

File



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 25 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Judy Oldham
HELENA CHEMICAL CO.
6075 Poplar Ave., Suite 500
Memphis, TN 38119

Subject: Label Amendment Submission of 06/30/93 in Response to PR Notice 93-7
EPA Reg. No. 5905-248
HELENA DIAZINON AG 500 INSECTICIDE

IMPORTANT NOTICE: This Letter Requires You to Submit a Notification to the Office of Compliance Monitoring within 20 Days.

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments listed on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

SERIOUS ERROR(S) ON SUBMITTED LABELING:

EPA has determined that one or more of the errors on the labeling you submitted to the Agency is categorized as "serious" as defined in PR Notice 93-11. In general, serious errors are those that may create a potential for harm to workers, handlers, other persons, or the environment; or those that prevent the achievement of the basic goals of the Worker Protection Standard (WPS) or FIFRA.

YOU MUST NOT SELL OR DISTRIBUTE (INCLUDING RELEASE FOR SHIPMENT) ANY PRODUCT BEARING THE SUBMITTED LABELING. Sale or distribution of any product with the incorrect labeling is a violation of FIFRA that could result in initiation of an action for civil penalties and/or cancellation of your product. This matter has been referred to the Office of Compliance Monitoring (OCM) for further action.

YOU MUST SUBMIT A NOTIFICATION TO THE OFFICE OF COMPLIANCE MONITORING WITHIN 20 DAYS OF THE DATE OF THIS LETTER.

1/27/16



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HELENA CHEMICAL CO.
5905-248 06/30/93
HELENA DIAZINON AG 500 INSECTICIDE

Original Submission

The correct bodywear statement for early entry is coveralls over short-sleeved shirt and short pants.

Remove the statement "Do not apply this product in a way that will....." from the Agri. Use Box to the "Direction for Use section before "For any requirement specific.....".

The Nonagri. Use Requirement section should be removed or some non-WPS uses should be identified in this section.

Not Needed

IN ADDITION, YOU SHOULD CONTACT IMMEDIATELY THE PERSONS TO WHOM YOU SOLD OR DISTRIBUTED YOUR PRODUCT AND INFORM THEM NOT TO SELL OR DISTRIBUTE ANY PRODUCT WITH THE INCORRECT LABELING.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the WPS labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have neither been reviewed nor accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

Submit the required notification. Then by the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling as amended

AND

- WITHIN one year from date of this acceptance.

Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

THIS PRODUCT MUST NOT BE USED ON GOLF COURSES AND SOD FARMS.

HELENA
DIAZINON® AG500
INSECTICIDE

ACCEPTED
with COMMENTS
In EPA Letter Dated

JAN 25 1994

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

5905-248

This product contains 4 lbs. Diazinon per gallon
For Control of Certain Insects on Fruits, Nuts, Vegetables,
Field Crops, Lawns and Ornamentals.

ACTIVE INGREDIENT:

O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate.....	48.50%
Xylene	37.80%
INERT INGREDIENTS.....	13.70%
TOTAL.....	100.00%

KEEP OUT OF REACH OF CHILDREN

WARNING

AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See Additional Warnings on Side Panel

EPA REG. NO.: 5905-248
EPA EST. NO.: First letters of product
batch code indicate producing
establishment: 5905-GA-1=CG.
5905-AR-1=WA. 5905-CA-1=KC.
5905-IA-1=DI. 5905-FL-1=T

NET CONTENTS:

MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TN 38137

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING**

May be fatal if swallowed. May be absorbed through skin. Do not breathe spray mist. Do not get in eyes, on skin, or on clothing. Avoid contamination of food and feed. Do not use on humans.

Keep out of reach of domestic animals. Do not contaminate feed or use on household pets or livestock.

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:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber or viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning / maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the 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.

STATEMENT OF PRACTICAL TREATMENT

Organophosphate

If Swallowed: Call a physician immediately. **DO NOT INDUCE VOMITING UNLESS NO OTHER TREATMENT IS AVAILABLE.** Vomiting may cause aspiration pneumonia. If it is necessary to induce vomiting, give victim one or two glasses of water and insert finger in back of throat. Repeat until vomit fluid is clear. Do not induce vomiting or give anything by mouth to an unconscious person.

If Inhaled: Remove victim to fresh air and apply artificial respiration if indicated.

If on Skin: Wash promptly with soap and water. Rinse thoroughly.

If in Eyes: Rinse eyes with plenty of water and call a physician immediately.

Note to Physician: Gastric lavage is indicated. Contains a petroleum-based solvent which presents

Exception: If the product is soil-incorporated or soil-injected, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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.

Chemical-resistant footwear plus socks

Protective eyewear

Chemical-resistant headgear for overhead exposure

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 the treated area until sprays have dried.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If pesticide, spray mixture or rinsate 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:

Triple rinse (or equivalent). Then puncture and dispose of in a sanitary landfill, or incinerate, or, if allowed by state and local authorities. Stay out of smoke from burning container.

aspiration hazard. Atropine sulfate and 2-PAM are specific antidotes.

