



# DIAZINON® 40W

(WETTABLE POWDER)

**Insecticide for fruits, nuts, vegetables, field crops and ornamentals.**

ACTIVE INGREDIENT:

*O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate .....	40%
INERT INGREDIENTS .....	60%
Total ..... 100%	

\*Diazinon® is the Reg. T.M. of CIBA-GEIGY  
E.P.A. Reg. No. 802-512-AA

**WARNING — Keep out of reach of children**

May be fatal if swallowed. May be absorbed through skin. Do not breathe dust or spray mist. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Avoid contamination of food and feed. Keep out of reach of domestic animals. Do not use on humans or household pets. Do not permit children or pets to go on to sprayed grass until spray has completely dried.

**APPLY THIS PRODUCT ONLY AS SPECIFIED ON THIS LABEL**

This product is toxic to fish, birds, and other wildlife. Birds feeding on treated areas may be killed. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where these are important resources. Keep out of lakes, streams, or ponds. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment, or disposal of wastes.

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. Do not reuse container. Destroy it by burying or burning. Avoid smoke or fumes.

NOTICE: Follow directions carefully. Timing and method of application, weather and crop condition are important factors in the use of this product and are beyond the control of the seller. Buyer may be liable for damage to property or handling of this material not in strict accordance with directions given hereon.

ACCEPTED  
SEP 17 1977  
INSECTICIDE  
EPA REG. NO. 802-512-AA  
EPA EST. 802-OR-1

**NOTICE: See booklet attached to back of this container for complete list of use instructions.**

**NET WEIGHT 5 LBS.**

THE CHAS. H. LILLY CO.  
PORTLAND, OREGON  
EPA Est. 802-OR-1

*Miller's*  
**Diazinon**  
 Insecticide **40W**

THIS LABEL BOOKLET CONTAINS ALL DIRECTIONS FOR USE ON THE FOLLOWING:

- |                    |                   |                |
|--------------------|-------------------|----------------|
| - Alfalfa          | - Fly control in  | - Pecans       |
| - Almonds          | barns and animal  | - Peppers      |
| - Apples           | sleeping quarters | - Pineapple    |
| - Apricots         | - Grapefruit      | - Plums        |
| - Beets            | - Grapes          | - Pole Beans   |
| - Bermudagrass     | - Hops            | - Potatoes     |
| - Blueberries      | - Kale            | - Prunes       |
| - Broccoli         | - Lawns           | - Radishes     |
| - Brussels Sprouts | - Lemons          | - Rangeland    |
| - Cabbage          | - Lespedeza       | - Snap Beans   |
| - Caneberries      | - Lettuce         | - Sorghum      |
| - Carrots          | - Lima Beans      | - Soybeans     |
| - Cauliflower      | - Melons          | - Spinach      |
| - Celery           | - Mushroom Houses | - Squash       |
| - Cherries         | - Nectarines      | - Strawberries |
| - Citrus Fruits    | - Olives          | - Sugar Beets  |
| - Clover           | - Onions          | - Sugarcane    |
| - Collards         | - Oranges         | - Sweet Corn   |
| - Corn             | - Ornamentals     | - Swiss Chard  |
| - Cotton           | - Parsnips        | - Tobacco      |
| - Cowpeas          | - Pasture & Grass | - Tomatoes     |
| - Cranberries      | Forage            | - Turnips      |
| - Cucumbers        | - Peaches         | - Walnuts      |
| - Endive           | - Peanuts         | - Watercress   |
| - Figs             | - Peas            | (Hawaii only)  |
| - Filberts         |                   |                |

**IMPORTANT:** Read all warnings, precautions, and notices on container label and in this booklet before using this product.

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**Diazinon**  
**40W**

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**NOTICE:** Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risk of use, storage or handling of this material not in strict accordance with directions given herewith.

MP-1J

**WARNING: KEEP OUT OF REACH OF CHILDREN**

May be fatal if swallowed. May be absorbed through skin. Do not breathe dust or spray mist. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Avoid contamination of food and feed. Keep out of reach of domestic animals. Do not use on humans or household pets. Do not permit children or pets to go on to sprayed grass until spray has completely dried.

