10163-60





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

Rebecca A. Lamas Gowan Company P.O. Box 5569 Yuma, AZ 85366-5569

MAY 16 2000

Subject: Gowan Carbaryl 4 EPA Registration No. 10163-60 Amendment dated February 18, 2000 in Response to EPA Letter dated 21 December 1999 for GDE response.

Dear Ms. Lamas:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided that you make the labeling changes indicated below before you release the product for shipment bearing the amended labeling:

1. Under the headings "Personal Protective Equipment" on page 1 and "Agricultural Use Requirements" on page 2 you must add the statement "Chemical resistant headgear for overhead exposure".

2. The PHI statements must be corrected for the following crops:

Forage Grasses Pasture- 14 day PHI Peas- add 3 days for succulents Soybeans- 21 day PHI for dried soybeans Sweet potatoes- 7 day PHI Almond- 14 day PHI Plums, Prunes, and Cherries- all have a 3 day PHI.

Submit two copies of your final printed labeling before you release the product for shipment. A stamped copy of the labeling is enclosed for your records.

Sincerely,

George Tomppens

George Tompkins, Ph.D., Entomologist Insecticide-Rodenticide Branch Registration Division (7505C)

Internet Address (URL) • http://www.epa.gov

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)

GOWAN CARBARYL 4

with COMMENTS In EPA Letter Dated: MAY 16 2000

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ACCEPTED

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 10/63-60

% BY WT

43.7%

56.3%

100.0%

ACTIVE INGREDIENT:

Carbaryl (1-naphthyl methylcarbamate) **INERT INGREDIENTS**

TOTAL

Contains 4 lbs. Carbaryl per gallon. **KEEP OUT OF REACH OF CHILDREN** CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a Physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. IF INHALED: Remove victim to fresh air.

IF IN EYES: Immediately flush eyes with plenty of clear water for at least 15 minutes.

IF ON SKIN: Wash skin with soap and water.

NOTE TO PHYSICIAN: Carbaryl is a moderate, reversible, cholinesterase inhibitor. Atropine is antidotal. DO NOT use 2-PAM, opiates or cholinesterase inhibiting drugs.

FOR EMERGENCY MEDICAL RESPONSE AND HAZARD COMMUNICATIONS ONLY, CALL HAZARD

INFORMATION SERVICES AT 1-(800)-228-5635 ext. 283

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

May be harmful if swallowed. Avoid breathing vapors or spray mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Do not take internally. Wear regular long-sleeved work clothing. Change to clean clothing daily.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

Long-sleeved shirt and long pants

- Waterproof gloves
- Shoes plus socks

Follow manufaacturer's instructions for cleaning/maiantainin PPE. If no such instruction for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum or using the toilet.

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handlding this product. Wash the outside of gloves before removing. As soon as
- possible, wash thoroughly and change into clean dothing.

ENVIRONMENTAL HAZARDS

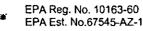
This pesticide is extremely toxic to aquatic and estuarine invertebrates. Do not apply directly to water or wetlands, except for rice uses. Discharge from rice fields may kill aquatic and estuarine invertebrates. Do not contaminate water by cleaning of equipment or disposal of wastes.

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 on a way that will contact workers or others persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to you State or Tribe, consult the agency responsible for pesticide regulation.







Gowan Sempony P O Box 5569 Yuma, AZ 85366 . . .

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AGRICULTURAL USE REQUIREMENTS

Use this product 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 that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. 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

Waterproof gloves

Shoes plus socks

BEE CAUTION

MAY KILL HONEY BEES IN SUBSTANTIAL NUMBERS. This product is highly toxic to bees exposed to direct treatment 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 Cooperative Agricultural Extension Service or Gowan Company for further information.

PHYSICAL OR CHEMICAL HAZARDS

Do not use 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.

Do not enter treated areas without protective clothing until sprays have dried. Because certain states 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 the 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: CAUTION – Area treated with carbaryl on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of accidental exposure, follow instructions under STATEMENT OF PRACTICAL TREATMENT section.