ENVIRONMENTAL HAZARDS

This product is highly toxic to birds, fish and other wildlife including waterfowl. Birds and waterfowl feeding or drinking on treated areas may be killed. Apply this product only as specified on this label. Do not exceed maximum permitted label rates, as rates above those recommended significantly increase potential hazards to birds and waterfowl. Avoid overlapping of sprays. Where irrigation (watering) is recommended apply a minimum of 0.25" of water immediately after application. Stop irrigation before puddling occurs. Keep out of lakes, streams, ponds, tidal marshes and estuaries. Do not apply to water that will be used for recreational purposes and human and livestock consumption. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where fish, shrimp, crab, and other aquatic life are important resources. This product must not be used in areas where impact on threatened endangered species is likely. Contact your State Fish and Game Agency for information pertaining to areas having threatened endangered species. Apply this product only as specified on this label.

This pesticide is highly toxic to bees exposed to direct treatment or to residues remaining on the treated area. Do not apply when bees or actively visiting the crop, cover crop, or weeds blooming in the treatment area. Applications should be timed to provide the maximum possible interval between treatment and the next period of bee activity.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill, 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. 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 entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

GENERAL INFORMATION

Diazinon AG-500 is an emulsifiable solution which when diluted with water according to the directions below is intended for the control of insect pests of agricultural crops.

Do not use in barns or dwellings. Do not use on livestock.

In the directions for use given below, best control is obtained when application is made at first sign of insects. Application should be repeated as necessary to maintain control.

NOTE: The California Department of Agriculture has set a 5-day re-entry for Diazinon* on citrus, grapes, peaches and nectarines. Five days should lapse between the time of application and the time a worker may enter the field to engage in any activity requiring substantial contact with treated foliage. When a mixture of two or more organic phosphate pesticides are applied in combination, the interval should be prolonged by adding to the longest applicable interval an additional 50% of that interval.

Do not apply through any type of irrigation system.

FRUIT AND NUT CROPS

NOTE: Unless otherwise stated, the rates listed below should be applied as a dilute full cover spray.

ALMONDS: Mites, Twig Borers — Apply 1-1½ pts. per 100 gals. of water. Parlatoria Scales, San Jose Scales — Mix 1-1½ pts. Diazinon AG-500 2-3 gals. dormant oil per 100 gals. of water and apply as a dormant spray. Almond hulls may be used for feed for livestock.

APRICOTS: Aphids, Brown Mites (Clover Mites), Two-Spotted Spider Mites, Olive Scale Crawlers, San Jose Scale Crawlers — Mix 1 pt. per 100 gals. of light medium horticultural oil per 100 gals. of water. Apply when scale crawlers are present. Apricot Mealybugs — Mix 1 pt. per 100 gals. of water. Apply as a cover spray from petal fall to June. Do not apply within 10 days of harvest.

BLUEBERRIES: Cranberry Fruitworms, Cherry Fruitworms, Blueberry Maggots, Aphids, Thrips, Two-Spotted Mites — Mix 1 pt. per 100 gals. of water. Apply up to 200 gals. of spray per acre. Do not apply within 7 days of harvest.

CANEBERRIES: Blackberries, Boysenberries, Dewberries, Loganberries, Raspberries, Leafhoppers, Thrips, Aphids, Two-Spotted Mites, Raspberry Sawflies — Apply 2 pts. per acre in a minimum of 100 gals. of water. Raspberry Fruitworms — Apply at the above rates when blossom buds separate and repeat application immediately before blossoms open. Dryberry Mites — Apply 1-2 qts. per acre in a minimum of 100 gals. of water. Apply as a dormant spray in early spring, when canes are still on the ground and buds are closed. Make a second application when the buds are well developed, but still closed. Do not apply within 7 days of harvest. Raspberry Crown Borers (Raspberry Root Borers) — Apply 2 qts. per acre in a minimum of 100 gals. of water as a drench to the crown area and to the lower canes. Apply either in the spring before berries begin to form, or in the fall after harvest.

CHERRIES: Eye-Spotted Bud Moths, Fruit-Tree Leaf Rollers — Mix 1 pt. per 100 gals. of water. Apply in cover sprays as necessary, beginning with petal fall. Leafhoppers — Apply 1 pt. per 100 gals. of water in 3-5 applications beginning at petal fall and continuing through the growing season, or apply as infestations develop. Cherry Fruit Flies — Mix ½-1 pt. per 100 gals. of water. Make 3 or 4 applications, beginning when adult cherry fruit flies begin to emerge and repeat at 10-day intervals. Black Cherry Aphids — Mix 1 pt. per 100 gals. of water. Apply as cover spray when aphids appear and repeat after 10 days. San Jose Scale Crawlers — Mix 1 pt. per 100 gals. of water. Apply during the pre-pink stage or when crawlers first appear. Do not apply within 10 days of harvest. Cherry Rust Mites — Mix ½-1 pt. per 100 gals. of water. Apply as a supplemental spray after harvest.

