

10163-133

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ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES REGISTRATION REGISTRATION DIVISION (7C-367) WASHINGTON, DC 20460	EPA REGISTRATION NO. 10163-133	DATE OF ISSUE September 1, 1979
	TERM OF ISSUANCE <i>Until Reregistration</i>	
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION (Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)	NAME OF PESTICIDE PRODUCT Gowan Carbaryl 80 WP	

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Gowan Company  
 P.O. Box 5096  
 P.O. Box 45364

NOTE: Changes in labeling formula differing in substance from the accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an endorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others. This product is conditionally registered in accordance with FIFRA

section 3(c)(1)(A) provided that you:

1. Submit to all data required for registration/reregistration in accordance with FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Add the phrase "EPA Registration No. 10163-133" to your label before you release the product for shipment.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Dennis E. Edwards, Jr.  
 Product Manager (12)  
 Insecticide-Rodenticide Branch  
 Registration Division (H7505C)

Enclosures

 ATTACHMENT IS APPLICABLE

10163-133

Carbaryl (1-naphthyl N-methylcarbamate) . . . . . 80%  
 INERT INGREDIENTS . . . . . 20%  
 Total . . . . . 100%

KEEP OUT OF REACH OF CHILDREN

WARNING--AVIS

PRECAUTION AL USARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

Statement of Practical Treatment

*break for 2 glasses of water and*  
 IF SWALLOWED: Induce vomiting by placing finger on back of throat. Call a physician. Never give anything by mouth to an unconscious or convulsing person.

IF INHALED: Remove victim to fresh air. Contact a physician.

IF ON SKIN: Remove contaminated clothing and wash skin with soap and generous amounts of water. Contact a physician if irritation develops.

IF IN EYES: Immediately flush eyes with plenty of water. Contact a physician if irritation develops.

NOTE TO PHYSICIAN

Carbaryl is a carbamate insecticide, which is a cholinesterase inhibitor. Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible. Gastric lavage may be used if this product has been swallowed. Carbaryl poisoning may occur rapidly after ingestion and prompt removal of stomach contents is indicated. PRECAUTION: To prevent aspiration of petroleum distillates, lay patient on side with head lower than waist.

Specific treatment consists of parenteral atropine sulfate. Caution should be maintained to prevent overatropinization. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, then intramuscularly every 30 to 60 minutes to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within 24 hours.

Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are NOT recommended.

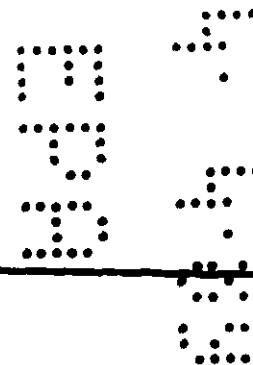
See side panels for additional precautions.

ACCEPTED  
 with COMMENTS  
 to EPA Letter dated

SEP - 1 1983

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

10163-133



Net Weight \_\_\_\_\_ Pounds

Gowan Company

EPA Reg. No. 10163-  
 EPA Est. No. 10163-AZ-1

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5564  
 P. O. Box-5596  
 Yuma, Arizona 85364

85366-5564

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

May be fatal if swallowed. Avoid breathing dust or spray mist. Do not take internally. Avoid contact with eyes, skin or clothing. Wash hands and face before eating. Wash thoroughly after handling. Wear regular long-sleeved work clothing. Change to clean clothing daily.

**ENVIRONMENTAL HAZARDS**

This pesticide is extremely toxic to aquatic and estuarine invertebrates. Do not apply directly to water or wetlands, except under the forest canopy and use on rice. Discharge from rice fields may kill aquatic and estuarine invertebrates. Do not contaminate water by cleaning of equipment or disposal of wastes.

**Bee Hazard**

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Contact your Agricultural Extension Service Office for further information on bee activity in your area.

**DIRECTIONS FOR USE**

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

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Do not enter treated areas without protective clothing until sprays have dried. Protective clothing for carbaryl means regular long-sleeved work clothing of tightly woven fabric, a hat or other suitable headgear, shoes and socks.

Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written and oral warnings must include the following information: **WARNING** - Area treated with carbaryl on (date of application). Do not enter without appropriate protective clothing until sprays have dried. (Use re-entry interval required by state if more restrictive.) In case of accidental exposure, follow instructions under Statement of Practical Treatment section.

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**DIRECTIONS FOR USE, CONTINUED**  
**Storage and Disposal**

DO NOT contaminate water, food or feed by storage or disposal.  
Store in a dry place, ~~in original container.~~  
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.  
CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Chemigation Statement**

This product may be applied through center pivot irrigation systems to alfalfa, corn, and potatoes only. Follow directions in the Crop Use Directions section. Do not apply through any chemigation system other than that specified on this label.