Gowan Carbaryl 4 Insecticide is for dispersion in water and low volume application in hydraulic sprayers, mist blowers, low gallonage ground equipment and aircraft. Tolerances established under the Federal Food, Drug and Cosmetics Act permit the sale of crops bearing probable carbaryl residues when Gowan Carbaryl 4 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. 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 Stations or State Agricultural Extension Service for additional information as the timing will vary with local conditions.

EQUIPMENT CARE

- 1) Flush entire system with clear water to remove other chemicals before using Gowan Carbaryl 4. DO NOT FLUSH WITH KEROSENE OR DIESEL FUEL.
- 2) Use 50 mesh or coarser screens in the entire system.
- 3) 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.
- 4) After spraying, flush tank and lines with clear water.

SPRAY PREPARATION

1) Shake or stir each container of Gowan Carbaryl 4 before use.

2)	First add at least ½ of the required amount of water to spray or mix tank, then provide moderate agitatic.	.) whi	lo.
	adding Gowan Carbaryl 4. Refer to dilution directions for correct amount of water to use.	, , , ,	, , ,
3)	Use rinse water from container in tank mix.		

- 4) For combination sprays, Gowan Carbaryl 4 must be added to at least an equal volume of water and mixed thoroughly before another pesticide is added.
- 5) Do not mix Gowan Carbaryl 4 with kerosene or diesel fuel.
- 6) Calibrate spray equipment to deliver the correct volume. The flow rate of Gowan Carbaryl 4 diluted 1:1 with water is about the same as the flow rate of water.
- 7) Recirculate spray mixtures at frequent intervals after mixing to maintain a uniform suspension.
 - Mix only as much spray as can be applied on day of mixing.

Avoid applications when rain is expected as poor insect control and/or crop damage could result.

IMPORTANT

- Use clean equipment. Flush tank and lines with clear water before and after spraying.
- Screens should be 50 mesh or coarser.
- Provide moderate agitation while adding Gowan Carbaryl 4 to water in spray or mix tank. Recirculate at intervals to
 maintain a uniform suspension. Physical compatibility of Gowan Carbaryl 4 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.

COMPATIBILITY CAUTIONS

- Do not mix Gowan Carbaryl 4 with nutrients or adjuvants or other pesticides unless your experience indicated that the mixture is safe and effective. If uncertain, prepare a small amount of the mixture and test on a representative portion of the crop.
- Unstable under highly alkaline conditions. Not effective if used with alkaline materials such as Bordeaux, limesulfur 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.
- Do not use on Boston ivy, Virginia creeper and maidenhair fem as injurry 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 on 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 give in the CROP USE DIRECTIONS. Where a dosage rate 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.

DILUTIONS 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 water corresponds to a label rate of 1 quart per acre or 1 quart per 100 gallons.

Dilute Application

Field and Row Crops: Apply specified rate in 20 to 75 gallons of water per acre. Fruit and Nuts: Apply specified rate in 200 to 300 gallons of water per acre.

Concentrate Application

Field and Row Crops: Use at least 3 gallons of finished spray per acre. Fruit and Nuts: Use 30 to 100 gallons of finished spray per acre.

Aerial Application

Field and Row Crops: Use at least 1 gallon of finished spray per acre. Fruit and Nuts: Use at least 10 to 25 gallons of finished spray per acre.

PRE-HARVEST INTERVALS

The required days between the last application and harvest are given in () after each crop.

. CROP USE DIRECTIONS FIELD AND ROW CROPS

CROP	PEST	RATE QTS./ACRE	COMMENTS
All Forage, Field and Vegetable Crops in this Section (See specific Field or Vegetable Crop for PHI)	Grasshoppers	1/2 - 1/2	Use ½-1 qt. For nymphs on small plants or sparse vegetation in wasteland, rangeland, ditch banks and borders. Use 1-1 ½ qts. for adult grasshoppers or applications to dense vegetation.
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RATE QTS./ACRE	COMMENTS	ī
1/2-1	Observe plant response precautions.	
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1-11/2	For alfalfa weevil larvae: If pretreatment damage is	┛
	extensive, cut alfalfa and treat the stubble. Use higher rate in areas east of the Rocky Mountains. On dense growth use 25-40 gals, per acre with	I i