CITRUS FRUITS: Grapefruit, Lemons, Limes, Oranges, Tangelos, Tangerines, Citrus Citron, Kumquats, and hybrids of these: Citrus Aphids, Fruit-Tree Leaf Rollers, Cottony-Cushion Scale Crawlers, and Soft Scale Crawlers — Apply ½-1 pt. per 100 gals. of water (maximum 1,000 gals. per acre) as a thorough cover spray when aphids and crawler stages of scale insects first appear. Fruit-Tree Leaf Rollers — Use ½-1 pt. per 100 gals. of spray (maximum 1,000 gals. per acre) when an average of 50 percent of eggs in egg masses have hatched in the spring. Citrus Thrips — Apply 1 pt. per 100 gals. of water (maximum 1,000 gals. per acre) when thrips first appear. Citrus Snow Scales — Apply 1-2 pts. per 100 gals. of water (maximum 1,000 gals. per acre) as a post-bloom spray and again as a summer spray. For heavy snow scale infestations use the higher dosage rate. Thorough coverage of tree trunks, limbs, and twigs is essential. Do not apply during bloom. Do not apply to citrus within 21 days of harvest.

CRANBERRIES: Blackheaded Fireworms (*Rhopobota naevana*) — Apply 2 qts. in 400 gals. of water per acre. Cranberry Fruitworms — Apply 3 qts. in 400 gals. of water per acre. Do not apply within 7 days of harvest.

FIGS: Vinegar Flies (*Drosophila* spp.), Dried Fruit Beetles — Apply 1 pt. per 100 gals. of water. Do not apply within 5 days of harvest.

FILBERTS: Filbert Leaf Rollers, Aphids — Apply 1-2 qts. in 250-400 gals. of water per acre, as a thorough cover spray.

GRAPES: Pacific Spider Mites, Leafhoppers, Grape Berry Moths, Grape Leaf Folders — Apply 1-2 pts. per acre in a minimum of 100 gals. of water as a thorough cover spray. Do not apply within 18 days of harvest. *Drosophila* spp. — Apply 12-18 fl. oz. per acre in a minimum of 100 gals. of water as a thorough cover spray, or apply when insects first appear. Make additional applications at weekly intervals as necessary. Do not apply within 7 days of harvest.

OLIVES: Olive Scales — Mix $\frac{3}{4}$ -1 pt. of Diazinon AG-500 plus $1\frac{1}{2}$ gals. of light medium summer horticultural oil per 100 gals. of water. Apply as a cover spray in June or July. Do not apply during bloom to avoid injury to pollinating insects or within 75 days of harvest.

PEACHES AND NECTARINES: Aphids, Brown Mites (Clover Mites), Two-Spotted Spider Mites, Olive Scale Crawlers, San Jose Scale Crawlers — Mix 1 pt. per 100 gals. of water. Apply when aphids, mites, and scale crawlers first appear. Olive Scale Crawlers — Mix $\frac{1}{2}$ pt. of Diazinon AG-500 plus $1\frac{1}{2}$ gals. light medium horticultural oil per 100 gals. of water. Apply when scale crawlers are present. Oriental Fruit Moths — Mix 1 qt. per 100 gals. of water and apply at 100% petal fall. Make 2 additional applications at 10-15 day intervals. Time the last application to peak adult Oriental Fruit Moth flight, if possible. Peach Twig Borers — Mix 1 pt. per 100 gals. of water and apply to peaches in May and June. Leafhoppers (Peaches only) — Apply 1 pt. per 100 gals. of water in 3-5 applications beginning at petal fall and continuing through the growing season, or apply as infestations develop. White Peach Scale (Peaches only) — As a post-harvest spray apply $1\frac{1}{2}$ -2 pts. per 100 gals. of water timed to coincide with peak crawler and immature scale activity. Under conditions of heavy infestations 2 applications may be necessary. Do not apply to peaches within 20 days, or to nectarines within 10 days of harvest.

PECANS: Aphids, Mites, Pecan Nut Casebearers, Walnut Caterpillars — Apply 1-3 qts. per acre as a foliage spray in a minimum of 100 gals. of water. Do not apply after husks crack.

PINEAPPLES: Scales — Apply 5 qts. of Diazinon AG-500 plus 2 gals. of light or medium horticultural oil in 500 gals. of water per acre to the vegetative slips on the plants following harvest of pineapple. Mealybugs — Apply 2 qts. per acre in a minimum of 100 gals. of water. May be applied on day of harvest. Pineapple forage and refuse may be fed to livestock 7 days following last application.

PLUMS AND PRUNES: Brown Mites (Clover Mites), European Red Mites — Apply 1 pt. per 100 gals. of water. Leaf Curl Plum Aphids, Mealy Plum Aphids, Thistle Aphids — Apply $\frac{1}{2}$ -1 pt. per 100 gals. of water. Do not apply within 10 days of harvest.

STRAWBERRIES: Aphids, Two-Spotted Spider Mites — Apply 1 pt. per 100 gals. of water per acre. Cyclamen Mites — Apply 1 qt. per 100 gals. of water per acre, directing spray to plant crowns. Plants should be sufficiently agitated to assure thorough coverage of the foliage. Make additional applications, if necessary, after harvest. Mole Crickets — Broadcast 1 qt. per acre when insects are present. Apply 1 to 2 days before transplanting and mix into the top 1-2 inches of soil immediately. Strawberry Leaf Rollers — Mix $\frac{3}{4}$ -1 pt. per 100 gals. of water. Apply 200 gals. of spray per acre when blossoms show color. Do not apply within 5 days of harvest.