**Application ~~Crop Use~~ Recommendations**

Gowan Carbaryl 80 WP is a dry powder insecticide for dispersion in water and application through hydraulic sprayers, mist blowers, low gallonage ground equipment and aircraft. Directions for water dilution are given under the Crop Use Directions.

DO NOT APPLY WHEN WEATHER CONDITIONS FAVOR DRIFT FROM THE AREA TREATED.

Tolerances established under the Federal Food, Drug and Cosmetic Act permit the sale of crops bearing probable carbaryl residues when carbaryl is used in accordance with label directions. Forage or feed crops may be grazed or harvested for use as feed for dairy or meat animals without resulting residues in meat or milk. Carbaryl may be applied up to and including the day of harvest or grazing for forage crops. READ THIS LABEL. USE IN STRICT ACCORDANCE WITH DIRECTIONS AND CAUTIONS.

The directions on this label are based on tests and field experience relating to (a) effectiveness; (b) possible injury to plant growth; and (c) residues in food, feed and milk. Follow directions for most effective and safest use.

Consult State Agricultural Experiment Stations or State Agricultural Extension Service for additional information as the timing will vary with local conditions.

**Spray Preparation**

ASSURE A UNIFORM SUSPENSION: AGITATE THE MIXTURE BEFORE APPLICATION AND CONTINUOUSLY DURING APPLICATION. DO NOT STORE THE SPRAY MIXTURE.  
Flush entire system with clear water before use. Do not flush with kerosene or diesel oil. For concentrate application, screens in the application system should be 50 mesh or larger and nozzles should be fan type, number 3 or larger. Cone nozzles may be used if applying at least 3 gallons of finished spray per acre. Be sure that mix tank and application system is clean and free of residues, scale or other contamination. Fill mix tank 1/2 to 3/4 full with water and start agitation. Add the wettable powder. When the powder is uniformly suspended, add the remaining water. (Appropriate ranges for water rates are given in the "Dilution Directions.") Flush tank and lines with clean water after spraying.

Prepare only as much spray mixture as can be applied on the day of mixing. Maintain continuous agitation during mixing and application to assure a uniform suspension. Do not store spray mixture for prolonged periods.

Do not plant rotational food and feed crops not registered for carbaryl in carbaryl-treated soil. Do not use reclaimed irrigation water from crops treated with carbaryl on upland crops from which carbaryl residue tolerances are not established.

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**DIRECTIONS FOR USE, CONTINUED**  
Compatibility Cautions

1. Physical compatibility of carbaryl with other pesticides is not fully known. Incompatible mixtures curdle or precipitate and may injure crops or reduce control. Compatibility can be affected by water in your locality, various surfactants and other formulation ingredients. Do not apply if physically incompatible.
2. Do not mix this product with nutrients, adjuvants or other pesticides unless your experience indicates that the mixture is safe and effective. In particular, combinations with more than one other pesticide should be evaluated before application. If uncertain, test a small amount of the mixture on a representative portion of the crop.
3. Unstable under highly alkaline conditions. Not effective if used with alkaline materials such as Bordeaux, lime-sulfur and casein lime spreaders.

Plant Response Precautions

1. To avoid possible injury on tender foliage, do not apply when foliage is wet or when rain or excessive humidity is expected during the next two days.
2. Do not use on Boston ivy, Virginia creeper and maidenhair fern as injury will result. During early season, it may also injure Virginia and sand pines.
3. Observe label instructions for apple thinning and on combinations with certain herbicides or rice and soybeans.

Insect Control

Apply when insects or their damage appear. To maintain control, repeat at 7 to 14 day intervals or as necessary unless different directions are given in the "Crop Use Directions." Where a dosage range is indicated, use the lower rate on young plants and early instars and higher rate on mature plants, advanced instars and adults. This product does not control spider mites.

Dilution Directions

The rate required for 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. Where small volumes of spray are required, 1 Tablespoon of product per gallon of water corresponds to a label rate of 1 pound per acre or 1 pound per 100 gallons.

Dilute Application

Field and Row Crops: Apply specified rate in 20 to 75 gallons of water per acre.

Fruits and Nuts: For dilute sprays apply the specified dosage per 100 gallons of water. Typical spray gallonages range from 200-300 gallons per acre.

Concentrate Application

Field and Row Crops: Use at least 3 gallons of finished spray per acre.

Fruits and Nuts: For concentrate sprays increase the concentration of product in the spray mixture to apply an amount per acre equivalent to that in a dilute spray. Use 30-100 gallons of finished spray per acre.

Aerial Application

Field and Row Crops: Use at least 1 gallon of finished spray per acre.

Fruits and Nuts: Use at least 10-25 gallons of finished spray per acre. Apply an amount of product per acre that is equivalent to that in a dilute spray.

**CROP USE DIRECTIONS**

Agricultural use rates are given in pounds per acre, except as specified for tobacco, dip treatments, and apple thinning. See Dilution Directions for appropriate water rates per acre. Also observe spray preparation and compatibility precautions elsewhere on this label. Application can be made by ground or aircraft. The required preharvest interval is given in days in parenthesis after each crop name.

For nonagricultural uses, including mosquito control, trees and ornamentals, lawn and turf, fire ant control, pest control around buildings, and poultry insect control, see directions under specific heading for dilution directions.

**TREES AND VINES**

**ALMONDS (28):** Fruittree leafroller, Navel orangeworm, Peach twig borer, San Jose Scale: ~~Use 1 1/4 lbs. per 100 gals.~~ Apply in popcorn and petal fall stages and thereafter as needed. Time application to coincide with moth flight peaks. Make late season application at hullsplit for navel orangeworm.

**APPLE THINNING (1):** Apply dilute spray 10 to 25 days after full bloom. Consider factors including variety, tree age, previous crop, pruning, bloom and degree of set and exercise caution to avoid excessive thinning and consequent yield reduction. Contact your County Extension Service or other experts for advice on the use of this product. For easily thinned varieties, including Cortland, Grimes, Jonathan, McIntosh, Orleans, Rome Beauty, Puritan, Red Delicious, Winesap and Yellow Newton, Use 1/3 to 2/3 pounds per 100 gallons. For difficult to thin varieties, including Baldwin, Ben Davis, Duchess, Early McIntosh, Golden Delicious, Lady Apple, Northern Spy, Rhode Island Greening, Steele Red, Turley, Wealthy, Yellow Transparent and York Imperial, Use 2/3 to 1 1/2 pounds per 100 gallons.

**APPLES (1), PEARS (1):** Apple aphid, Apple maggot, Apple mealybug, Apple rust mite, Apple sucker, Bagworms, California pear slug, Codling moth, Eastern tent caterpillar, European apple sawfly, Eyespotted bud moth, Fruittree leafroller, Green fruitworm, Japanese beetle, Lesser appleworm, Lygus bugs, Orange tortrix, Pear leaf blister mite, Pear psylla, Pear rust mite, Periodical cicada, Plum curculio, Redbanded leafroller, Scale insects, Tarnished plant bug, Tentiform leafminers, White apple leafhopper, Woolly apple aphid: Use ~~1 1/4 lbs. per 100 gals.~~  
For psylla control, apply when eggs hatch or young nymphs are present. For scale control, apply when crawlers are present. DO NOT apply until at least 30 days after bloom to avoid undesired thinning.

**APRICOTS:** See peaches.

**BLACKBERRIES (7), RASPBERRIES (7), DEWBERRIES, INCLUDING BOYSENBERRIES AND LOGANBERRIES (7):** European raspberry aphid, Japanese beetle, Leafhoppers, Leafrollers, Omnivorous leafroller, Raspberry sawfly, Rose chafer, Snowy rose tree cricket: ~~Use 1 1/4 lbs. per 100 gals.~~

**BLUEBERRIES (0):** Blueberry maggot, Cherry fruitworm, Cranberry fruitworm, European fruit lecanium, Japanese beetle: Use 1 7/8 lbs. per acre.

**BOYSENBERRIES:** See blackberry cluster.

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CHERRIES: See peaches.

CHESTNUTS (0): Chestnut weevil: Use 2 1/2 to 3 1/4 pounds per acre. DO NOT USE IN CALIFORNIA. Last application should be made prior to shuck split.

CITRUS (5) (INCLUDING GRAPEFRUITS, LEMONS, LIMES, ORANGES, TANGELOS, TANGERINES, CITRUS CITRON, KUMQUATS AND HYBRIDS): Avocado leafroller, California orangedog, Citrus cutworm, Citrus root weevil, Fruittree leafroller, Fullers Rose Beetle, Orange tortrix, Western tussock moth, West Indian sugarcane borer: Use 1 to 1 1/4 pounds per 100 gals. May be mixed with petroleum oils. Use according to oil manufacturer's directions. ~~Do not apply more than 25 lbs. per acre per application. Do not apply less than 1 gallon of dilute spray mixture per acre.~~ commonly used on citrus.

CRANBERRIES (1): Cutworms, Cranberry fireworms, Cranberry fruitworms, Japanese beetle, Leafhoppers, Rose chafer: Use 1 1/2 to 3 1/2 lbs. per acre. ~~MAY KILL FISH AND CRABS. OBSERVE PRECAUTIONS TO PROTECT AQUATIC ORGANISMS. DO NOT APPLY WHERE THESE ARE IMPORTANT RESOURCES.~~

DEWBERRIES: See blackberries.

FILBERTS (0): Filbert aphid, Filbert leafroller, Filbertworm: Use 1 1/4 lbs. per 100 gals. pounds. Apply for leafroller when eggs are hatching.

GRAPES (0): Cutworms, Eight spotted forester, European fruit lecanium, Grape berry moth, Grape leafroller, Grape leafhopper, Japanese beetle, June beetles, Orange tortrix, Omnivorous leafroller, Redbanded leafroller, Saltmarsh caterpillar, Western grapeleaf skeletonizer, Western yellow-striped armyworm: Use 1 1/4 to 2 1/2 pounds per acre.

LOGANBERRIES: See blackberries.

NECTARINES: See peaches.

OLIVES (0): Olive scale: Use 1 to 1 1/4 pounds per acre. For best control, use in combination with summer oil and apply when crawlers are present. Follow oil manufacturer's directions. Do not exceed 2 applications per year. ~~more than 10 lbs. per acre of this product per application.~~

PEACHES (1), APRICOTS (3), NECTARINES (3): Apple pendentis, Codling moth, Cucumber beetles, European earwig, Fruittree leafroller, Japanese beetle, June beetles, Lesser peachtree borer, Olive scale, Orange tortrix, Oriental fruit moth, Peach twig borer, Periodical cicada, Plum curculio, Redbanded leafroller, Scale insects, Tarnished plant bug, Tussock moth, Variegated leafroller: Use 1 1/2 lbs. per 100 gals. For best scale control, apply when crawlers are present. ~~more than 7 1/2 lbs. per acre per application to apricots.~~

PEARS: See apples.

PECANS (0): Black margined aphid, Fall webworm, Hickory shuckworm, Lesser webworm, Pecan leaf phylloxera, Pecan nut casebearer, Pecan spittlebug, Pecan stem phylloxera, Pecan weevil, Twig girdler, Walnut caterpillar: Use 1 1/2 to 2 lbs. per 100 gals. ~~more than 10 lbs. per acre per application.~~

PISTACHIOS (1): Navel orangeworm: Use 2 1/2 to 3 lbs. per 100 gals. ~~more than 10 lbs. per acre per application.~~

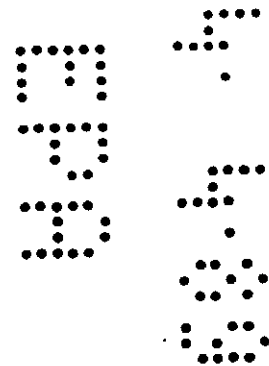
PLUMS: See prunes.

**PRUNES (1), PLUMS (1), CHERRIES (1):** Black cherry aphid, Brown soft scale, Cherry fruitworm, Cherry maggot, Codling moth, Eastern tent caterpillar, European earwig, Eyespotted bid moth, Forbes scale, Fruittree leafroller, Green fruitworm, Japanese beetle, Lesser peach tree borer, Mealy plum aphid, Orange tortrix, Peach twig borer, Plum curculio, Prune leafhopper, Redbanded leafroller, Rose chafer, Scale insects, Tussock moth, Variegated leafroller: Use 1 to 1 1/4 lbs. per 100 gallons. Do not apply more than 7 1/2 lbs. per acre per application.

**RASPBERRIES:** See blackberry cluster.

**STRAWBERRIES (1):** Flea beetles, Meadow spittlebug, Omnivorous leaflier, Strawberry leafroller, Strawberry weevil: Use 1 1/2 to 2 1/2 lbs. per acre Do not use on Early Dawn and Sunrise varieties on the Delmarva Peninsula, as injury may occur.

**WALNUTS (0):** Calico scale, Codling moth, European fruit lecanium, Filbertworm, Fruittree leafroller, Frosted scale: Use 2 1/2 lbs. per 100 gals. Apply 1000 gallons per acre for mature trees. For European earwig control use 2 1/2 lbs. per 100 gallons and spray tree trunks to point of runoff.



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FIELD AND ROW CROPS

ALL FIELD AND ROW CROPS (See specific crop for preharvest interval):  
GRASSHOPPERS: Use 2/3 to 1 1/2 pounds for nymphs on small plants or sparse vegetation on wasteland, ditch banks, or borders. Use 1 1/2 to 1 7/8 pounds for adult grasshoppers on applications to dense vegetation.

ALFALFA (17), CLOVER (0): Blister beetles, Mexican bean beetles: 2/3 to 1 1/2 pounds. Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar: Use 1 1/2 pounds. Alfalfa weevil larvae, Armyworm, Cloverhead weevil, Corn earworm, Cutworms, Egyptian alfalfa weevil larvae, Essex skipper, European alfalfa beetle, Fall armyworm, Lygus bugs, Webworms, Yellowstriped armyworm: Use 1 1/2 to 1 7/8 pounds. Use higher rates east of the Rocky Mountains. For alfalfa weevil larvae, if pretreatment damage is extensive, cut alfalfa and treat the stubble. TEXAS ONLY: Cloverhead weevil: Use 2 pounds.  
Application can be made to alfalfa through center pivot irrigation system. See directions at end of FIELD AND ROW CROP section.

ASPARAGUS (1): Asparagus beetle: Use 1 1/2 to 2 1/2 pounds.  
Asparagus beetle, ~~Aspach~~ cicada: Use 2 1/2 to 5 pounds in post harvest application only. ~~Do not treat more than once every 2 days for~~  
~~postharvest application.~~

BEANS (0, except 3 for cowpeas) (INCLUDING DRY BEANS, GREEN BEANS, LIMA BEANS, NAVY BEANS, SNAP BEANS, SOUTHERN PEAS, CROWDER PEAS, COWPEAS, BLACKEYED PEAS): Blister beetle, Mexican bean beetle: Use 2/3 to 1 1/2 pounds. Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Flea beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar, Western bean cutworm: Use 1 1/2 pound. Armyworm, Corn earworm, Cutworms, European corn borer, Fall armyworm, Stink bugs, Tarnished plant bug, Webworms: Use 1 1/2 to 1 7/8 pounds. Cowpea curculio: Use 2 1/2 pounds. CALIFORNIA ONLY--Corn earworm, Limabean pod borer, Lygus bugs, Stink bugs: Use 2 1/2 pounds.

BROCCOLI: See cabbage.

BRUSSELS SPROUTS: See cabbage.

CABBAGE (3), BROCCOLI (3), BRUSSELS SPROUTS (3), CAULIFLOWER (3), KOHLRABI (3): Flea beetles, Harlequin bug: Use 2/3 to 1 1/2 pounds. Armyworm, Imported Cabbageworm, Corn Earworm: Use 1 1/2 to 2 1/2 pounds.

CARROTS (0), CELERY (14), PARSLEY (14), PARSNIPS (3): Flea beetles, Leafhoppers: Use 2/3 to 1 1/2 pounds. Aster leafhopper, Lygus bugs: Use 1 1/2 to 1 7/8 pounds. Armyworm, Corn earworm, Tarnished plant bug, stink bugs: Use 1 1/2 to 2 1/2 pounds. ~~For information on application rates for these crops, see the following pages:~~

CAULIFLOWER: See cabbage.

CELERY: See carrots.



CHINESE CABBAGE (14), COLLARDS (14), HANOVER SALAD (14), HORSERADISH (3), KALE (14), MUSTARD GREENS (14), RADISHES (3), RUTABAGAS (3), AND TURNIPS (3--roots; 14--tops): Flea beetles, Harlequin bug, Leafhoppers: Use 2/3 to 1 1/2 pounds. Aster leafhopper: Use 1 1/2 to 1 7/8 pounds. Armyworm, Imported cabbageworm, Corn earworm, Tarnished plant bug: Use 1 1/2 to 2 1/2 pounds.

CLOVER: See alfalfa.

COLLARDS: See Chinese cabbage.

CORN (0) (Field, Sweet, and Pop): Corn earworm, Corn rootworm adults, European corn borer, Fall armyworm, Flea beetles, Japanese beetle, Leafhoppers, Southwestern corn borer: Use 1 1/2 to 2 1/2 pounds. For larvae in whorl (budworm damage) and foliage feeders, apply to entire plant. Western bean cutworm: Use 2 1/2 pounds. Treat between 90% and 100% tassel emergence. Cutworms: Use 2 1/2 to 8 pounds. Spray in a 12 inch band over row. OBSERVE BEE CAUTION ON FRONT LABEL. APPLICATION DURING POLLEN SHED WILL REDUCE BEE POPULATION. Application can be made to corn through center pivot irrigation system. See directions at end of FIELD AND ROW CROP section.

COTTON (7): Cotton fleahopper, Cotton leafworm, Flea beetle, Striped blister beetle: Use 2/3 to 1 1/2 pounds. Boll weevil, Bollworms, Cotton leafperforator, Fall armyworm, Leafrollers, Leafhoppers, Plant bugs, Saltmarsh caterpillar, Stink bugs: Use 1 1/2 to 2 1/2 pounds. Pink bollworm: Use 1 7/8 to 3 1/8 pounds.

CUCUMBER (0), MELONS (0), PUMPKINS (0), SQUASH (0): Cucumber beetles\*, Flea beetles\*, Leafhoppers\*, Melonworm, Pickleworm, Squash bugs\*: Use 2/3 to 1 1/2 pounds. (\*Use higher rates for these pests.)

DANDELION (14), ENDIVE (ESCAROLE) (14), LETTUCE (3-head lettuce; 14-leaf lettuce), SALSIFY (3-roots; 14-tops): Flea beetles, Harlequin bug, Leafhoppers: Use 2/3 to 1 1/2 pound. Aster leafhopper, Lygus bugs, Spittlebugs: Use 1 1/2 to 1 7/8 pounds. Armyworm, Corn earworm, Fall armyworm, Imported cabbageworm, Stink bugs, Tarnished plant bug: Use 1 1/2 to 2 1/2 pounds.

EGGPLANT: See potato.

ENDIVE: See dandelion.

~~...~~ FORAGE GRASS PASTURE Armyworm, Black grass bugs, Chinch bugs, Essex skipper, Range caterpillars, Thrips: Use 1 1/2 to 1 7/8 pounds. \*Write grubs: Use 1 7/8 to 2 1/2 pounds.

GARDEN BEET (3-roots, 14-tops), SPINACH (14), SWISS CHARD (14): Flea beetles, Harlequin bug, Leafhoppers: Use 2/3 to 1 1/2 pounds. Aster leafhopper: Use 1 1/2 to 1 7/8 pounds. Armyworm, Corn earworm, Tarnished plant bug, Stinkbug: Use 1 1/2 to 2 1/2 pounds.

HANOVER SALAD: See Chinese cabbage.

HORSERADISH: See Chinese cabbage.

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**KALE:** See Chinese cabbage.

**KOHLRABI:** See cabbage.

**LETTUCE:** See dandelion.

**MELONS:** See cucumber.

**MUSTARD GREENS:** See Chinese cabbage.

**OKRA (0):** Corn earworm, Stink bugs: Use 1 1/2 to 2 1/2 pounds.

**PARSLEY:** See carrots.

**PARSNIPS:** See carrots.

**PASTURE:** See forage.

**PEANUTS (0):** Blister beetles, Mexican bean beetle: Use 2/3 to 1 1/2 pounds. Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetles, Leafhoppers, Threecornered alfalfa hopper, Thrips, Velvetbean caterpillar: Use 1 1/2 pounds. Armyworm, Corn earworm, Stink bugs, Webworms: Use 1 1/2 to 1 7/8 pounds. Whitefringed beetle adults, Cutworms: Use 2 1/2 pounds. To avoid possible injury to tender foliage, do not apply when foliage is wet or rain or excessive humidity is expected during the next two days.

**PEAS (3):** Alfalfa caterpillar\*, Armyworm, Cutworms\*, Colorado potato beetle\*, Leafhoppers, Pea leaf weevil\*: Use 1 1/2 to 1 7/8 pounds. (\*Use higher rate for these pests.)

**PEPPERS:** See potatoes.

**POTATO (0), TOMATO (0), EGGPLANT (0), PEPPER (0):** Flea beetles, Leafhoppers: Use 2/3 to 1 1/2 pounds. Colorado potato beetle, Cutworms, European corn borer, Fall Armyworm, Tomato fruitworm, Tomato hornworm, Tarnished plant bug, Stink bugs: Use 1 1/2 to 2 1/2 pounds. Use higher rate for cutworms. Application can be made to potatoes through center pivot irrigation system. See directions at end of FIELD AND ROW CROPS section.

**PUMPKINS:** See cucumber.

**RADISHES:** See Chinese cabbage.

**RICE (14):** MISSISSIPPI DELTA AREA AND TEXAS: Armyworm, Chinch bugs, Stink bugs: Use 1 1/2 to 1 7/8 pounds. CALIFORNIA ONLY: Tadpole shrimp: Use 2 1/2 pounds applied to water when pest first appears. Armyworm, Leafhoppers: Use 2 1/2 pounds. SEE ENVIRONMENTAL HAZARDS SECTION ON MAIN LABEL FOR PRECAUTIONS REGARDING AQUATIC APPLICATION. DO NOT APPLY PROPANIL HERBICIDES WITHIN 15 DAYS BEFORE OR AFTER APPLICATION, OR CROP INJURY WILL RESULT.

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**RUTABAGAS:** See Chinese cabbage.

**SALSIFY:** See dandelion.

**SORGHUM (21--grain; 0--forage) (INCLUDING MILO, GRAIN SORGHUM, SWEET SORGHUM AND HYBRIDS):** Armyworm, Corn earworm, Stink bugs, Webworms: Use 1½ to 2½ pounds. Sorghum midge: Use 1 7/8 pounds, applied when about 1/4 of heads have emerged and are in bloom. Repeat application 3 to 5 days later if adults are still active. A third application may be necessary. Cutworms: Use 2½ pounds. Direct spray into forming heads.

**SOYBEANS (0):** Bean leaf beetle, Blister beetles, Cucumber beetles, Grape colaspis, Green cloverworm, Mexican bean beetle, Velvetbean caterpillar: Use 2/3 to 1½ pounds. Corn earworm: Use from 2/3 to 1 7/8 pounds. Vary rate depending on degree of infestation. Alfalfa caterpillar, Japanese beetle, Leafhoppers, Threecornered alfalfa hopper: Use 1½ pound. Armyworm, Cutworms, Fall armyworm, Stink bug, Webworms: Use 1½ to 1 7/8 pounds. Thistle caterpillar, Saltmarsh caterpillar, Yellowstriped armyworm: Use 2½ to 3 pounds.

**DO NOT APPLY CARBARYL COMBINED WITH 2,4-DB HERBICIDES TO SOYBEANS, OR CROP INJURY WILL RESULT.**

**SPINACH:** See Garden beets.

**SQUASH:** See cucumbers.

**SWISS CHARD:** See Garden beets.

**SUGAR BEETS (14):** Armyworm, Cutworms, Fleabeetles, Leafhoppers, Webworms: Use 1½ to 1 7/8 pounds. Use higher rate for cutworms.

**SUNFLOWER (60):** Armyworms, Cutworms: Use 1 7/8 to 2½ pounds. Stem weevil, Sunflower beetle: Use 1½ to 2½ pounds. Do not graze treated crops.

**SWEET POTATOES (0):** Corn earworm, Cucumber beetles, Flea beetles, Sweet potato hornworm, Sweet potato weevil, Tortoise beetles: Use 1½ to 2½ pounds. Use lower rate for young plants. EXCEPT CALIFORNIA: (PREPLANT DIP) Sweet potato weevil: Use 9 Tablespoons per gallon. Dip sweet potato cuttings in this suspension just before planting.

**TOBACCO (3):** IN PLANT BEDS--Tobacco flea beetle: Use 2½ Tablespoons per gallon or 2½ pounds per 100 gallons. Apply 6 gallons per 100 square yards. Green June beetle grubs: Use 2/3 pound per 100 gallons of water. Apply to areas uprooted by larvae by sprinkling 50 to 100 gallons per 100 square yards. May be applied before or after seeding.

IN FIELDS--Budworms, Fall armyworm, Flea beetles, Japanese beetles, June beetles, Hornworms: Use 1½ to 2½ pounds per acre. Avoid excessive application to prevent crop injury. Also, avoid excessive application to bud of plant.

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**TOMATO:** See potato.

**TURNIPS:** See Chinese cabbage.

**WHEAT (0--forage; 21--grain) EXCEPT CALIFORNIA:** Cereal leaf beetle: Use 1 1/2 pounds. Armyworm: Use 1 1/2 to 1 7/8 pounds.

**DIRECTIONS FOR APPLICATION THROUGH CENTER-PIVOT IRRIGATION SYSTEMS:**

Application of this product through sprinkler irrigation systems is permitted for potatoes, corn, and alfalfa. Directions, including rates and preharvest intervals, are given in the crop use directions above. Specific directions which must be followed for application by chemigation system are given here.

**General Precautions**

Apply this product only through center pivot irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues on the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Precautions Required for Sprinkler Chemigation**

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

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The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond area intended for treatment.

Additional Precautions required for Chemigation systems connected to public water systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 15 individuals at least 60 days out of the year.

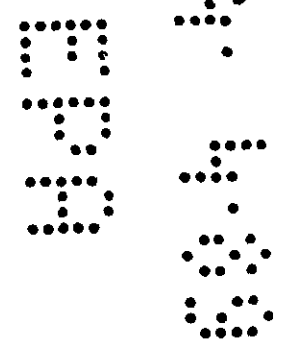
Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

Further directions for Chemigation systems

Fill mix tank half to three-quarters full of water. Begin agitation. Add wettable powder and maintain agitation. Once powder is suspended, add water to fill tank. Maintain agitation until application is complete. The desired rate per acre may be suspended in less than five gallons of water, then injected into the irrigation line.

Uniform application is essential. Equipment must be calibrated to ensure steady flow. The sprinkler system must follow a pattern which will not over expose or under expose any part of the crop.

Begin carbaryl application in order to complete application when irrigation is completed. Do not irrigate again for at least two days to avoid washing-off the product.



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SHADE TREES AND ORNAMENTALS

HERBACEOUS ANNUAL, BIENNIAL AND PERENNIAL PLANTS (SUCH AS CARNATION, CHRYSANTHEMUM, GLADIOLI, AND ZINNIA); SHRUBS, TREES AND WOODY PLANTS (SUCH AS ARBORVITAE, AZALEA, BIRCH, DOGWOOD, ELM, HYDRANGEA, JUNIPER, LILAC, MAPLE, PINE, OAK, AND ROSE): Apple aphids, Bagworms, Birch leafminer, Blister beetle, Flea beetle, Boxelder bugs, Boxwood leafminer, Cankerworms, Cooley spruce gall aphid, Eastern spruce gall aphid, Elm leaf aphid, Eriophyid mite, Gypsy moth, Japanese beetle, June beetles, Lace bugs, Leafhoppers, Leafrollers, Mealybugs, Mimosa webworm, <sup>^</sup><sub>2</sub> leafminers, Orange tortrix, Periodical Cicada, Plant bugs, Puss caterpillars, Psyllids, Rose aphid, Thorn bugs, Thrips, Willow leaf beetles: Use 1 1/2 pounds per 100 gallons (1 1/2 Tablespoons per gallon) in dilute application, or the equivalent per acre rate as a concentrate application. DO NOT USE ON BOSTON IVY, VIRGINIA CREEPER OR MAIDENHAIR FERN, AS INJURY WILL RESULT.

LAWN AND TURF

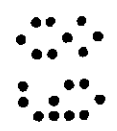
Ants, Bluegrass billbug, Chinch bugs, Cutworms, Earwigs, European chafer, Fall armyworm, Fleas, June beetle, Leafhoppers, Millipedes, Mosquitoes, Sod webworm: Use 1 1/2 pounds in 150 to 200 gallons of water as dilute application for each 5,000 square feet of lawn. (For smaller areas, use 2 1/2 tablespoonfuls per 100 square feet.) FLORIDA: Chinch bug: Use 1 1/2 pounds per 150 to 200 gallons of water. Insure good penetration of the turf.

MOSQUITOES

ON PASTURE AND RANGELANDS, NON-AGRICULTURAL LANDS (SUCH AS YARDS, PARKS, RECREATION AREAS, LOGGING CAMPS, MILITARY POSTS, FORESTED LAND, WASTELAND): Use 2/3 to 1 pound per acre in aerial spray, or 1 1/2 pound per acre in low pressure ground equipment. BACKYARDS AND OTHER LIMITED AREAS: Use 1 1/2 pounds per 100 gallons in hydraulic sprayers or 2 tablespoonfuls per gallon in hand sprayer. Apply sufficient volume for good coverage. For best results, apply in early morning or evening when winds are calm and mosquitoes are active. Repeat at 7 to 10 day intervals. CAUTION: MAY KILL SHRIMP AND CRABS. DO NOT USE IN AREAS WHERE THESE ARE IMPORTANT RESOURCES.

IMPORTED FIRE ANTS

LAWNS, CEMETERIES, RECREATIONAL AREAS, PASTURES, RANGELAND, FORESTED LAND, WASTELAND: Mix 2 pounds per 100 gallons of water. Apply 2 gallons of the mixture over each mound, or at least 1 quart per six inches of mound diameter. Thoroughly an area of 4' diameter around and including mound. Do not disturb mound before treatment. Pour the carbaryl solution from a height of at least 3 feet to provide sufficient force to push into tunnels. Best if applied when temperature is between 65°-80°F. Pressurized spray may disrupt colony and force migration before the carbaryl treatment is effective. ....



**PEST CONTROL IN AND AROUND BUILDINGS  
(LICENSED PEST CONTROL OPERATORS ONLY)**

**BUILDINGS, SUCH AS HOMES, WAREHOUSES, BARNs, MUNICIPAL, COMMERCIAL AND RECREATIONAL AREAS:** Ants, Cockroaches: 25 tablespoonfuls/gallon or 25 pounds per 100 gallons. Brown dog tick, Earwigs, Fleas, Millipedes, Silverfish, Spiders: Use 12½ tablespoonfuls/gallon or 12½ pounds per 100 gallons. Apply as a spray or with a paintbrush to surfaces. Thoroughly treat cracks, baseboards, corners, walls, door sills, window frames, areas occupied by pets, and outside areas where insects congregate. Do not apply as a space spray. Do not use in commercial food areas or commercial food handling establishments. Do not use in serving areas when food is exposed. Do not use if appearance of spray residues is undesirable.

**POULTRY INSECT CONTROL**

**ROOSTS AND BUILDINGS:** (Do not apply with 7 days of slaughter) Bedbugs, Chicken mite, Fleas: Use 5 pounds per 100 gallons of water. Fowl tick: Use 20 pounds per 100 gallons of water. Lesser mealworms: Use 62½ pounds per 100 gallons of water. Spray with backpack sprayer or conventional power equipment. Use 1 to 2 gallons of mix per 1000 square feet of wall, litter, or other surface. Thoroughly treat cracks and crevices. Avoid treating nests, eggs, feed and water with carbaryl. Ventilate while spraying.

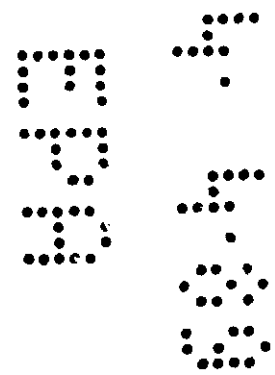
**CHICKENS, DUCKS, GEESE, GAMEBIRDS, PIGEONS, TURKEYS** (Do not apply to poultry or gamebirds within 7 days of slaughter): Chicken mite, Fleas, Lice, Northern fowl mite: To spray directly on birds,

a) Mist with an electric fog machine. Use 6 ounces per gallon of water. Use 1½ gallons of the mixture per 1,000 hens in cages, on litter, or on slatted floors.

or

b) Spray with knapsack or cylinder type compressed air sprayer. Mix 4 ounces in 5 gallons of spray. Use 1 gallon per 100 hens.

By either method, repeat in 4 weeks if necessary. Direct spraying of birds should be used as a supplement for spraying roosts and buildings.



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