**APPLY THIS PRODUCT ONLY AS SPECIFIED ON THIS LABEL.**

This product is toxic to fish, birds, and other wildlife. Birds feeding on treated areas may be killed. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where these are important resources. Keep out of lakes, streams, or ponds. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment, or disposal of wastes.

This product is highly toxic to bees exposed to direct treatment or residues on crops.

Protective information may be obtained from your Co-operative Agricultural Extension Service. Do not reuse container. Destroy it by burying or burning. Avoid smoke or fumes.

In the directions for use given in this booklet, unless otherwise noted, Miller's Diazinon 40W should be mixed with sufficient water to assure thorough coverage. Best control is obtained when application is made at first sign of insects. Applications should be repeated as necessary to maintain control.

Since Diazinon 40W is a wettable powder formulation, constant agitation is necessary during application.

**NOTE:** The California Department of Agriculture has set a 5-day reentry 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 largest applicable interval an additional 50% of that interval.

**USE PRECAUTIONS:** Observe number of days before harvest for last application noted in parenthesis by each food crop. Unless otherwise noted the maximum dosage for each crop, indicated in pounds of Diazinon 40W is shown in parenthesis ( ) following crop listings. Do not apply when honey bees are foraging in the garden.

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## Fruit and Nut Insects

**ALMONDS** (Max. dosage-15 lbs. per acre)

**Mites, Twig Borers** : Apply 1½-2 lbs. per 100 gals. of water.

**Parlatoria Scales, San Jose Scales**: Mix 1½-2 lbs. plus 2-3 gals. dormant oil per 100 gals. of water and apply as a dormant spray.

Almond Hulls may be fed to livestock.

**APPLES (14)** (Max. dosage-15 lbs. per acre)

**Leafhoppers**: Apply 1½ lbs. per 100 gals. of water in 3-5 applications beginning at petal fall and continuing through the growing season, or apply as infestations develop.

**San Jose Scales, Mealybugs, Apple Aphid eggs, European Red Mite eggs, Brown Mite eggs, Apple Aphid eggs**: Mix 1½ lbs. plus 1 gal. of superior type oil or 2 gals. of dormant oil per 100 gals. of water. Apply as a dormant or delayed dormant spray.

**Eye-Spotted Bud Moths, Fruit Tree Leaf Rollers, Mealybugs**: Mix 1½ lbs. per 100 gals. of water. Make 3 to 8 cover spray applications, beginning in the pink stage.

**APPLES and PEARS (14)** (Max dosage 15 lbs. per acre)  
**Codling Moths, Rosy Apple Aphids, Green Apple Aphids, Woolly Apple Aphids, Mites**. Mix 1½ lbs. per 100 gals. of water. Make 3 to 8 cover spray applications beginning with the first cover. Applications should be timed according to insect infestations.

**Apple Maggots**: Mix 1½ lbs. per 100 gals. of water. Make at least 3 cover spray applications when flies are active and laying eggs.

**San Jose Scale Crawlers, Forbess Scale Crawlers**: Mix 1½ lbs. per 100 gals. of water. Apply early in the season when crawlers first appear. If infestation warrants, make a second application 7 to 10 days later.

**NOTE**: Mites will be suppressed if Diazinon 40W is used in the regular cover spray program. Slight russeting may occur on the Golden Delicious variety.

**APRICOTS (10)** (Max dosage 10 lbs. per acre)

**San Jose Scales, Brown Apricot Scales, Walnut Scales, Apricot Mealybugs:** Mix 1½ lbs. plus 2 gals. of dormant oil per 100 gals. of water. Apply as dormant spray.

**Aphids, Brown Mites (Clover Mites), Two-Spotted Spider Mites, Olive Scale Crawlers, San Jose Scale Crawlers:** Mix 1½ lbs. per 100 gals. of water. Apply when aphids, mites and scale crawlers first appear.

**Olive Scale Crawlers:** Mix ¾ lb. plus 1½ gals. of light medium horticultural oil per 100 gals. of water. Apply when scale crawlers are present.