WALNUTS: Aphids, Mites — Apply 1 qt. per acre as a foliage spray in a minimum of 100 gals. of water. Codling Moths, Scale Crawlers, Walnut Caterpillars — Apply 3 qts. per acre as a foliage spray in a minimum of 100 gals. of water. Do not apply after the husks open.

VEGETABLE FOLIAR INSECTS: Unless otherwise stated, foliar applications of Diazinon AG-500 should always be applied to vegetable crops as a spray in a minimum of 1 gal. of water per acre for aerial applications and a minimum of 10 gals. of water per acre for ground applications.

BEANS: Pole Beans, Snap Beans, Lima Beans: Black Bean Aphids, Mexican Bean Beetles, Leaf Miners — Apply 1- $1\frac{1}{2}$ pts. per acre. Cucumber Beetles — Apply $\frac{3}{4}$ pt. in 100 gals. of water per acre. Do not apply within 7 days of bean harvest. Bean forage or bean hay may be fed to dairy and beef cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.

LIMA BEANS: Dipterous Leaf Miners, Leafhoppers, Mites — Apply 1 pt. per acre. Do not apply within 7 days of harvest. Bean forage or bean hay may be fed to dairy and beef cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.

BROCCOLI, CABBAGE AND CAULIFLOWER: Aphids, Diamondback Moths, Imported Cabbageworms — Apply $\frac{1}{2}$ -1 pt. per acre. Do not apply within 7 days of harvest. Bean forage or bean hay may be fed to dairy and beef cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.

BRUSSELS SPROUTS: Aphids, Diamondback Moths, Imported Cabbageworms — Apply 1 pt. per acre. Generally, applications at 7-10 day intervals will be required. Do not apply to brussels sprouts within 7 days of harvest.

CARROTS: Aphids — Apply 1 pt. per acre. Do not apply within 10 days of harvest.

CELERY: Aphids, Flea Beetles — Apply 1 pt. in 100 gals. of water per acre. Do not apply within 10 days of harvest. Plants should be market trimmed (tops removed) before being shipped or used. Tops should not be used for feed or food.

COLLARDS, KALE, SWISS CHARD, AND TURNIP TOPS: Aphids, Imported Cabbageworms, Diamondback Moths, Harlequin Cabbage Bugs, Corn Earworms — $\frac{1}{2}$ -1 pt. per acre. Do not apply to collards, kale, or turnip tops within 10 days, Swiss chard within 12 days of harvest.

CUCUMBERS: Aphids, Serpentine Leaf Miners, Thrips — Apply 1 pt. per acre. Do not apply within 7 days of harvest.

LETTUCE AND ENDIVE: Aphids, Dipterous Leaf Miners — Apply $\frac{1}{2}$ -1 pt. per acre. Do not apply within 10 days of harvest.

MELONS AND SQUASH: Cantaloupes, Casabas, Crenshaws, Honeydew Melons, Muskmelons, Persian Melons, and hybrids of these Watermelons and their Hybrids, Summer and Winter Squash: Aphids, Leafhoppers, Mites — Apply 1-1 $\frac{1}{2}$ pts. per acre. Serpentine Leaf Miners, Thrips — Apply $\frac{1}{2}$ -1 pt. per acre. Do not apply to melons and winter squash within 3 days or to summer squash within 7 days of harvest.

MUSHROOM HOUSES: Mushroom Flies (Phorids and Sclerids) — Mix $\frac{1}{2}$ -1 gal. in 50 gallons of water (05% to 10% actual Diazinon) and spray on outside and inside walls and ventilators of mushroom houses, after compost in beds has been pasteurized by heating. Do not spray compost in beds or after spawning. To treat wooden sides of beds, posts, doors and door frames after pasteurizing, mix $\frac{1}{2}$ pt. in 6 gals. of water and apply with a brush. Do not treat compost.

ONIONS: Onion Thrips — Apply 1 pt. per acre. Do not apply within 10 days of harvest.

PEAS: Aphids, Leaf Miners — Apply $\frac{3}{4}$ -1 pt. per acre. Peas may be picked immediately. Pea vines and pea vine hay may be fed to dairy and beef cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.

PEPPERS: Aphids, Serpentine Leaf Miners — Apply $\frac{1}{2}$ pt. per acre. Do not apply within 5 days of harvest.

POTATOES: Aphids, Flea Beetles, Colorado Potato Beetles, Dipterous Leaf Miners — Apply $\frac{1}{2}$ - $\frac{3}{4}$ pt. per acre. Banded Cucumber Beetles, Leafhoppers, Southern Armyworms — Apply $\frac{3}{4}$ -1 pt. per acre. Do not apply within 35 days of harvest.

