

10163-158

10/24/2003

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



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Ms. Terre Allen
Registration Specialist
Gowan Co.
P.O. Box 5569
Yuma, AZ 85366-5569

OCT 24 2003

Subject: EPA Reg. No. 10163-158
Gowan Chlorpyrifos 4E
Label Amendment per PDCI
Letter dated Apr 28, 2003

Dear Ms. Allen:

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

1. Add appropriate an "IF INHALED" statements per PRN 2001-1 to the first aid box.
2. Under Directions for Use delete the "Preharvest interval restrictions (PHI)" section. Table 35 of the Chlorpyrifos IRED contains incorrect information with regards to PHI.
3. Under the PPE section, last bullet point, delete the "N" filter because your product contains petroleum distillates.
4. Add "Notify workers of the application by warning them orally and by posting warnings signs at entrances to the treated areas" after the PPE requirements list in the WPS box.
5. Indicate where the Footnotes (1-3) listed on the bottom of the page 5 apply to the text on that page.
6. Add a foot note ("Only in counties of Fresno, Kern, Kings, Madera and Tulare counties in CA") where 12 pt/acre is recommended (1st row, 4th column in the Table on page 5). For all other areas in CA and AZ, the maximum application rate/season is 4 lb ai/A (See Restrictions section under Citrus Fruits on page 4). This California rate applies only to red scale. Therefore revise the application rate for thirps

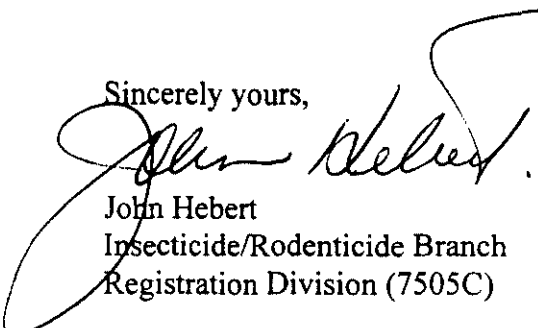
(maximum allowed is 8 pts/acre).

- 7. For Field and Sweet Corn the maximum application rate for a single application is 1 lb ai/A or 2 pints Chlorpyrifos 4E/acre. Revise all application rates to a maximum of 2 pints of Chlorpyrifos 4E/acre. Also, the maximum amount of chlorpyrifos to be applied per acre per season is 3 lbs ai/acre. Therefore, under Restrictions for field corn and sweet corn (including sweet corn in Florida and Georgia) revise the statement as follows: "Do not apply more than a total of 6 pints of Gowan Chlorpyrifos 4E per acre per season."
- 8. Add a 21 day PHI to the Sweet Corn (FL and GA) Restriction section on page 8.
- 9. For sugar beets the maximum amount of chlorpyrifos to be applied per acre per season is 3 lbs ai/A. Therefore, in the Restriction delete the statement, "Do not apply more than a total of 8 pints....on a broadcast basis."
- 10. Delete one of two: "Do not apply more than 2 lb ai/A/season" under Tobacco (page 13).
- 11. Replace "r lbs ai/acre per season" in the Restrictions section under Almond and Walnut Orchard Floors on page 15 with "4 lb ai/acre per season".
- 12. Delete "PHI 21-30 days" under Cauliflower on page 15. Instead add PHI 30 days under the Restriction column for the all the vegetable crops listed in 3 the first three rows in the table. Also add the 3 days REI in the Restriction column for cauliflower.

Note that as the product is currently labeled, individual container sizes cannot exceed 2.5 gallons. Approval of this labeling amendment does not constitute approval of your application for reregistration of this product. Product reregistration is currently pending and future labeling amendments and/or additional data may be required.

Submit two copies of your final printed labeling before you release the product for shipment. A stamped copy is enclosed for your records. If you have any questions, please contact me at (703) 308-6249 or hebert.john@epa.gov.

Sincerely yours,



John Hebert
Insecticide/Rodenticide Branch
Registration Division (7505C)

c: Jane Mitchell, SRRD
Tom Myers, SRRD

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RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

GOWAN CHLORPYRIFOS 4E
Insecticide for Agricultural Use Only

ACTIVE INGREDIENT:

% by Wt.

Chlorpyrifos: [(1S)-2-(3-chloro-5,6-trichloro-2-pyridinyl) phosphorothioate] 40.7%

OTHER INGREDIENTS: 59.3%

TOTAL 100.0%

ACCEPTED
With COMMENTS
In EPA Letter Dated:
OCT 24 2003

Contains 4 pounds of chlorpyrifos per gallon.
*Contains petroleum distillates.

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
10163-158

KEEP OUT OF REACH OF CHILDREN
WARNING - AVISO

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

FIRST AID
ORGANOPHOSPHATE

if swallowed:	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person • Do not give anything by mouth to an unconscious person
if in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
if on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-888-478-0798 for emergency medical treatment information.

NOTE TO PHYSICIAN

Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration. Contains petroleum distillate - vomiting may cause aspiration pneumonia.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

May be fatal if swallowed. Harmful if absorbed through the skin. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, small mammals and birds. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash water or rinsate. 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.

NET CONTENTS _____ GALLONS



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DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying. This product cannot be reformulated or repackaged into other end-use products. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Preharvest interval restrictions:

All crops 7 days except:

- Cauliflower - 21-30 days
- Nut Trees - 14 days
- Citrus Trees - 21 days
- Fruit Trees - 21 days

Aerial applications to peanuts is prohibited

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

All mixers, loaders, other applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical resistant gloves
- Chemical resistant apron when mixing or loading or expose to the concentrate
- Chemical resistant footwear plus socks
- Chemical resistant headgear for overhead exposures
- A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator any N,R, P, or HE filter.

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

ENGINEERING CONTROLS

When handlers use closed systems or closed cab motorized ground application equipment in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI). The REI for each crop is listed in the directions for use associated with each crop.

The REI for all crops except those listed below is 24 hours

- Cauliflower - 3 days
- Citrus Trees - 5 days
- Fruit Trees - 4 days

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

Certified crop advisors or persons entering under their direct supervision under certain circumstances may be exempt from the early reentry requirement pursuant to 40 CFR Part 170.

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 over short-sleeved shirt and short pants
- Chemical resistant gloves made out of any waterproof material
- Chemical resistant footwear plus socks
- Chemical resistant headgear for overhead exposure

Do not enter or allow others to enter until sprays have dried

RECOMMENDATIONS FOR APPLICATION

Gowan Chlorpyrifos 4E is suitable for use in all conventional spray equipment. It may be used in tank mixtures with certain herbicides and/or non-pressure fertilizer solutions as recommended under specific crop use directions. Caution: Fertilizer solutions containing sulfur may inactivate Gowan Chlorpyrifos 4E. For best results in tank mixing, fill the mix tank 1/3 full with water. Start agitation and add wettable powders first, flowables second, and emulsifiable concentrates last. Before actual mixing, test compatibility of the tank mix by mixing products and water proportional for the tank mix in a pint or quart jar. Shake the trial mix and observe whether the material precipitates. If precipitation occurs and will not redisperse, do not use that mix in the tank.

DILUTION DIRECTIONS

The rate required to provide thorough, uniform coverage varies with plant growth at the time of application. The following rates are therefore intended to coverage a broad range of conditions.

Dilute Applications: Field and Row Crops: Apply specified rate in 20-75 gallons of water per acre. Fruit and Nuts: Apply specified rate in 100-800 gallons of water per acre. For citrus, use up to 2,000 gallons of water per acre.

Concentrate Applications: Field and Row Crops: Apply specified rate in not less than 5 gallons of water per acre. Fruits and Nuts: Apply specified rate in 20-100 gallons of water per acre. These applications require special concentrate equipment.

Air Application: Field and Row Crops: Apply specified rate in a minimum of 1 gallon of water per acre. Fruit and Nuts: Apply specified rate in a minimum of 5 gallons of water per acre.

SPRAY DRIFT RESTRICTIONS

Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks, and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

For ground boom applications, do not apply within 25 feet of rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries and commercial fish ponds. Apply with nozzle height no more than 4 feet above the ground or crop canopy and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard muzzles or VMD for spinning atomizer nozzles.

For orchard/vineyard airblast applications, do not apply within 50 feet of rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries and commercial fish ponds. Direct spray above trees/vines and turn off outward pointing nozzles at row ends and outer rows. Apply only when wind speed is 3 - 10 mph at the application site as measured by an anemometer outside of the orchard/vineyard on the upwind side.

For aerial applications, do not apply within 150 feet of rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries and commercial fish ponds. The boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3 - 10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles of VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground of the crop canopy.

For overhead chemigation, do not apply within 25 feet of rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries and commercial fish ponds. Apply only when wind speed is 10 mph or less.

The applicator also must use all other measures necessary to control drift.

CHEMIGATION DIRECTIONS

Gowan Chlorpyrifos 4E may be applied by sprinkler irrigation for the following crop uses: alfalfa, citrus, almond and walnut orchard floors, field corn, mint, sweet corn, cotton, cranberries, sorghum, soybeans and sugar beets.

See the use sections for the individual crops for further application information. Do not apply this product to the above listed crops through any other type of irrigation system.

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

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. 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 applications to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

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 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RZP) or the functional equivalent in the water supply line, upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system

should be discharged into a reservoir tank prior to 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. For non-public water sprinkler

chemigation systems, 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 also 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.

For non-public water sprinkler chemigation systems, 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 the area intended for treatment.

It is recommended that the pesticide supply tank be equipped with a means for continuous agitation either by recirculation or a mechanical agitator. Charge the supply tank with the appropriate amount of water and add the pesticide slowly followed by and sticker-spreaders, insecticides, nutrients, etc. Observe all cautions and limitations on the label of all products used in the mixtures. For fixed position irrigation systems such as center pivot, big gun, etc., the pesticide should be applied towards the end of the irrigation period. Exact timing will depend on the desired pesticide application rate and calibration of the system. For moving systems, the pesticide should be applied continuously. In all cases, thorough coverage of the crop should be achieved.

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USE AND DOSAGE RECOMMENDATIONS

Crop	Insects Controlled	Dosage
ALFALFA	Corn rootworm adults (spotted cucumber beetle), grasshoppers, leafhoppers	½ - 1 pt/acre
	Alfalfa blotch leaf miner, alfalfa caterpillar, alfalfa weevil larvae and adults, armyworms, blue alfalfa aphid, cowpea aphid, cutworms, Egyptian alfalfa weevil larvae and adults, pea aphid, plant bugs, spittlebugs, spotted alfalfa aphid (suppression) (not for use in California)	1-2 pt/acre
	<ul style="list-style-type: none"> • Pre-Plant Application: Apply at a rate of 1 quart per acre as a broadcast incorporated spray prior to planting for suppression of cutworms, wireworms and grubs in alfalfa during the establishment phase. Apply in a total spray volume of 20 to 40 gallons of water per acre. • Foliar Application: Use to control the listed pests at the dosages indicated by application as a broadcast, foliar spray • Note: Use higher rates to control spotted alfalfa aphid in Nevada. • Stubble spray may be applied to control leafhopper in the Northeast. • Do not cut or graze treated alfalfa within 7 days after application of ½ pint of Gowan Chlorpyrifos 4E per acre, within 14 days after application of 1 pint per acre, or within 21 days after application of rates above 1 pint per acre. • Do not make more than 4 applications per year or apply more than once per crop cutting. 	

ASPARAGUS: Use Gowan Chlorpyrifos 4E to control cutworms, asparagus aphids, and asparagus beetles by application at the rate of 2 pints per acre. Mix the specified dosage in sufficient water to ensure thorough coverage of treated plants and apply as a broadcast, foliar spray. For cutworms, it is preferable to apply Gowan Chlorpyrifos 4E when the soil is moist and worms are active on or near the soil surface. Applications may be made during the fern stage for control of asparagus beetles and asparagus aphids when field counts or crop injury indicates that damaging pest populations are developing or present.

Restrictions: Do not make more than 1 preharvest application per season or apply within 1 day of harvest. Do not make more than 2 postharvest applications during the fern stage. Based on available residue data, the use of Gowan Chlorpyrifos 4E on asparagus is limited to the Midwest and Pacific Northwest.

CHERRIES: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days unless PPE required for early entry is worn. Use Gowan Chlorpyrifos 4E for the control of lesser peach tree borer, greater peach tree borer, and American plum borer by application as a trunk spray. Mix 1 ½ to 3 quarts of Gowan Chlorpyrifos 4E with 100 gallons of water and apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. Make a second application 2 weeks after the first one and a third application after harvest. Avoid contact with foliage in sweet cherries as premature leaf drop may result. Consult your State Agricultural Experiment Station or Extension Service Specialist for proper time to treat in your area.

In addition, 1 of the 3 allowable applications per year may be applied as a dormant spray for control of San Jose scale, peach twig borer, and climbing cutworms. For control of these pests, tank mix ½ to 1 pint of Gowan Chlorpyrifos 4E with 1 to 2 gallons of a petroleum oil recommended for dormant use in 100 gallons of water and spray the entire tree by application to runoff using ground spray equipment. For low volume (concentrate) sprays (40 to 100 gallons of spray mixture per acre), use the same amounts of Gowan Chlorpyrifos 4E and spray oil per acre required for application as a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use the higher dosage of Gowan Chlorpyrifos 4E for severe infestations. Use oil as recommended by your State Agricultural experiment Station or Extension Service Specialist.

Restrictions: Make only 3 applications per year. Do not apply within 6 days before harvest. Do not allow meat or dairy animals to graze in treated orchards.

CITRUS FRUITS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 5 days unless PPE required for early entry is worn. Use Gowan Chlorpyrifos 4E at the rates indicated according to the designated geographic area to control the following pests. Use the lower rates for light infestations and increase the dosage for heavier infestations.

petroleum spray oil recommended for use on citrus trees may be added to dilute spray mixtures only at a rate of up to 1.8 gallons per 100 gallons of water to improve control of aphids, mealybugs, scale insects, and thrips. Treat when insects become a problem or in accordance with the local spray schedule recommended by your State Extension Service Specialist.

Precautions: Observe local use directions for tank mix combinations especially in regard to applications of Gowan Chlorpyrifos 4E plus spray oil. Consult with a county farm advisor, county agency, extension service personnel, agricultural commissioner, pest control advisor, or local Gowan representative for such information regarding a given locality.

Do not apply when trees are stressed by drought or high temperatures.

Gowan Chlorpyrifos 4E is highly toxic to bees exposed to direct treatment and should not be applied when bees are actively visiting the area. During the bloom period in California, apply from 1 hour after sunset until 2 hours before sunrise.

Application Timing: Application of Gowan Chlorpyrifos 4E to citrus during certain stages of flower bud development may result in ridging of fruit in excess of what normally occurs in citrus. This susceptible stage of flower bud development usually occurs from December through March depending upon the citrus cultivar, local climatic conditions, and cultural practices.

- To avoid excessive ridging, do not apply Gowan Chlorpyrifos 4E to citrus from December up to the initiation of bloom (10% bloom).
- In coast lemons where multiple bloom periods are common, applications during development of flower buds prior to each bloom period may result in more than normal ridging of fruit. Presence of "feather growth" usually is an indication of flower bud development. In order to minimize ridging, applications should be made outside of these susceptible stages.

Note: Application of Gowan Chlorpyrifos 4E to orchard floor for ant control is not expected to contribute to excessive ridging and can be made during the entire year.

Restrictions: (PHI 21 days) Do not apply more than 4 lbs ai/A, except in Fresno, Tulare, Kern, Kings and Madera Counties, in California, where it may be applied at 6 lbs. ai/A for control of red scale by ground application. Do not apply more than 2 applications per year. Do not make second foliar application within 30 days of the first application. Do not allow livestock to graze in treated areas.

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GOWAN CHLORPYRIFOS 4E					
CROP	GEOGRAPHIC LOCATION	DOSAGE FOR SPRAY COVERAGE		SPRAY VOLUME (gal/acre)	REMARKS
		PEST	DOSAGE OF Gowan Chlorpyrifos 4E (pt/acre)		
Grapefruit, Lemons, Oranges and Other Citrus Fruits	California Arizona	aphids	2 - 7	Ground: 100-750	Do not use a spray concentration of Gowan Chlorpyrifos 4E of less than 1/2 pt.100 gal of total volume.
		katydids			
		lepidopterous larvae avocado leafroller cutworms fruit tree leafroller orange tortrix western tussock moth	8-12	100-2400	
		scale insects black scale brown soft scale California red scale thrips (suppression) mealybugs	6-12	100-750	
<ul style="list-style-type: none"> • Additional Precautions for California and Arizona: Gowan Chlorpyrifos 4E should not be used in combination with spray oil when temperatures are expected to exceed 95°F the day of application or for several consecutive days thereafter. • Do not apply during the months of December, January, or February. 					
Grapefruit, Lemons, Oranges and other Citrus fruit	Florida	Aphids	2-7	Ground: 100-1400	Do not use a spray concentration of Gowan Chlorpyrifos 4E of less than 1/2 pt.10-0 gal of water per acre.
		Brown citrus aphid Grasshoppers ^a Orange dogs Mealybugs Scale insects Snow scale Florida red scale Purple scale Long scale Chaff scale Black scale Brown soft scale			
		Citrus rust mites	4-7	100-700	Do not use a spray concentration of Gowan Chlorpyrifos 4E of less than 1 pt/100 gal of water per acre.*
* Luber grasshoppers must be controlled when they are small (less than 1 inch in length) by direct contact					
Grapefruit, lemons oranges and other citrus fruit	Texas	Aphids	4-7	200-700	Do not use less than 1/2 pt of Gowan Chlorpyrifos 4E per 100 gallons of water in dilute applications.
		Brown citrus Aphid Cutworms Katydids Mealybugs Scale insects Brown soft scale California red scale Chaff scale			
		Citrus rust mites (suppression)	4-7	200-700	
Small transplanted grapefruit, orange, and other citrus trees	Texas	Aphids Brown citrus aphid Cutworms Katydids Mealybugs Scale insects Brown soft scale California red scale Chaff scale	Max of 7		Apply Gowan Chlorpyrifos 4E at a rate of 1 fl oz/1 gal of water with a backpack sprayer. Apply to runoff.

¹ In California, apply as Outside Coverage using 6-12 pints of Gowan Chlorpyrifos 4E per acre in 100-300 gallons of finished spray per acre.

² In California, apply as thorough coverage using 8-12 pints of Gowan Chlorpyrifos 4E per acre. For dilute sprays, apply 1200-2400 gallons of spray per acre but do not apply more than 12 pints of Gowan Chlorpyrifos 4E per acre or use less than 1/2 pint Gowan Chlorpyrifos 4E per 100 gallons of finished spray per acre.

³ Gallonage per acre is based on average size of mature trees. Adjust to tree size per acre. (REI for pruning activities 5 days)

Gowan Chlorpyrifos 4E may be applied in tank mixes with ethion, dicofol, or fenbutatin-oxide. See the **RECOMMENDATIONS FOR APPLICATION** for further instructions on tank mixing. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for other products used in combination with Gowan Chlorpyrifos 4E.

Gowan Chlorpyrifos 4E should not be tank mixed with Difolatan 80 Sprills (Captafol) as crop injury may occur.

CALIFORNIA ONLY: For control of aphids, katydids, