberry leafroller, strawberry root weevil, thrips, whiteflies; 1 1/2 - 2 pt. (for strawberry root weevil control, make applications to the soil surface before planting and work into the top 6-8 inches.) Do not apply within 3 days of harvest. (2 pt.)

SWISS CHARD: Aphids, blister beetle: 2 pt. Do not apply within 7 days of harvest. (2 pt.)

TOMATOES: Aphids, spider mites: 1 1/2 pt. Drosophila flies: 2 pt. in full coverage application to fruit and foliage. Do not apply within 1 day of harvest. At rates over 2 pt. up to 3 1/2 pt. do not apply within 5 days of harvest. California only: These higher rates may be applied up to 3 days of harvest. (3 1/2 pt.)

PASTURE AND RANGE LAND: Aphids, grasshoppers, leafhoppers: 1 1/2 pt. or use 1 1/4 pt. in 1 gal. diesel fuel oil by means of an airplane or a turbine-blower type sprayer. May be applied on day of harvest or grazing. (1 1/4 pt.)

WASTELANDS, ROADSIDES, SOIL-BANK LANDS (Not Grazed) Grasshoppers: 1-2 pt. or in 1 gal. fuel oil by means of an airplane or a turbine-blower type sprayer.

STORAGE PEST PROTECTION

For protection against: Cereal Leaf Beetles, Confused Flour Beetle, Indian Meal Moth, Flat Grain Beetle, Granary Weevil, Lesser Grain Borer, Red Flour Beetle, Rice Weevil, Rusty Grain Beetle, Sawtoothed Grain beetle.

GRAINS: Barley, Corn, Grain Sorghum, Seeds, Oats, Rice, Rye, Wheat:

GRAINS - RESIDUAL SPRAY - BEFORE STORING: (For walls, floors, and machinery in grain elevators, in treating truck beds, boxcars, and ships' holds before loading grain): Use 5 pt. per 25 gal. water. Make thorough application. Before applying spray, clean elevators, boxcars, truck beds, etc. thoroughly. Remove and burn all sweepings and debris.

GRAINS - GOING INTO STORAGE: Use 5/8 pt. in 2-5 gal. water per 1000 bu. Apply as grain is being loaded or turned into final storage.

GRAINS - AFTER STORED: To protect clean or uninfested grain from Indian Meal Moth, use 3/8 pt. in 1-2 gal. water per 1000 sq. ft. of grain surface area. Apply evenly over surface of grain. Apply immediately after grain is loaded into storage and repeat if necessary.

RESIDUAL SPRAY FOR BOXCARS FOR LOADING AND TRANSPORTING BAG FLOUR AND PACKAGED CEREALS: For control of the exposed stages of Confused Flour Beetle, Rice Weevil, Granary Weevil, Saw-toothed Grain Beetle, Flat Grain Beetle, Red Flour Beetle, Rusty Grain Beetle, Lesser Grain Borer, Indian meal Moth and Mit pests infesting empty boxcars. Apply as follows: Clean the boxcar thoroughly, then remove and burn all sweepings and debris. Spray walls and floor to the point of run-off with either 5 pt. in 25 gal. of water, or 5 pt. in 19 gal. of deodorized kerosene. (The deodorized kerosene solution should be made up of 4 parts kerosene-type solvent plus 1 part aromatic hydrocarbon-type solvent.) Let the sprayed boxcar stand empty with the doors open until the spray has thoroughly dried. Line the walls and floor of the boxcar with kraft paper before loading.

FIELD AND GARDEN SEEDS

FIELD AND GARDEN SEEDS: Field and garden seeds can be protected against the listed grain pests with a dosage of 3/8 pt. in 1-2 1/2 gal. of water per 500 bu. of seed. May be used under the requirements of the Khapra beetle quarantine, where water or diesel oil emulsions are indicated, as prescribed by the current quarantine instructions.

PEANUTS

PEANUTS - RESIDUAL SPRAY - BEFORE STORAGE: Clean warehouse thoroughly of trash and remains of old peanuts 1-2 weeks before new peanut crop is stored. Then, thoroughly spray the interior of the empty warehouse, especially cracks and protected places. Treat outside walls to a height of 6-8 ft. and the ground to a distance of 6 ft. from the warehouse. Use 5/8 pt. in sufficient water to make 2 1/2 gal. of spray, or 5 pt. with 19 gal. of water. Apply as a coarse spray at the rate of 2 gal. per 1,000 sq. ft. of surface or to run-off.

PEANUTS - BULK SPRAY TREATMENT - GOING INTO STORAGE: Use 1 3/5 pt. in 5 gal. of water for each 15 tons of farmers stock peanuts as they go into storage. Use good spray equipment. Apply coarse spray uniformly. Preferably, use a suitable mechanical spray applicator that regulates the rate of application to the flow of peanuts. Adjust the operating pressure of spray pump and size of nozzle opening to correlate the amount of spray delivered with the rate of flow of peanuts being treated. Avoid spraying with a fine mist that drifts away, by using low nozzle pressure. Shield the nozzle against wind and air currents.

PEANUTS - SUPPLEMENTAL SURFACE SPRAY: After warehouse has been filled, level surface of peanuts before spraying. Apply surface spray using 1 1/2 lb. of Cythion 25% wettable powder in 2 gal. of water and apply at the rate of 2 gal. per 1,000 sq. ft. of surface. Apply first treatment as soon as bin is filled and leveled, but not later than the first week in Oct. Apply the second surface treatment 1 month later, followed by treatment at 2 month intervals. Use a piston-pump type power sprayer, equipped with an agitator, and with a nozzle capable of delivering a coarse spray. Use spray equipment with sufficient capacity and power to cover large surfaces thoroughly.

ORNAMENTALS

Dosages given are for use in 100 gal. of dilute spray.
Aphids, European pine shoot moth, four-lined leaf bug, Japanese Beetle adult, mealybugs, millipedes, potato leafhopper, rose leafhopper, scurfy scale, spider mites, springtails, sowbugs, tarnished plant bug, thrips, whitefly, sunnymus scale, lace bugs, oyster shell scale 1 pt.
Azalea scale, bagworms, birch leafminer, boxwood leafminer, Fletcher scale, Florida-red scale, juniper scale, magnolia scale, oak kermes, pine leaf scale, tent caterpillar 1 1/2 pt.
Black scale crawlers, Monterey pine scale 1 3/5 pt.
Pine needle scale, wax scale 2 pt.
For oyster shell, Fletcher, juniper, oak kermes and pine needle scales, apply when scale crawlers have settled on foliage.
CAUTION: Avoid use on certain ferns including Boston, Maidenhair and Pteris, as well as some species of Crassula and Conoclinium Juniper.

CAUTION

(Read entire label before using)

Harmful if swallowed. Avoid breathing of dust or spray mist. Avoid contact with skin, eyes, clothing. Wash after handling.

Highly toxic to fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes and containers. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. This product is toxic to shrimp and crab. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where these are important resources. Apply this product only as specified on this label.

When spraying in ships holds, wear mask or respirator approved by the U.S. Bureau of Mines, and wear protective clothing to minimize skin exposure.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

In order that pesticidal residues on food and forage crops will not exceed tolerances established by the Federal Food and Drug Administration, use only at recommended rates and intervals, and do not apply closer to harvest than specified. Do not apply or allow to drift to areas occupied by unprotected humans or beneficial animals or onto adjoining food, fiber or pasture crops. The grower is responsible for residues on his crops as well as for damages caused by drift from his property to that of others. Consult state agriculture extension service or state agricultural experiment stations for additional information, as the timing of applications needed will vary with local conditions.

DO NOT USE, POUR, SPILL, OR STORE NEAR HEAT OR OPEN FLAME.

Rinse spray equipment and containers. Discharge liquid waste in pit in non-crop lands located away from water supplies. **PERFORATE EMPTY METAL CONTAINERS. CRUSH & BURY GLASS.**

DIRECTIONS FOR USE

Pour specified amount of this product into nearly filled spray tank. Add balance of water to fill tank. Keep agitator running during filling and spraying operations. If mixture does not mix readily, but tends to separate as an oily layer, do not use as injury to plants may result. Do not combine with wettable powders unless previous use of the mixture has proven physical compatible and safe to plants. Always thoroughly emulsify this product with at least half of total water before adding wettable powder. **SUGGESTED WATER RATES FOR AIRCRAFT AND GROUND APPLICATION.** (The actual rate required to provide thorough, uniform coverage varies with plant growth at time of application. Except as specified for certain uses, the following rates are therefore intended to cover a broad range of conditions).

Crop	Gal. Water/Acre	
	Aircraft	Ground
Vegetable and Field Crops	1-20	5-125
Orchard, Grapes	5-25	
Orchard Crops (see exceptions below)		300-800
Citrus		500-3000
Grapes		100-200

RECOMMENDATIONS

Unless otherwise indicated, dosages are given in pt. of Cythion 8-lb. per acre in sufficient water to provide thorough coverage of vegetable and field crops and pt. of Cythion 8-lb. per 100 gal. water for thorough coverage sprays of fruit crops. Begin applications when insects first appear and repeat at 7-10 day intervals as needed to maintain control, but observe use limitation given for specific crops. Maximum permissible rate per acre, expressed as Cythion 8-lb. given in parenthesis. (), after each crop claim.

CROP USES

TREE FRUIT CROPS

APRICOTS: Aphids, codling moth, European lecanium scale, orange tortrix, soft brown scale: 1/4 pt. Do not apply within 7 days of harvest. (10 pt.)

CHERRIES: Black cherry aphid, bud moth, cherry fruit fly, fruit tree leaf roller, lesser peach tree borer (apply to trunks and scaffold limbs at 21 day intervals beginning with emergence). Forbes and San Jose scales (apply 3 weeks before and immediately after harvest) 1 pt. Do not apply within 3 days of harvest. Caution: May cause injury on certain varieties of sweet cherries in the Northeast. (8 pt.)

CITRUS: California red scale, yellow scale, purple scale, black scale (single and off-brooded) soft scale, thrips, citricola scale, aphids: 1 pt. Do not apply within 7 days of harvest. Make no application when trees are in full bloom. California - Do not apply unless parasite activity in the scale is at a low level or absent. (25 pt.)

GRAPES: European fruit lecanium, grape leafhopper, mealybug, spider mites: 1 pt. Do not apply within 3 days of harvest. Injury may occur to Ribier, Cardinal and Almeria varieties when applications are made after the clusters appear. (2 1/2 pt.)

PEACHES: Black cherry aphids, black peach aphid, green peach aphid, Japanese beetle, rusty plum aphid: 1/2 pt. Oriental fruit moth, plum curculio and scales (European fruit lecanium, terrapin, cottony peach): 1 1/2 pt. Do not apply within 7 days of harvest. (9 pt.)

VEGETABLE AND FIELD CROPS

ALFALFA, CLOVER: Alfalfa weevil larvae, aphids, armyworms, clover leaf weevil, grasshoppers, lygus bugs, pea aphid, potato leafhoppers, spider mites, spittlebugs, vetch bruchid: 1/4 - 1/2 pt. Use higher rate for army worm control. May be applied on day of harvest or grazing. Do not apply during full bloom. (1 1/2 pt.)

ASPARAGUS: Asparagus beetles, thrips: 1/4 pt. Do not apply within 1 day of harvest. (1 1/2 pt.)

BEANS: Aphids, cucumber beetle, Japanese beetle, Mexican bean beetle, nitidulid beetle, pea leaf weevil, potato leafhopper, spider mites: 1/2 pt. Lygus bugs (on dry beans in California) - 1-1 1/2 pt. Do not apply within 1 day of harvest.

BEETS, GARDEN (seed crop): Lygus: 1/2 pt. Apply in seedball to hard seed stage. Repeat as needed. Do not apply within 7 days of harvest. (No limitation)

BEETS, TABLE: Aphids, beet armyworm, blister beetles, flea beetle: 2 1/2 pt. Do not apply within 7 days of harvest. (2 1/2 pt.)

BEETS, SUGAR: Aphids, spider mites: 1/2 pt. Do not apply within 3 days of harvest. If tops are to be used as food or feed, do not apply within 7 days of harvest.

BERRIES (blackberry, blueberry, bosanberry, dewberry, loganberry, raspberry): Aphids, Japanese beetle, rose leafhopper, rose scale, two-spotted spider mites, sap beetle: 2 pt. Do not apply within 1 day of harvest.

CARROTS: Aphids and leafhoppers. Do not apply within 7 days of harvest. 2 pt.

PARSNIPS: Aphids, diamond back moth, flea beetle, and leafhoppers: 2 pt. Do not apply within 7 days of harvest.

RADISHES: Aphids and diamond back moth. Do not apply within 7 days of harvest. 2 pt.

SALSIFY: Aphids, diamond back moth, flea beetle, and leafhoppers: 2 pt. Do not apply within 7 days of harvest. 2 pt.

HORSERADISH: Aphids, diamond back moth, flea beetle, and leafhoppers. Do not apply within 7 days of harvest. 2 1/2 pt.

CELERY: Aphids, leafhoppers, spider mites, white flies: 1 1/2 pt. Do not apply within 7 days of harvest. (1 1/2 pt.)

COLE CROPS (Broccoli, Brussels sprouts, cabbage, kale, mustard, turnips): Aphids, cabbage loopers, imported cabbage worm: 1 1/2-2 pt. Use higher rate for loopers and worms. Do not apply within 3 days of harvest on broccoli and turnips: 7 days on others.

CORN: Aphids, corn rootworm adults, sap beetles, thrips, young grasshoppers: 1/4 pt. Do not apply within 5 days of harvest or forage use. Caution: injury may occur in the whorl and silk stages with emulsifiable liquids. (1 1/4 pt.)

COTTON: Aphids, brown cotton leafworm, cotton leafperforator, leafhoppers, spider mites, whiteflies: 1 1/2 pt. Cotton fleahoppers, 1/2 - 1 pt. Fall armyworms, boll weevils, grasshoppers, garden webworms, and lygus: 1 1/2 - 2 pt.

CRANBERRIES: Black-headed fireworm, cranberry fruitworm, leafhoppers, spittlebug nymphs: 1 pt. Do not apply within 3 days of harvest.

CUCUMBER, PUMPKIN, SQUASH: spider mites, squash vine borer, thrips: 1 1/4 pt. Do not apply within 3 days of harvest on pumpkins. Do not apply on cucumber and squash unless plants are dry or within 1 day of harvest. (Pumpkin 2 pt.; other 1 1/4 pt.)

EGGPLANT: Aphids, lace bug, spider mites: 1 1/4 - 2 pt. Use higher rate for lace bugs. Do not apply within 3 days of harvest.

GRASS AND CEREAL CROPS: (Barley, corn, oats, wheat, barngrass, canary grass fescue, orchard grass, red top, timothy and yellow foxtail): Cereal leaf beetle: 1/2 - 1 1/4 pt. Do not apply within 7 days of harvest or forage use on barley, oats and wheat: 5 days on corn. Grass, Grass hay pastures and Range land; Aphids, leafhoppers, 1 1/4 pt. repeat application as necessary (Grasses 1 1/4 pt., corn 1 pt., other cereals 1 1/4 pt.)

HOPS: Aphids, mites: 1/4 pt. Do not apply within 7 days of harvest. (1 1/4 pt.)

LETTUCE, ENDIVE: Aphids, Alfalfa looper, cabbage looper, leafhoppers, mites: 2 pt. Do not apply within 14 days of harvest on leaf lettuce; 7 days on endive and head lettuce. (2 pt.)

MINT: Aphids, flea beetle adults, spider mites: 1 pt. Do not apply within 7 days of cutting. (1 pt.)

ONIONS: Onion maggot, thrips: 2 pt. For onion maggot control apply when flies first appear and repeat every 4 days. Do not apply within 3 days of harvest on green onions. (2 pt.)

PEAS: Aphids, pea weevil: 1/4 pt. Do not apply within 3 days of harvest; 7 days if pea vine hay to be fed to livestock.

PEPPERS: Aphids, pepper maggot: 1/4 pt. Do not apply within 3 days of harvest. (1 1/2 pt.)

POTATOES: False chinch bugs, leafhoppers, mealy bugs: 1 pt. Aphids, blister beetles: 2 1/2 pt.

RICE: Leafminer, 1/4 pt. Make first application when first rice blades appear on surface of the water and repeat as necessary. Stink bugs, 1 pt. in a minimum of 2 gal. water applied by aircraft during the early milk and dough stage of growing rice. Do not apply within 7 days of harvest. (1 1/2 pt.)

SAFFLOWER: Aphids, lygus bugs, grasshoppers: 1/4 pt. Do not apply within 3 days of harvest. (1 1/4 pt.)

POULTRY

POUNTRY RANGES - CHIGGERS - Apply 1 pt. Make full-coverage application 1 day prior to placing poultry on range. Repeat applications every 2-3 weeks as needed, avoid contamination of feeding troughs and water fountains.

ROOST PAINT - Chicken red mites, poultry lice - Mix 1-4 fl. oz. of this material per 1 gal. water or diesel fuel oil. Brush on this solution as a roost paint at the rate of 1 pt. per 150 ft. of roost.

FLY CONTROL

For use in and around buildings which house domestic animals, around homes, around yards, and the outside of meat and food processing plants. Do not use in the edible product areas of meat and food processing plants.

STRAIGHT CYTHON SPRAYS		CYTHON BAIT SPRAYS			
Amt. of Spray	Amt. Cythion 8-E	Amt. of Bait Spray	Amt. Cythion 8-E	Sugar (or)	Unsulphurized Molasses or Corn Syrup
2 1/2 gal.	3/4 cup	2 1/2 gal.	3/4 cup	1 cup	1 cup
12 gal.	1 1/4 pt.	12 gal.	1 1/4 pt.	2 1/2 lb.	1 qt.
100 gal.	1 1/2 gal.	100 gal.	1 1/2 gal.	20 lb.	2 gal.

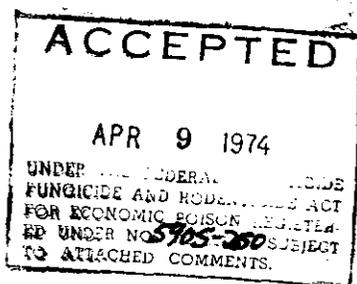
Apply spray at rate of 1 gal. per 1,000 sq. ft. on painted surfaces and 2 gal. per 1,000 sq. ft. on unpainted surfaces where flies alight or congregate. In most cases, adding molasses or sugar to the spray prolongs the insecticidal activity and serves as a fly attractant.

CAUTION: Avoid contamination of milk, milk equipment, and water. Avoid contamination of feed and food products; also drinking fountain and feed troughs. Remove calves under one month of age and lactating dairy animals from buildings before treating.

DORSOPHILA FLIES and DRIED FRUIT BEETLES: On or around cull fruit and vegetable dumps. Mix 7 1/2 pt. in 100 gal. of water and apply as a drench, using 8-10 gal. of spray per 100 sq. ft. (for best results dumps should not be over 18" deep). Do not feed treated fruit and vegetables.

MOSQUITO CONTROL

MOSQUITOES, FLIES AND SMALL FLYING INSECTS: (intermittently flooded areas, stagnant water, temporary rain pools.) For use by trained personnel as a 2-5% fog, aerosol or space spray. To make a 2% solution dilute in 1 to 45 parts of water, fuel oil or diesel oil. When using kerosene-type solvent as carrier, dilute 1 part in 45 parts of a mixture consisting of 4 parts kerosene-type solvent and 1 part aromatic hydrocarbon-type solvent. For a 5% solution, dilute 1 part in 18 parts of mixture using similar solvents. **MOSQUITO LARVAE IN STANDING WATER:** Apply at the rate of 8 fl. oz. (approx. 1/2 pt.) per acre. Mix in sufficient water or oil to obtain even coverage when applied by air or ground. Repeat applications as necessary. Avoid applying oil-based formulations to valuable ornamental plants as injury may occur. Keep out of any fish bearing waters.



NOTICE OF WARRANTY

Helena Chemical Company warrants that this material conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use and Conditions of Sale, subject to the inherent risks referred to therein. Helena Chemical Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY, and no agent of Helena Chemical Company is authorized to do so except in writing, with a specific reference to this warranty. Any damages arising from a breach of this warranty shall be limited to direct damages and not included consequential commercial damages such as loss of profit or value, etc.

NET CONTENTS

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DO NOT RE-USE THIS CONTAINER FOR ANY PURPOSE