RADISHES, PARSNIPS, AND TURNIPS: Aphids, Flea Beetles, Dipterous Leaf Miners — Apply $\frac{1}{2}$ -1 pt. per acre. Do not apply within 10 days of harvest.

SPINACH AND BEETS: Aphids, Dipterous Leaf Miners — Apply $\frac{1}{2}$ -1 pt. per acre. Do not apply to spinach within 10 days, or to beets within 14 days of harvest.

SQUASH: (Summer and Winter): See Melons and Squash Section.

SWEET CORN: Corn Earworms — Apply 1-1 $\frac{1}{4}$ qts. per acre when silks first appear. Two or three repeat applications at 2-3 day intervals will usually be necessary. Corn may be picked immediately following last application. Corn forage may be fed to dairy and beef cattle and sheep. Refer also to Corn under Field and Forage Foliar Insects and Field and Forage Soil Insects.

TOMATOES: Aphids, Dipterous Leaf Miners — Apply $\frac{1}{2}$ pt. per acre. To control leaf miners weekly applications are usually required. Banded Cucumber Beetles, Fall Armyworms, Southern Armyworms — Apply $\frac{3}{4}$ -1 pt. per acre. Vinegar Flies (*Drosophila* spp.) — Apply $\frac{1}{2}$ -1 $\frac{1}{2}$ pts. per acre. Weekly applications are usually required. Do not apply within 1 day of harvest.

WATERCRESS: (Hawaii only): Cyclamen Mites — Mix 1 pt. per 100 gals. of water and apply to one acre as a thorough cover spray. Spray should be directed into the crowns and growing tips of plants. If infestation is heavy, make a second application no later than 10 days after the first application. Repeat applications as necessary. Do not apply within 5 days of harvest.

VEGETABLE SOIL INSECTS: Unless otherwise stated, soil applications of Diazinon AG-500 should always be applied to

vegetable crops as a spray in a minimum of 5 gals. of water per acre for ground applications.

Cutworms (Surface and Subterranean)

Broccoli	Celery	Lettuce	Peppers	Sweet Corn
Brussels Sprouts	Collards	Lima Beans	Potatoes	Swiss Chard
Cabbage	Cucumbers	Muskmelons	Snap Beans	Tomatoes
Cantaloupes	Endive (escarole)	Parsley	Spinach	Watermelons
Cauliflower	Kale	Peas	Summer Squash	Winter Squash

Broadcast 2-4 qts. per acre just prior to planting. Work into the soil immediately. 2-3 inches for surface cutworms. 3-6 inches for subterranean cutworms.

Garden Symphylans (Centipedes)

Cabbage	Lettuce	Radishes	Tomatoes
Carrots	Peas	Red Beets	Turnips
Corn	Pole Beans	Snap Beans	

Broadcast 10 qts. per acre just prior to planting. Work into soil 4-8 inches immediately. This preplant treatment will also control other soil insects such as cutworms (surface and subterranean), mole crickets, root maggots, and wireworms.

Mole Crickets

Broccoli	Cauliflower	Kale	Peppers	Tomatoes
Brussels Sprouts	Collards	Lettuce	Radishes	Turnips
Cabbage	Endive (escarole)	Mustard		

Broadcast 1 qt. per acre when insects are present. Make application to plant beds or field 1-2 days prior to sowing of seed or transplanting and work into soil 1-2 inches immediately.

ONION MAGGOTS: Onions Furrow Application — Apply 1 qt. per acre in sufficient water to drench the seed furrow at planting time. Broadcast Application — Broadcast 2-4 qts. per acre just prior to planting. Work into soil 3-4 inches immediately.

ROOT MAGGOTS: Broccoli, Brussels Sprouts, Cabbage, and Cauliflower: Broadcast Application — Broadcast 2-3 qts. per acre and immediately work into the soil 3-4 inches, before seeding, either in the seedbed or in the field, or before transplanting. Transplant Water (Drench) Application — Mix $\frac{1}{4}$ - $\frac{1}{2}$ pt. in 50 gals. of transplant water, when 200-300 gals. of water are used per acre. May be applied at the rate of $\frac{1}{2}$ -1 cupful per plant, either by hand or by tractor-mounted sprayer equipped with drop nozzles to direct spray to the base of the plant. Transplant water treatments may result in stand reduction due to plant water treatments may result in stand reduction due to plant stress at time of transplanting. Radishes — Mix 1 qt. in 50 gals. of water. Apply 80-100 gals. per acre (1-1 $\frac{1}{2}$ gals. per 1,000 linear feet of row) in the seed furrow at planting time.

Wireworms:

Broccoli	Celery	Lima Beans	Potatoes	Sweet Potatoes
Brussels Sprouts	Collards	Muskmelons	Spinach	Swiss Chard
Cabbage	Cucumbers	Onions	Snap Beans	Tomatoes
Cantaloupes	Endive (escarole)	Parsley	Summer Squash	Watermelons
Carrots	Kale	Peas	Sweet Corn	Winter Squash
Cauliflower	Lettuce	Peppers		

Broadcast 3-4 qts. per acre prior to planting, and work into soil 4-8 inches immediately

POTATOES: Wireworms — Broadcast 3-6 qts. per acre prior to planting. Immediately disk or harrow into soil 4-8 inches. Southern Potato Wireworms (Southeastern U.S.) — For use to control southern potato wireworms in potatoes grown on mineral soils in the southeast, apply 2-4 qts. per acre as a soil treatment prior to planting, and immediately mix thoroughly by disking, or other

suitable means into the top 3-6 inches of soil, depending on location of wireworms.

FIELD AND FORAGE FOLIAR INSECTS: Unless otherwise stated, foliar application of Diazinon AG-500 should always be applied to field and forage crops as a spray in a minimum of 2 gals. of water per acre for aerial applications and a minimum of 10 gals. of water per acre for ground applications.

ALFALFA AND CLOVER: Spotted Alfalfa Aphids, Yellow Clover Aphids, Pea Aphids, Leafhoppers, Plant Bug Nymphs, Mites — Apply $\frac{3}{4}$ -1 pt. per acre. Grasshoppers — Apply 1 pt. per acre. Following the above applications, dairy and beef cattle and sheep (1) may be grazed immediately following applications, (2) may be fed green alfalfa or clover immediately following cutting, and (3) may be fed hay provided alfalfa or clover is not cut for hay for 7 days following treatment. Alfalfa Weevil Larvae — For control in the spring, apply 2-3 pts. per acre when feeding damage to growing tips becomes evident. Repeat application, if necessary. If damage is already extensive, cut the hay and make application to the stubble. Do not graze dairy and beef animals or sheep for 2 days. Do not cut for hay for 10 days following treatment. Do not spray livestock directly with either air or ground equipment. Do not treat during bloom to avoid injury to pollinating insects.

CLOVER: Striped Ground Crickets — Broadcast 1-2 pts. per acre following seeding in the fall but prior to clover emergence.

CORN: Use a minimum of 1 gal. of water for aerial applications and 5 gals. of water for ground applications. Corn Rootworm Adults — Apply $\frac{1}{2}$ -1 pt. per acre. Corn Leaf Aphids — Apply 1-2 pts. per acre. Complete coverage of the upper portions of the plants is essential. Repeat applications as necessary. Mites — Apply 1 pt. per acre when infestations first appear. Repeat applications as necessary. Grasshoppers — Apply 1 pt. per acre. Sap Beetles — Apply 2-2 $\frac{1}{2}$ pts. per acre. Add 1-2 gals. of soluble mineral oil per acre to the spray mixture. Consult State Agricultural Experiment Stations or State Extension Service Specialists for proper timing of sprays. Corn may be picked immediately following last application. Corn forage may be fed to dairy and beef cattle and sheep.

COTTON: Spider Mites, Aphids, Leafhoppers, Lygus Bugs, Cotton Leafworms, Cotton Leaf Perforators — Apply 1-2 pts. in 5-25 gals. of water per acre. Repeat as infestation warrants. Do not apply within 14 days of harvest. Do not graze treated cotton plants, or feed gin waste to livestock.

HOPS: Aphids, Mites — Apply 1 qt. per acre. Do not apply within 14 days of harvest.

SORGHUM: Use a minimum of 1 gal. of water for aerial applications and 5 gals. of water for ground applications. Sorghum Midges — Apply $\frac{1}{2}$ -1 pt. per acre when 90% of heads have emerged from the boot. Repeat application within 4 days. Mites — Apply 1 pt. per acre when infestation first appears and repeat applications as necessary. Greenbug — Apply at the rates indicated below when infestation first appears and repeat as necessary. Texas and Oklahoma — Apply $\frac{1}{2}$ -1 pt. per acre. All Other Areas — Apply 1 pt. per acre. Corn may be fed to livestock immediately following treatment. Do not apply within 7 days of harvesting for grain.

SUGAR BEETS: Leafhoppers, Dipterous Leaf Minors, Aphids — Apply $\frac{3}{4}$ -1 pt. per acre. Grasshoppers — Apply 1 pt. per acre. NOTE: Tops may be fed to beef and dairy animals.

SUGARCANE: Aphids — Apply $\frac{1}{2}$ -1 pt. per acre. Allow 1 day between last application and harvest. Bagasse and forage may be fed to livestock.

TOBACCO: Aphids, Flea Beetles — Apply $\frac{1}{2}$ - $\frac{3}{4}$ pt. per acre. Do not apply within 3 days of harvest. Grasshoppers — Apply 1 pt. per acre. Do not apply within 14 days of harvest.

FIELD AND FORAGE SOIL INSECTS: Unless otherwise stated, soil applications of Diazinon AG-500 should always be applied to field and forage crops as a spray in a minimum of 5 gals. of water per acre for ground applications.

ALFALFA AND CLOVER: Cutworms (Surface and Subterranean) — Broadcast 2-4 quarts per acre just prior to planting. Work into the soil immediately 2-3 inches for surface cutworms, 3-6 inches for subterranean cutworms.

CORN: Corn Rootworm Larvae: Band Application at Planting Time — Apply 1-2 qts. per acre. Make application in the seed furrow or apply 2½-5 ozs. per 1,000 linear feet of corn row in a 4-7 inch band directly behind the planter shoe. For band treatment refer to the row spacing chart for amounts recommended per acre.

SUGGESTED RATES ACCORDING TO ROW SPACING
FOR CORN ROOTWORM LARVAE CONTROL

Row Spacing	Linear feet of Corn row/acre	Rate per acre Planting time application	Rate per acre Post emergence basal treatment
48"	10,890	28-56 oz.	14-28 oz.
42"	12,455	31-62 oz.	15.5-31 oz.
40"	13,068	32-64 oz. (1-2 qts.)	16-32 oz. (½-1 qt.)
38"	13,939	35-70 oz.	17.5-35 oz.
36"	14,250	36-72 oz.	18-36 oz.
30"	17,424	44-88 oz.	22-44 oz.
24"	21,780	55-110 oz.	27.5-55 oz.
20"	26,136	64-128 oz. (2-4 qts.)	32-64 oz. (1-2 qts.)
15"	34,848	88-176 oz.	44-88 oz.

NOTE: For row spacings not listed, calculate the appropriate dosage based on the 40-inch row figure.

Postemergence Basal Treatment: Apply 1¼-2½ oz. per 1,000 linear feet of corn row in sufficient water to thoroughly wet base of corn plant and a narrow band of soil next to the plant. Refer to the row spacing chart for amounts recommended per acre. Cover treated band with 2-3 inches of soil using a disk tiller or cultivator immediately after spraying. Application should be made at the first sign of corn rootworm larvae, but not later than June 24 in the Middle Corn Belt, or July 1 in the Northern Corn Belt.

Seed Corn Maggots: Broadcast 2-4 qts. per acre just prior to planting. Work into soil 2 inches immediately.

Cutworms (Surface and Subterranean): Broadcast 2-4 qts. per acre. For surface cutworms apply just prior to planting or when larvae first appear and work into soil 1-2 inches immediately. Do not apply prior to planting or when larvae first appear and work into soil 1-2 inches immediately. Do not apply later than layby. For subterranean cutworms apply just prior to planting and work into soil 3-6 inches immediately.

Wireworms: Apply 3-4 qts. per acre prior to planting and work into the soil 4-8 inches immediately.

Corn may be picked immediately following last application. Corn forage may be fed to dairy and beef cattle and sheep.

COWPEAS: Cutworms (Surface and Subterranean) — Broadcast 2-4 qts. per acre, just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 inches for subterranean cutworms.

LESPEDEZA: Cutworms (Surface and Subterranean) — Broadcast 2-4 qts. per acre just prior to planting. Work into the soil immediately 2-3 inches for surface cutworms, 3-6 inches for subterranean cutworms.

PEANUTS: Cutworms — Apply 2 qts. per acre in a 12-inch band over the row. Thorough coverage of the foliage is essential. Begin application when small larvae appear. Two or three additional applications at three week intervals may be necessary. Do not apply within 21 days of peanut harvest. Livestock (1) may be fed peanut hulls, (2) may be fed peanut forage 7 days following treatment, and (3) may be fed peanut hay 21 days following treatment.

SORGHUM: Cutworms (Surface and Subterranean) — Broadcast 2-4 qts. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 inches for subterranean cutworms.

SOYBEANS: Cutworms (Surface and Subterranean)— Broadcast 2-4 qts. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 inches for subterranean cutworms.

SUGAR BEETS: Wireworms — Broadcast 3-4 qts. per acre just prior to planting, and work into soil 4-8 inches immediately. Tops may be fed to beef and dairy animals.

SUGARCANE: Wireworms — Apply 1 gal. per acre in a 12-inch band centered over the furrow. Make application directly to seed pieces in open furrow at covering time.

TOBACCO: Cutworms — Broadcast 2-3 qts. per acre before transplanting and work into the soil 2-4 inches immediately. Green June Beetle Larvae — Mix ¼ pt. in 50 gals. of water and apply as a drench (100 gals. per 100 sq. yds.) to unrooted areas of plant beds with sprinkling can. Mole Crickets — Broadcast 1 qt. per acre, when insects are present. Make applications to beds or fields 1-2 days prior to sowing of seed or transplanting, and work into soil 1-2 inches immediately. Seed-Corn Maggots — Broadcast 3 pts. per acre, 3-4 weeks before transplanting. Work into soil 2 inches immediately. Wireworms — Broadcast 2-3 qts. per acre, 3-4 weeks before transplanting. Work into soil 8-9 inches immediately.

RANGE, PASTURE, AND GRASSLAND INSECTS: Unless otherwise stated, Diazinon AG-500 should always be applied as a spray in a minimum of 1 gal. of water per acre for aerial applications and a minimum of 5 gals. of water per acre for ground applications.

BERMUDAGRASS AND FORAGE GRASSES (Other than Range and Pasture Grasses): Thrips, Whiteflies, Grasshoppers — Apply 1 pt. per acre. Dairy and beef cattle, and sheep (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting, and (3) forage grasses may be cut for hay 7 days following treatment. Do not repeat application more often than once every 30 days.

RANGELAND, PASTURE, DITCH BANKS, ROADSIDES, WASTELAND, NONCROP AREAS, AND BARRIER STRIPS: Grasshoppers — Apply ¾-1 pt. per acre in water or oil (minimum of 1 gal. of oil per acre) when insects first appear, preferably in the nymphal state. Thorough coverage of the foliage is essential. Dairy and beef cattle and sheep (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting, and (3) may be fed hay provided grass is not cut for hay for 21 days if the spray is a water solution, or for 30 days if the spray is an oil solution. Do not spray livestock directly with either air or ground equipment. Do not repeat application for 30 days.

ORNAMENTAL INSECT CONTROL: To control certain insects on Arborvitae, Azalea, Birch, Boxwood, Camellia, Carnation, Chrysanthemum, Douglas Fir, Elm, Gladioli, Hawthorn, Holly, Juniper, Lilac, Locust, Maple, Oak, Pine, Plum, Poplar, Rhododendron, Rose Spruce, and Willow, and apply the recommended rates indicated below.

Insects	Rate per 3 gals. water	Rate per 100 gals. water
Aphids, Bagworms, Carnation Bud Mites, Carnation Shoot Mites, Clover Mites, Cyclamen Mites, Dipterous Leaf Miners, European Pine Shoot Moths, European Red Mites, Flea Beetles, Holly Bud Moths, Leafhoppers, Obscure Root Weevils, Omnivorous Leaf Tiers, Privet Mites, Scale Crawlers (Cottony-Cushion, Lecanium, Pine Needle, San Jose, Soft Scale), Thrips, Two-Spotted Mites, Web-worms, Whiteflies	½ fl. oz.*	1 pt.*
Apple-and-Thorn Skeletonizers, Cotoneaster Webworms, Fall Webworms, Hemlock Chermes, Oak Loppers, Obliquebanded Leaf Rollers, Pear Slugs, Tent Caterpillars	1½ fl. oz.	3 pts.

*1 fl. oz. = 2 tablespoons.

16 fl. oz. = 1 pint

Do not use on certain Ferns, Poinsettia, Hibiscus, Papaya, Pilea and Gardenia, since injury to the plants may occur.

Mimosa Webworms — Mix ½ fl. oz. in 3 gals. of water (or 1 pt. in 100 gals. of water) and apply as a thorough foliar spray when adults first appear. Make a second and third application at 4-5 week intervals.

LAWN INSECT CONTROL: To control insects listed below, apply recommended rates. For control of Ants, Brown Dog Ticks, Clover Mites, Crickets, Earwigs, Fleas, Millipedes, Sowbugs, and Collembola (Springtails), which are commonly found near the house and may enter the house, spray a 5-ft. band of soil around the house, as well as the house foundation wall to a height of 2-3 ft. Repeat application if necessary. Boxelder Bugs — Spray bugs outside the home with 1 ¼-2 ½ fl. oz. (2 ½-5 tablespoons) in 1 gal. water. At the same time thoroughly spray around foundation, windows, doors, tree trunks, and into cracks and other places where the insects hide.

BILLBUGS AND WHITE GRUBS, SUCH AS JAPANESE BEETLE LARVA, EUROPEAN CHAFER AND SOUTHERN CHAFER — Apply 4 fl. oz. per 1,000 sq. ft. of lawn. Water grass thoroughly after application. For grub control make application any time between late July and early October. For billbug control apply when activity is first observed or when chewed or brown grass is present, indicating damage from this insect.

HYPERODES WEEVIL (New York only) — Apply 3 fl. oz. per 1,000 sq. ft. of grass. Water grass thoroughly after application. Treat problem areas in mid-April and again in mid-May.

Insects	Rate/1,000 sq. ft.		Remarks
	Diazinon AG-500	Water	
Lawn Chinch Bugs	2-3 fl. oz. or 3-6 fl. oz.	25 gals.*	Use higher rate for longer residual control and in lawns of dense growth, such as St. Augustine lawns.
Ants, Armyworms, Clover Mites, Collembola (Springtails), Crickets, Cutworms, Digger Wasps, Earwigs, Fruit Flies, Lawn Billbugs, Sod Webworms (Lawn Moths), Sowbugs	4 fl. oz.	3 gals.	Spot spray ant hills & wasp ground nest opening. For lawn billbugs, irrigate the lawn thoroughly immediately after treatment. For fruit flies, mow grass & water well before treatment but delay application until grass is dry. Do not water again until necessary.
Brown Dog Ticks, Bermuda Mites, Chiggers, Fleas, Leafhoppers	1 ¼ fl. oz.	3 gals.	Do not apply to animals. For brown ticks spray grass and under shrubbery, particularly near house.
Millipedes	8 fl. oz.	3 gals.	
Rhodes-grass Scales	5 fl. oz.	25 gals.*	Apply when crawlers first emerge.

*Alternately make application in 3 gals. of water per 1,000 sq. ft. and thoroughly water immediately following application.

WARRANTY AND LIMITATION OF DAMAGES.
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 expressed or implied warranty, including any other expressed 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 shall not include consequential commercial damages such as loss of profits or value, etc.

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