**Apricot Mealybugs:** Mix 1½ lbs. per 100 gals. of water. Apply as a cover spray from petal fall to June.

**BLUEBERRIES (7)**

**Cranberry Fruitworms, Cherry Fruitworms, Blueberry Maggots, Aphids, Thrips, Two-Spotted Mites:** Mix 1½ lbs. per 100 gals. of water. Apply up to 200 gals. of spray per acre, or apply 2½ lbs. per acre in sufficient water for thorough coverage.

**CANEBERRIES: i.e. Blackberries, Boysenberries, Dewberries, Loganberries, Raspberries (7) Leafhoppers, Thrips, Aphids, Two-Spotted Mites, Raspberry Sawflies:** Mix 1½ lbs. per 100 gals. of water and apply up to 200 gals. of spray per acre, or apply 2½ lbs. per acre in sufficient water for thorough coverage.

**Raspberry Fruitworms:** Apply at the above rates when blossom buds separate and repeat application immediately before blossoms open.

**Dryberry Mites:** Mix 2½ lbs. per 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.

**Raspberry Crown Borers (Raspberry Root Borers):** Mix 5 lbs. per 100 to 200 gals. of water and apply 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 (10)** (Max. dosage 10 lbs. per acre)

**Eye-Spotted Bud Moths, Fruit-Tree Leaf Rollers:** Mix 1½ lbs. per 100 gals. of water. Apply in cover sprays as necessary, beginning with petal fall.

**Cherry Fruit Flies:** Mix ¾-1½ lbs. per 100 gals. of water. Make 3 or 4 applications, beginning when adult flies begin to emerge and repeating at 10-day intervals.

**Black Cherry Aphids:** Mix 1½ lbs. per 100 gals. of water. Apply as a cover spray when aphids appear and repeat after 10 days.

**San Jose Scale Crawlers:** Mix 1½ lbs. per 100 gals. of water. Apply during the pre-pink stage or when crawlers first appear.

**Cherry Rust Mites:** Mix ¾ to 1½ lbs. per 100 gals. of water. Apply as a supplemental spray after harvest.

**Brown Apricot Scales, San Jose Scales, Black Scales, Black Cherry Aphid eggs, Brown Mite eggs:** Mix 1½-2 lbs. of Diazinon 40W plus 3 gals. of dormant oil per 100 gals. of water. Apply as a dormant spray. (Max. Dosage 12½ lbs. per acre)

**CRANBERRIES (7)**

**Black Headed Fireworms, (Sparganothis sulfureana):** Apply 5 lbs. in 400 gals. of water per acre.

**Cranberry Fruitworms:** Apply 7½ lbs. in 400 gals. of water per acre.

**FIGS (5)** (Max. Dosage 6½ lbs. per acre)

**Vinegar Flies (Drosophila spp.) Dried Fruit Beetles:** Apply 1½ lbs. per 100 gals. of water.

**FILBERTS**

**Filbert Leaf Rollers, Aphids:** Apply 2½ lbs. in 250-400 gals. of water per acre, as a thorough cover spray.

**CITRUS FRUITS (Grapefruit, Lemons, Limes, Oranges, Tangelos, Tangerines, Citrus Citron, Kumquats and hybrids of these) (21)**

**Citrus Aphids, Cottony-Cushion Scale Crawlers, and Soft Scale Crawlers:** Apply ¾-1½ lbs. per 100 gals. of water (maximum 1000 gals. per acre) as a thorough cover spray when aphids and crawler stages of scale insects first appear.

**Fruit Tree Leaf Rollers:** Mix  $\frac{3}{4}$ -1 $\frac{1}{4}$  lbs. per 100 gals. of spray (maximum 1000 gals. per acre) when an average of 50% of eggs in egg masses have hatched in the spring.

**Citrus Thrips:** Apply 1 $\frac{1}{2}$  lbs. in 100 gals. of water (maximum 1000 gals. per acre) when thrips first appear.