Affa Cui clo Lea alfa cat Affa lea we Egg Ess beau Yei Asparagus (1) Asparagus (1) Asp	ette falfa caterpillar, Bean leaf beette, icumber beettes, Green overworm, Japanese beette, aafhoppers, Three-cornered alfa hopper, Thrips, Velvetbean terpillar falfa weevil larvae, Alfalfa blotch afminer, Armyworm, Cloverhead bevil, Corn earworm, Cutworms, gyptian alfalfa weevil larvae, sisex skipper, European alfalfa tette, Fall armyworm, Lygus igs, Stink bugs, Webworms, allowstriped armyworm sparagus beette bache cicada, Asparagus beette ost harvest only) ister beetles, Flea beettes, falfa caterpillar, Bean leaf beette, icumber beetles, Flea beettes, reen cloverworm, Japanese bette, Leafhoppers, Three- ornered alfalfa hopper, Thrips, elvetbean caterpillar falfa looper festem bean cutworm	1 1-1½ 1-2 2-4 ½-1 1 1 1½ 1-2	For alfalfa weevil larvae: If pretreatment damage is extensive, cut alfalfa and treat the stubble. Use higher rate in areas east of the Rocky Mountains. On dense growth use 25-40 gals. per acre with ground equipment to ensure adequate coverage. Treat ferns or brush growth. Do not treat more that once every 3 days. Observe plant response precautions PHI=3 day Succulent PHI=14 days Forage PHI=21 days Dry and hay
Asparagus (1) Asparagus (1) Aspara	overworm, Japanese beetle, aafhoppers, Three-cornered alfa hopper, Thrips, Velvetbean terpillar falfa weevil larvae, Alfalfa blotch afminer, Armyworm, Cloverhead eevil, Corn earworm, Cutworms, gyptian alfalfa weevil larvae, ssex skipper, European alfalfa eetle, Fall armyworm, Lygus egs, Stink bugs, Webworms, ellowstriped armyworm sparagus beetle ost harvest only) ister beetles, Mexican bean eetles falfa caterpillar, Bean leaf beetle, ucumber beetles, Flea beetles, reen cloverworm, Japanese eete, Leafhoppers, Three- ornered alfalfa hopper, Thrips, elvetbean caterpillar falfa looper festem bean cutworm	1-2 2-4 ½-1 1	extensive, cut alfalfa and treat the stubble. Use higher rate in areas east of the Rocky Mountains. On dense growth use 25-40 gals. per acre with ground equipment to ensure adequate coverage. Treat fems or brush growth. Do not treat more that once every 3 days. Observe plant response precautions PHI=3 day Succulent PHI=14 days Forage
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beans, green beans, lima beans, navy beans and snap beans (See text for PHI) Cu	ucumber beetles, Flea beetles, reen cloverworm, Japanese etle, Leafhoppers, Three- ornered alfalfa hopper, Thrips, elvetbean caterpillar falfa looper festem bean cutworm	1½	PHI=14 days Forage
	estem bean cutworm		
Ал Сu Fa	myworm, Corn earworm, utworms, European corn borer, all armyworm, Stink bugs, arnished plant bug, Webworms	1-11/2	
Cc	owpea curculio	2	-
bo	orn earworm, Limabean pod orer, Lygus bugs, Stink bugs	2	CALIFORNIA ONLY
Cabbage (3), Broccoli (3), Brussels Sprouts (3), Cauliflower (3), Kohlrabi (3)	ea beetles, Harlequin bug	1⁄2 - 1	
arr	myworm, Corn earworm, Fall myworm, Imported abbageworm	1-2	
Collards (14), Hanover	ea beetles, Harlequin bug, eafhoppers	<i>‰</i> -1	
salad (14-15), Horseradish (7), Kale (14), Mustard greens (13-14), Radishes (7), Rutabagas (7), Turnips [roots (7), tops-(14-15)]	ster leafhopper	1-1½	
An an ca Ta	rmyworm, Corn earworm, Fall rmyworm, Imported abbageworm, Stink bugs, arnished plant bug	1-2	
	lea beetles, Leafhoppers	1/2 - 1	DO NOT USE ON CELERY IN CALIFORNIA. Tres
15) <u>Sc</u>	ster leafhopper, Lygus bugs, pittlebugs	1-1½	on a 5-7 day schedule
an	rmywworm, Corn earworm, Fall rmyworm, Stink bugs, Tarnished lant bug	1-2	

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Field and Row Crops (continued)
PEST RAT

Blister beetles, Mexican bean

beetle

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CROP

Alfalfa (7), Clovers (7)

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[forage and silage (14) earword [grain and fodder (48)]) Europ [grain and fodder (48)]) Europ (CORN (SWEET) Japan [ears (2), forage (14), and South fodder (48)] Weste Cucumber (3), Melons (3), Weste Pumpkins (3), Squash (3) Cucumber Dandelion (14-15), Endive Flea t [Escarole] (14-15), Lettuce Leafh (head and leaf-14-15), Aster Salsify (7) Spittle Forage Grasses Pasture (0) Armyo Garden Beet [roots-(7) tops Flea t	worm, Melonworm nber beetles, Flea beetles, oppers, Squash bugs beetles, Harlequin bug, oppers leafhopper, Lygus bugs, ebugs worm, Corn earworm, Fall vorm, Imported igeworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	1-2 2 2-6½ 1 1-1½ 1-1½ 1-2 1-1½	OBSERVE BEE CAUTION. For insects attacking silks and ears apply at 1-6 day intervals starting when first silks appear and continuing until silks begin to dry. For larvae in whorl and foliage feeders apply as necessary. For Chinch bugs use high gallonage ground application directed at the base of plants. Optimum timing and good coverage are essential for effective control. Treat when infestation averages 15% and at 90-100% tassel emergence. Treatment after 100% silk emergence will reduce effectiveness. Apply in a 12 inch band, using 6 fluid ounces per 1000 linear feet of row, in at least 15 gals. of water per acre. For broadcast application use 6.5 qts. in a least 20 gals. (ground) or 5 gals. (air) of water per acre. Observe plant response precautions. Treat on a 5-days schedule after heads begin to form. To control thrips in grasses grown for seed, use high
Cucumber(3), Melons (3), Pumpkins (3), Squash (3) Dandelion (14-15), Endive [Escarole] (14-15), Lettuce (head and leaf-14-15), Salsify (7) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Garden Beet [roots-(7) tops Fea 1 Cucur Leafh Army Chinc Garden Beet [roots-(7) tops Fiea 1 Cucur Leafh Army Chinc Chi	worm, Melonworm nber beetles, Flea beetles, oppers, Squash bugs beetles, Harlequin bug, oppers leafhopper, Lygus bugs, bugs worm, Corn earworm, Fall worm, Imported ageworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	2-6½ ½ - 1 1 ½ - 1 1-1½ 1-2	 90-100% tassel emergence. Treatment after 100% silk emergence will reduce effectiveness. Apply in a 12 inch band, using 6 fluid ounces per 1000 linear feet of row, in at least 15 gals. of water per acre. For broadcast application use 6.5 qts. in a least 20 gals. (ground) or 5 gals. (air) of water per acre. Observe plant response precautions. Avoid excessive applications. Observe plant response precautions. Treat on a 5-days schedule after heads begin to form. To control thrips in grasses grown for seed, use high
Cucumber(3), Melons (3), Pumpkins (3), Squash (3) Dandelion (14-15), Endive [Escarole] (14-15), Lettuce (head and leaf-14-15), Salsify (7) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Army Chinc army Rang Nobe White Garden Beet [roots-(7) tops	worm, Melonworm nber beetles, Flea beetles, oppers, Squash bugs beetles, Harlequin bug, oppers leafhopper, Lygus bugs, ebugs worm, Corn earworm, Fall vorm, Imported igeworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	½ - 1 1 ½ - 1 1-1½ 1-2	Apply in a 12 inch band, using 6 fluid ounces per 1000 linear feet of row, in at least 15 gals. of water per acre. For broadcast application use 6.5 qts. in a least 20 gals. (ground) or 5 gals. (air) of water per acre. Observe plant response precautions. Avoid excessive applications. Observe plant response precautions. Treat on a 5- days schedule after heads begin to form.
Pumpkins (3), Squash (3) Dandelion (14-15), Endive Escarole] (14-15), Lettuce head and leaf-14-15), Aster Salsify (7) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Armyy Chinc armyy Rang loope White Garden Beet [roots-(7) tops Fieal	nber beetles, Flea beetles, oppers, Squash bugs beetles, Harlequin bug, oppers leafhopper, Lygus bugs, abugs worm, Corn earworm, Fall worm, Imported igeworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	1 ½ - 1 1-1½ 1-2	Observe plant response precautions. Avoid excessive applications. Observe plant response precautions. Treat on a 5- days schedule after heads begin to form.
Leafh Dandelion (14-15), Endive Escarole] (14-15), Lettuce head and leaf-14-15), Aster Salsify (7) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Forage Grasses Pasture (0) Garden Beet [roots-(7) tops Flea	oppers, Squash bugs beetles, Harlequin bug, oppers leafhopper, Lygus bugs, abugs worm, Corn earworm, Fall worm, Imported ingeworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	1-1½	Observe plant response precautions. Treat on a 5- days schedule after heads begin to form.
Dandelion (14-15), Endive [Escarole] (14-15), Lettuce (head and leaf-14-15), Aster Salsify (7) Spittle Armyy cabba Forage Grasses Pasture (0) Army Rang loope White Garden Beet [roots-(7) tops Fleat	veetles, Harlequin bug, oppers leafhopper, Lygus bugs, worm, Corn earworm, Fall worm, Imported ugeworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	1-1½	days schedule after heads begin to form. To control thrips in grasses grown for seed, use hig
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Armyy armyy cabba Tamis Forage Grasses Pasture (0) Armyy Chino armyy Rang loope White Garden Beet [roots-(7) tops Flea	worm, Corn earworm, Fall worm, Imported ageworm, Stink bugs, shed plant bug worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass		To control thrips in grasses grown for seed, use hig
Forage Grasses Pasture (0) Army Chinc army Rang loope White Garden Beet [roots-(7) tops Flea	worm, Black grass bugs, h bugs, Essex skipper, Fall worm, Range caterpillars, e crane fly, Striped grass	1-1½	To control thrips in grasses grown for seed, use hig
Garden Beet [roots-(7) tops Flea			pressure to improve penetration into boot.
	grubs (green June beetle)	11/2 - 2	
	peetles, Harlequin bug, oppers leafhopper	1 - 1 ¹ / ₂ - 1	Treat on a 5-7 day schedule.
Amy	worm, Corn earworm, Fall worm, Stink bug, Tarnished	1-2	
	earworm, Stink bugs	1-2	Treat on a 5-7 day schedule
Peanuts (14) Bliste	r beettes, Mexican bean	1/2 - 1	Observe plant response precautions.
Cucu clove Leaft worm	a caterpillar, Bean leaf beetle, mber beetles, Green rworm, Japanese beetle, toppers, Rednecked peanut to, Three-cornered alfalfa er, Velvetbean caterpillar	1	
amy	worm, Corn earworm, Fall worm, Stink bugs, Webworms	1-1½	
Cutw		2	
Leaft	ado potato beetle, oppers	1	PHI=21 days, Dry, Hay, and Succulent PHI=14 days Forage
See text for PHI Army	worm	1-1½	
leaf v	a caterpillar, Cutworms, Pea veevil, Pea weevil, wstriped armyworm	1½	
	a looper	21/2	WASHINGTON STATE ONLY

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CROP	Field and Row Crops (cor PEST	RATE QTS/ACRE	COMMENTS
Potato (7), Tornato (3), Eggplant (3), Pepper (3)	Colorado potato beetle, Flea beetles, Leafhoppers	1/2 - 1	-
	European corn borer, Fall armyworm, Lace bugs, Stink bugs, Tarnished plant bug, Tornato fruit worm, Tornato hornworm, tornato pinworm	1-2	
	Cutworms	2	
Rice(14)	Armyworm, Chinch bugs, Fall armyworm, Stink bugs	1 - 1½	CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources. Do not use on rice fields in which crayfish and/or catfish farming are included in the cultural practice. DO NOT APPLY PROPANIL HERBICIDES WITHIN 15 DAYS BEFORE OR AFTER APPLICATION OF THIS PRODUCT OR PLANT INJURY WILL RESULT. MISSISSIPPI DELTA & TEXAS.
	Armyworm, Leafhoppers, Tadpole shrimp	2	CALIFORNIA ONLY. For optimum tadpole shrimp control apply to water when pest first appears.
Soybeans (14 forage and 21 for hay)	Bean leaf beetle, Cucumber beetles, Green cloverworm, Mexican bean beetle, Velvetbean caterpillar	1/2	DO NOT APPLY A COMBINATION OF THIS PRODUCT AND 2,4-DB HERBICIDES TO SOYBEANS AS CROP INJURY MAY RESULT.
	Corn earworm	1/2 - 3/4 1-11/2	For light to moderate populations and smaller instars.
	Blister beetles, Grape colaspis, Mexican bean beetle	<u>½</u> -1	Use the higher rates for heavy populations and larger instars.
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three-comered alfalfa hopper, Thrips, Velvetbean caterpillar	1	
	Armyworm, Cutworms, Fall armyworm, Stink bugs, Webworms	1 - 1½	
	Painted lady (Thistle caterpillar) Saltmarsh caterpillar, Yellow- striped armyworm	2-21/2	
Sugar Beets (28)	Armyworm, Beet leaf beetle, Fall armyworm, Flea beetles, Leaf- hoppers, Webworms	1-1½	
	Cutworms	11/2	
Sunflower (60) (Except California)	Cutworms	1½	
, - <i>,</i>	Armyworm, Fall armyworm	1½-2	
	Stern weevil, Sunflower beetle	1-2	1

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Second Commence

CROP	PEST	RATE	COMMENTS
CKOP	FEOI	QTS./ACRE	COMMENTS
Sweet Potato (0) (Except California)	Com earworm, Cucumber beetles, Flea beetles, Sweet potato hornworm, Tortoise beetles	1-2	Apply as a foliar spray as needed.
	Yellowstriped armyworm	2	
	Sweet potato weevil	1-2	FOLIAR APPLICATION. Full coverage of plants is essential. Use lower rate on young plants and higher rate on mature plants.
Tobacco (0)	Tobacco flea beetle	1 qt./60 gal. and apply 6 gal./ 100 sq. yards	IN PLANT BEDS: To prevent plant injury, avoid excessive applications.
	Green June beette grubs	½ qt./100 gals.	Apply only to areas that larvae have uprooted by sprinkling as a drench with 50-100 gals. per 100 square yards.
	Budworms, Fall armyworm, Flea beetles, Hornworms, Japanese beetle, June beetle, Suckfly	1-2	IN FIELDS: Use lower rate on young plants (up to knee height). Use at least 10 gals. of prepared spray per acre. Begin treatments when worms are small.
		1	If late season applications are necessary, allow three (3) days before pruning or cutting.
Wheat [forage-(7) grain-or straw (21)]	Cereal leaf beetle	1	Do not make more than two applications after grain head emerge from boot. Application is effective
(Except California)	Armyworm, Fall armyworm	1-11/2	against eggs, larvae and adults.

FRUITS AND NUTS

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CROP	PEST	RATE QTS./ACRE	COMMENTS
Almond (28)	Peach twig borer, San Jose scale, Fruittree leafroller	3-8	Apply in "popcorn" or petal fall stages and again when the May brood of the peach twig borer begins to hatch or therafter as needed.
	Navel orangeworm	5	Time early and midseason applications to correspond to moth flight peaks. Make a late season application at initiation of hull split or up to 10% hull split.
Apple (3), Pears (3)	Colding moth, Apple sucker, Wooly apple aphid, Green apple aphid, Pear psylla, Orange tortrix, Scale (San Jose, oyster shell, Lecanium), Lygus bugs, Apple rust mite, Pear leaf blister mite, Pear Rust mite, Apple maggot	3-12	To avoid apple thinning, delay use until at least 30 days after bloom.
Apple Thinning (for easity thinned varieties including) Cortland, Grimes, Jonathan, McIntosh, Orleans, Rome Beauty, Puritan, Red Deficious, Winesap and Yellow Newton		ソーソン qt. per 100 gals.of water	Apply one full coverage dilute spray between 10 and 25 days after full bloom. If factors such as tree age, variety, nutrition, previous crop, pruning, bloom and degree of set favor excessive fruit tree thinning with this product, exercise caution to avoid possible yield reduction.

CROP	PEST	RATE QTSJACRE	COMMENTS
Apple Thinning (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 Transplant and York Imperial		⅓ - 1 qt. per 100 gals. water	Apply one full coverage dilute spray between 10 and 25 days after full bloom. If factors such as tree age, variety, nutrition, previous crop, pruning, bloom and degree of set favor excessive fruit tree thinning with this product, exercise caution to avoid possible yield reduction.
Blackberries (7) Raspberries (7), Dewberries (including boysenberries and loganberries) (7)	European raspberry aphid, Japanese beetle, Leafhoppers, Leafrollers, Rose chafer, Snow tree cricket	1-2	
	Omnivorous leafroller, Raspberry sawfly	2	CALIFORNIA ONLY.
Blueberries (7)	Blueberry maggot, Cherry fruitworm, Cranberry fruitworm, European fruit lecanium, Japanese beetle	1½	Apply 3 weeks before harvest and repeat as necessary
Cranberries (7)	Cutworms, Cranberry fireworms, Cranberry fruitworm, Japanese beetle, Leafhoppers, Rose chafer	1½-3	Apply in late bloom and as needed at 7-10 day intervals. CAUTION: May kill shrimp and crabs. Do not use in area where these are important resources.
Chestnuts (14) (Except California)	Chestnut weevil	1-2	Make 4 applications at weekly intervals beginning in late July. Last application should be made prior to shuck split.
Citrus (grapefruit, lemons, limes, oranges, tangelos, tangerines, citrus citron, kumquats, and hybrids) (5)	Avocado leafroller, California orangedog, Citrus cutworm, Citrus root weevil, Fruittree leafroller, Orange tortrix, Western tussock moth, West Indian sugarcane borer (adults), Peach twig borer, Scale (black, brown, soft, California red, Citricola, citrus snow and yellow)	2%	DO NOT apply less than 10 gals. of dilute spray mixture per mature tree. May be mixed with petroleum oils commonly used on citrus.
Filberts (14)	Filbert aphid, Filbert moth, Filbert leafroller	4-5	Apply when leafroller eggs are hatching. Repeat on first appearance of adult filbert moths and again 3-4 weeks later.
Grapes (7)	European fruit lecanium, Grape leaffolder, grape leafhopper, Western grapeleaf skeletonizer, Western yellow-striped armyworm	1-2	Apply before first brood leaffolder larvae emerge from rolls.
	Cutworms, Eight-spotted forester, Grape berry moth, Japanese beetle, June beetles, Orange tortrix, Omnivorous leafroller, Red- banded leafroller, Saltmarch caterpillar	2	,
Olives (14)	Olive scale	3-8	Do not exceed 2 applications per year. Do not apply more than 15 qts. of this product per application per year.

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FRUITS AND NUTS (continued)

CROP	PEST	RATE QTSJACRE	COMMENTS
Peaches (3), Apricots (3), Nectarines (3)	Apple pandemis, Codling moth, Cucumber beetles, European earwig, Fruittree leafroller, Japanese beetle, June beetles, Lecanium scales, Lesser peachtree borer, Olive scale, Orange tortrix, Oriental fruit moth, Peach twig borer, Periodical cicada, Plum curculio, Red-banded leafroller, San Jose scale, Tamished plant bug, Tussock moth, Variegated leafroller	3-8	For optimum scale control, apply when crawlers are present. Spray limbs and trunk thoroughly, weekly, during moth flight.
Pecans (14)	Black margined aphid, Fall webworm, Hickory shuckworm, Lesser webworm, Pecan leaf phylloxera, Pecan nut casebearer, Pecan spittlebug, Pecan weevil, Twig girdler, Walnut caterpillar	2-6	-
Pistachios (14)	Navel orangeworm	1/2 - 2	Apply at the onset of hullsplit.
Płums (1), Prunes (1), Cherries (1)	Cherry fruit fly, Cherry fruitworm, Fruit tree leafroller, Peach twig borer, Lesser Peach tree borer, Black cherry aphid, Mealy plum aphid, Plum curculio, Prune leafhopper, Red-banded leafroller, Japanese beetle, Scale (Brown, soft, Forbes, San Jose, oyster shell, lecanium), Codling moth, Eastern tent caterpillar, Orange tortrix, Tussock moth	3-6	For optimum scale control, apply when crawlers are present. For lesser peachtree borer control, spray limbs and tree trunks thoroughly, weekly, during moth flight.
Strawberries (7)	Flea beetles, Meadow spittlebug, Omnivorous leaftier (strawberry fruitworm), Strawberry leafroller, Strawberry weevil	1-2	Carbaryl may injure Early Dawn and Sunrise varieties on the Delmarva Peninsula
Walnuts (14)	Codling moth, Scale (Frosted, European fruit lecanium, calico) Filbert worm, Fruitree leafroller	5	For codling moth, apply when average cross sectional diameters of developing nuts are ½ - ¾ inch. Repeat during middle or late June as needed.
	European earwig	3-5	Spray tree trunks to point of run-off.

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POULTRY INSECT CONTROL

POULTRY	INSECT	RATE	SPECIFIC DIRECTIONS
Chickens, Ducks, Geese, Gamebirds, Pigeons and Turkeys	Chicken mite, Fleas, Lice, Northern fowl mite	10 oz./per 1 gal. of spray (electric fog machine)	 For use as a direct mist spray on birds by: 1) Misting with Electric Fog Machine. Mix 10 ounces of this product in 1 gal. of spray. Use 1½ gals. per 1,000 hens in cages, on litter or on slatted floor. Repeat in 4 weeks if necessary.
		OR	OR
		6 oz./per 5 gal. spray (knapsack or cylinder)	 2) Spraying with knapsack or cylinder type compressed air sprayers. Mix 6 ounces of this product in 5 gals. of spray. Use 1 gal. per 100 hens in cages, on litter or on slatted floor. Repeat in 4 weeks if necessary. Direct mist spraying for chicken mite and fleas is a supplement to spraying roosts and buildings for control of these pests. DO NOT apply to poultry and game birds within 7 days of slaughter.
POULTRY QUARTERS	INSECT	RATE	SPECIFIC DIRECTIONS
Roosts and Buildings	Bedbugs, Chicken mite, Fleas, Fowl tick, Lesser mealworms, Lice, Northern fowl mite	4-5 qts./ per 100 gals. water	Spray roost and buildings with conventional power spray or knapsack equipment. For chicken mite, fleas and bedbugs, use 4 qts. of this product per 100 gals. For lesser mealworms, use 5 qts. per 100 gals. Spray 1 or 2 gals. per 1000 square feet of wall, bedding, litter or roost surface. Force spray into cracks. Repeat as needed. Avoid spraying nests, eggs and feeding and watering troughs. Ventilate while spraying. DO NOT treat premises within 7 days of slaughter.

STORAGE AND DISPOSAL

Store in a cool, dry area. Do not store in areas where temperatures frequently exceed 100°. Store any unsued portion of Gowan Carbaryl 4 in the original, labeled container.

DO NOT contaminate water, food or feed by storage or disposal.

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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: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE) CALL CHEMTREC® (800) 424-9300. For other product information contact Gowan Company or see Material Safety Data Sheet.

NOTICE ON CONDITIONS OF SALE

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

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EPA Text Pending: Gowan Carbaryl 4 (to EPA 02-18-00)

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