**Citrus Snow Scales:** Apply 1 $\frac{1}{2}$ -2 $\frac{1}{2}$  lbs. per 100 gals. of water (maximum 1000 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 trunk, limbs, and twigs is essential.

**NOTE:** Do not apply during bloom.

**GRAPES (Max. dosage-2 $\frac{1}{2}$  lbs. per acre)**

**Pacific Spider Mites, Leafhoppers, Grape Berry Moths,**

**Grape Leaf Folders:** Mix 1 $\frac{1}{2}$  lbs. per 100 gals. of water and apply as a thorough cover spray, or apply 2 lbs. per acre in sufficient water for thorough coverage. Do not apply within 18 days of harvest.

**Orosophila spp.** Mix 7 $\frac{1}{2}$  oz. per 100 gals. of water and apply as a thorough cover spray, when insects first appear. Make additional applications at weekly intervals as necessary. Do not apply within 7 days of harvest. If a spreader-sticker is used, do not apply within 18 days of harvest.

**OLIVES (75) (Max. dosage-30 lbs. per acre)**

**Olive Scales:** Mix 1 to 1 $\frac{1}{2}$  lbs. 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 (20) NECTARINES (10) (Max. dosage-10 lbs. per acre)**

**San Jose Scales, Brown Apricot Scales, Walnut Scales, Apricot Mealybugs:** Mix 1 $\frac{1}{2}$  lbs. plus 2 gals. of dormant oil per 100 gals. of water. Apply as a dormant spray.

**Peach Twig Borers, Parlatoria Scales:** Mix 1 $\frac{1}{2}$  lbs. plus 1 gal. of light medium summer horticultural oil per 100 gals. of water. Apply at petal fall.

**Aphids, Brown Mites (Clover Mites), Two-Spotted Spider Mites, Olive Scale Crawlers, San Jose Scale Crawlers:** Mix 1 $\frac{1}{2}$  lbs. per 100 gals. of water. Apply when aphids, mites and scale crawlers first appear.

**Olive Scale Crawlers:** Mix  $\frac{1}{2}$  lb. 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 $\frac{1}{2}$  lbs. 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 $\frac{1}{2}$  lbs. per 100 gals. of water and apply to peaches in May and June.

**White Peach Scale (Peaches only):** As a post-harvest spray apply 2-2 $\frac{1}{2}$  lbs. 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.

**PEARS (14) (Max. dosage-15 lbs. per acre)**

**Pear Leaf Blister Mites, Mealybugs, San Jose Scales, Brown Apricot Scales:** Mix 1 $\frac{1}{2}$  lbs. plus 2 gals. of dormant oil per 100 gals. of water. Apply as a dormant spray.

**Tentiform Leaf Miners, Mealybugs:** Mix 1 $\frac{1}{2}$  lbs. per 100 gals. of water. Apply in 3 cover sprays, beginning in April.

**NOTE:** Refer also to Apples and Pears above.

**PECANS**

**Aphids, Mites, Pecan Nut Casebearers, Walnut Caterpillars:** Apply 2 $\frac{1}{2}$ -7 $\frac{1}{2}$  lbs. per acre as a foliage spray. Do not apply after husks crack.

**PINEAPPLE**

**Pineapple Scales:** Apply 12 $\frac{1}{2}$  lbs. plus 2 gals. of light or medium horticultural oil in 500 gals. of water per acre to the vegetative slips on the plant following harvest of the pineapple.

**Pineapple Mealybugs:** Apply 5 lbs. per acre. May be applied on day of harvest. Pineapple forage and refuse

may be fed to livestock 7 days following last application.

**PLUMS and PRUNES (10)** (Max. dosage: 10 lbs. per acre)  
 Peach Twig Borers, Mealy Plum Aphid eggs, San Jose Scales, Paratortoise Scales, Brown Almond Mites. Mix 1½ lbs. plus 2½ gals. of dormant oil per 100 gals. of water. Apply as a dormant spray. For late April or May applications, mix 1½ lbs. plus 1 gal. of light medium summer horticultural oil per 100 gals. of water.  
 Brown Mites (Clover Mites), European Red Mites: Apply 1½ lbs. in 100 gals. of water.  
 Leaf Curl Plum Aphids, Mealy Plum Aphids, Thistle Aphids: Apply ½-1½ lbs. per 100 gals. of water.

#### **STRAWBERRIES (5)**

Aphids, Two-spotted Spider Mites: Apply 1½ lbs. in 100 gals. of water per acre.  
 Cyclamen Mites: Apply 2½ lbs. in 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 2½ lbs. 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 1-1½ lbs. per 100 gals. of water. Apply 200 gals. spray per acre when blossoms show color.

#### **WALNUTS**

Aphids, Mites: Apply 2½ lbs. per acre as a foliage spray.  
 Codling Moths, Scale Crawlers, Walnut Caterpillars: Apply 7½ lbs. per acre.  
 NOTE: Do not apply after the husks open

### Vegetable Foliar Insects

Diazinon 40W should always be applied as a spray in sufficient water to assure thorough coverage of the foliage. In California use a minimum of 5 gals. water per acre for aerial application and a minimum of 20 gals. water per acre for ground application.

*Pole Beans*  
**BEANS (Pole Beans, Snap Beans, Lima Beans) (7)**  
 Black Bean Aphids, Mexican Bean Beetles, Leaf Miners.  
 Apply 1½ lbs. per acre

Cucumber Beetles: Apply 10-15 oz. in 100 gals. of water per acre.

NOTE: 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 (7)**

Dipterous Leaf Miners, Leafhoppers, Mites. Apply 1½ lbs. 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.

#### **BROCCOLI, CAULIFLOWER (5) and CABBAGE (7)**

Aphids, Diamondback Moths, Imported Cabbageworms, Dipterous Leaf Miners: Apply 1½ lbs. per acre. Applications at 7-10 day intervals will usually be required.

#### **BRUSSELS SPROUTS (7)**

Aphids, Diamondback Moths, Imported Cabbageworms. Apply 1½ lbs. per acre. Applications at 7-10 day intervals will usually be required.

#### **CARROTS (10)**

Aphids. Apply 1½ lbs. per acre

#### **CELERY (10)**

Aphids, Flea Beetles: Apply 1½ lbs. in 100 gals. of water per acre

**Dipterous Leaf Miners:** Apply  $\frac{1}{2}$  to 1 $\frac{1}{2}$  lbs. per acre in sufficient water to achieve thorough coverage when infestations first appear. Repeat as necessary.

**NOTE:** Plants should be market trimmed (tops removed) before being shipped or used. Tops should not be used for feed or food.

**COLLARDS, KALE, TURNIP TOPS (10) and SWISS CHARD (12)**

**Aphids, Imported Cabbageworms, Diamondback Moths, Harlequin Cabbage Bugs, Corn Earworms:** Apply  $\frac{1}{2}$  to 1 $\frac{1}{2}$  lbs. per acre.

**CUCUMBERS (7)**

**Aphids, Serpentine Leaf Miners, Thrips:** Apply 1 lb per acre.

**LETTUCE and ENDIVE (10)**

**Aphids, Dipterous Leaf Miners:** Apply  $\frac{1}{2}$ -1 $\frac{1}{2}$  lbs. per acre.

**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 $\frac{1}{2}$ -1 $\frac{1}{2}$  lbs. per acre. **Serpentine Leaf Miners, Thrips:** Apply  $\frac{1}{2}$ -1 $\frac{1}{2}$  lbs. per acre.

**NOTE:** Do not apply to melons or winter squash within 3 days, or to summer squash within 7 days of harvest.

**MUSHROOM HOUSES**

**Mushroom Flies (Phorids and Sciarids):** Mix 5-10 lbs. in 50 gals. of water (0.5% to 1.0% 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  $\frac{1}{2}$  lb. in 5 gals. of water and apply with a brush. Do not treat compost.

**ONIONS (10)**

**Onion Thrips:** Apply 1 $\frac{1}{2}$  lbs. per acre.

**PEAS**

**Aphids, Leaf Miners:** Apply 1-1 $\frac{1}{2}$  lbs. 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 (5)**

**Aphids, Serpentine Leaf Miners:** Apply  $\frac{1}{2}$  lb. per acre.

**POTATOES (35)**

**Aphids, Flea Beetles, Colorado Potato Beetles, Dipterous Leaf Miners:** Apply  $\frac{1}{2}$ -1 lb per acre.

**Banded Cucumber Beetles, Leafhoppers, Southern Armyworms:** Apply 1-1 $\frac{1}{2}$  lbs. per acre.

**RADISHES, PARSNIPS and TURNIPS (10)**

**Aphids, Flea Beetles, Dipterous Leaf Miners:** Apply  $\frac{1}{2}$  to 1 $\frac{1}{2}$  lbs. per acre.

**SPINACH (10) and BEETS (14)**

**Aphids, Dipterous Leaf Miners:** Apply  $\frac{1}{2}$  to 1 $\frac{1}{2}$  lbs per acre.

**SQUASH (Summer and Winter) See Melons and Squash above.**

**SWEET CORN**

**Corn Earworms:** Apply 2 $\frac{1}{2}$ -3 lbs. 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 Insects.

**TOMATOES (1)**

**Aphids, Dipterous Leaf Miners:** Apply  $\frac{1}{2}$  lb per acre. To control leaf miners, weekly applications are usually required.

**Banded Cucumber Beetles, Fall Armyworms, Southern Armyworms:** Apply 1 $\frac{1}{2}$  lbs per acre.

**Vinegar Flies (Drosophila spp.):** Apply  $\frac{1}{2}$ -1 lb per acre. Weekly applications are usually required.

**WATERCRESS (Hawaii Only) (5)**

**Cyclamen Mites:** Apply 1 $\frac{1}{2}$  lbs in 100 gals of water per acre. Direct spray to 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.

Diazinon 40W should always be applied as a spray in sufficient water to assure thorough coverage of the soil.

#### CARROT RUST FLIES

**Carrots:** Apply 5 lbs. per acre as a drench to the seed furrow at planting time.

#### CUTWORMS (Surface and Subterranean)

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

Broadcast 5-10 lbs. 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, Carrots, Corn, Lettuce, Peas, Pole Beans, Radishes, Red Beets, Snap Beans, Tomatoes, Turnips**

Broadcast 25 lbs. per acre just prior to planting. Work into soil 4-8 inches immediately. This preplant treatment will also control cutworms (surface and subterranean), mole crickets, root maggots, and wireworms.

#### MOLE CRICKETS

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

Broadcast 20 lbs. per acre when insects are present. Make application to plant beds or fields 1-2 days prior to sowing of seed or transplanting, and work into soil 1-2 inches immediately.

#### ONION MAGGOTS

**Onions:** Furrow Application: Apply 20 lbs. per acre in sufficient water to drench the seed furrow at planting time. Broadcast Application: Broadcast 5-10 lbs. per acre just prior to planting. Work into soil 3-4 inches immediately.

#### ROOT MAGGOTS

**Broccoli, Brussels Sprouts, Cabbage, and Cauliflower**  
Broadcast Application: Broadcast 5-7 1/2 lbs. 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 1 1/2 lbs. in 100 gals. of transplant water, when 200 gals. of water are used per acre. (Do not exceed 20 lbs. per acre.) May be applied at the rate of 1/2 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 stress at time of transplanting.

**Radishes:** Mix 5 lbs. in 100 gals. of water. Apply 80-100 gals. per acre (1-1 1/2 gals. per 1,000 linear feet of row) in the seed furrow at planting time.

#### WIREWORMS

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

Broadcast 7-10 lbs. per acre prior to planting, and work into soil 4 inches immediately.

**Potatoes:** Broadcast 7-15 lbs. per acre prior to planting. Immediately disc or harrow into soil 4 inches.



**COTTON**

**Spider Mites, Aphids, Leafhoppers, Lygus Bugs, Cotton Leafworms, Cotton Leaf Perforators:** Apply 1 1/2 lbs. per acre in 50 gals. of water per acre. Repeat as infestation warrants.

**NOTE:** Do not apply within 14 days of harvest. Do not apply to treated cotton plants or feed to waste to live.

**COWPEAS**

**Cutworms (Surface and Subterranean):** Broadcast 5-10 lbs. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 in. for subterranean cutworms.

**HOPS**

**Aphids, Mites:** Apply 2 lbs. per acre. Do not apply within 14 days of harvest.

**LESPEDEZA**

**Cutworms (Surface and Subterranean):** Broadcast 5-10 lbs. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 in. for subterranean cutworms.

**PEANUTS (21)**

**Cutworms:** Apply 5 lbs. per acre in a 12 inch band over the row. Use sufficient water to achieve thorough coverage. Begin application when small larvae appear. Two or three additional applications at three-week intervals may be necessary.

**NOTE:** 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 (7)**

**Sorghum Midge:** Apply 1 1/4 lbs. per acre when 90% of the heads have emerged from the boot. Repeat application within 4 days. Crop may be fed to livestock immediately following treatment.

**Cutworms (Surface and Subterranean):** Broadcast 5-10 lbs. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 in. for subterranean cutworms.

**SOYBEANS**

**Cutworms (Surface and Subterranean):** Broadcast 5-10 lbs. per acre just prior to planting. Work into the soil immediately, 2-3 inches for surface cutworms, 3-6 in. for subterranean cutworms.

**SUGAR BEETS**

**Leafhoppers, Dipterous Leaf Miners, Aphids:** Apply 1 1/4 lbs. per acre.

**Grasshoppers:** Apply 1 1/4 lbs. per acre.

**Wireworms:** Broadcast 7 1/2-10 lbs. per acre just prior to planting, and work into soil 4-8 inches immediately. Tops may be fed to beef and dairy animals.

**SUGARCANE**

**Aphids:** Apply 1 1/2 lbs. per acre.

**NOTE:** Allow 1 day between last application and harvest. Bagasse and forage may be fed to livestock.

**Wireworms:** Apply 10 lbs. per acre in a 12 inch band centered over the furrow in sufficient water to obtain thorough coverage. Make application directly to seed pieces in open furrow at covering time.

**TOBACCO**

**Aphids, Flea Beetles:** Apply 1 1/4 lbs. per acre. Do not apply within 3 days of harvest.

**Cutworms:** Broadcast 5-10 lbs. per acre before transplanting and work immediately into the soil, 4 inches.

**Green June Beetle Larvae:** Mix 1 lb. in 100 gals. of water and apply as a trench (100 gals. per 100 sq. yd.) to uprooted areas of plant beds with sprinkling can.

**Mole Crickets:** Broadcast 2 lbs. per acre, when insects are present. Make application 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 Application:** Broadcast 3 1/2 lbs. per acre, 3-4 weeks before transplanting. Work into soil 2 inches immediately. **Transplant Water Application:** Mix 2 3/4 oz. in 50 gals. of transplant water.

**Wireworms: Broadcast Application:** Broadcast 5-10 lbs. per acre, 1-4 weeks before transplanting. Work into soil 6-9 inches immediately. **Transplant Water Application:** Mix 2 3/4 oz. in 50 gals. transplant water.

**BERMUDAGRASS**

**Thrips, Whiteflies, Grasshoppers:** Apply 1½ lbs per acre

**RANGELAND, PASTURE, GRASS FORAGE, DITCH BANKS, ROADSIDES, WASTELAND, NONCROP AREAS, AND BARRIER STRIPS**

**Grasshoppers:** Apply 1-1½ lbs per acre in sufficient water or oil to obtain thorough coverage when insects first appear, preferably in the nymphal stage.

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. Do not repeat application for 30 days.

**Ornamental Insects**

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

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, Obdurate Root Weevils, Omnivorous Leaf Tiers, Privet Mites, Scale Crawlers (Cottony Cushion Lecanium, Pine Needle, San Jose, Soft Scale), Thrips, Two Spotted Mites, Webworms, Whiteflies	1 oz. 1½ lbs
Apple and Thorn Skeletonizers, Coneaster Webworms, Fall Webworms, Hemlock Chermes, Oak Looper, Oblique Banded Leaf Rollers, Pear Stag, Tent Caterpillars	2 oz. 3 lbs

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

**Mimosa Webworms:** Mix 1 oz. in 3 gals. of water or 1½ lbs. 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.

To control insects listed below, apply recommended rates for 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.

Lawn Chinch Bugs	2 1/4 oz. or 4 7/8 oz.	25* gals	Use higher rate for longer residual control and in lawns of dense growth, such as St. Augustine lawns.
Ants, Army worms, Clover Mites, Collembola (Springtails), Crickets, Cutworms, Digger Wasps, Earwigs, Frit Flies, Lawn Billbugs, Sod Webworms (Lawn Moths), Sowbugs,	5 oz.	3 gals	Spot spray ant hills and wasp ground nest openings. For lawn billbugs, irrigate the lawn thoroughly immediately after treatment.
Brown Dog Ticks, Bermuda Mites, Chiggers, Fleas, Leafhoppers, Ticks,	2 oz.	3 gals.	Do not apply to animals. For brown dog ticks, spray grass and under shrubbery, particularly near house.
Millipedes	10 oz.	3 gals.	
Rhodesgrass Scales	6 1/2 oz.	25* gals	Apply when crawlers first emerge.

\* Alternatively, make applications in 3 gals. of water per 1000 sq. ft. and thoroughly water immediately following application.

**Boxelder Bugs** Spray bugs outside the home with 2 to 3 oz. in 1 gal. of water. At the same time spray thoroughly around foundation, windows, doors, tree trunks, into cracks and other places where the insects hide.

**Residual Sprays:** Mix 2½ lbs. in 25 gallons of water and apply as an overall spray to ceilings and walls of live stock sheds, calf barns, hog barns and other farm buildings. Spray other areas where flies congregate such as garbage dumps and corrals. Repeat applications as fly populations warrant. Longer residual control may be obtained by increasing the rate to 5 lbs. in 25 gallons of water. Applications should be made to the point of runoff. One gallon of spray mixture should cover 350 to 750 sq. ft. depending on surface treated.

**"Spot" Bait Sprays:** Apply 1¼ lbs. plus 2 lbs. sugar in 5 gals. water with knapsack or similar sprayer to areas frequented by flies such as doorways, and around windows. Repeat applications as fly populations warrant.

**Liquid Bait for Sprinkling Can Application:** Mix 2½ oz. plus 1 lb. sugar in 5 gals. of water. Sprinkle tightly over floor in areas frequented by flies. Burlap bags may be laid out in those areas and sprinkled with this mixture. Apply every 1-2 days as necessary.

**MAGGOT CONTROL:** For control of fly maggots use 2½ oz. in 5 gallons of water per 500 sq. ft. of fly breeding area such as garbage dumps and manure piles. Apply as a coarse spray or with a sprinkling can. Repeated applications will be needed as additional garbage is added. Apply to poultry droppings only if poultry is on wire.

**NOTE:** Do not apply in poultry houses, dairy barns, or milk rooms. Remove animals from buildings during spraying and keep them out at least 4 hours. Do not spray animals or contaminate their feed or drinking water. Do not use in dwellings. Do not use in poultry houses except for control of fly maggots in manure where poultry is on wire and cannot come in contact

with the product. Good sanitation and proper disposal of wastes are necessary in any effective fly control program.

**FLY CONTROL IN FOOD PROCESSING PLANTS:** Mix 5 lbs. in 25 gals. water and apply to walls and ceilings before canning or other processing begins. Repeat if necessary when plant is not operating. Cover all equipment and produce to prevent contamination. Spray unloading docks and other outside areas where flies congregate.

**NOTE:** Do not use in edible product areas of food processing plants, restaurants, or other areas where food is commercially prepared or processed. Do not use in serving areas while food is exposed. Good sanitation and proper disposal of wastes are necessary in any effective fly control program.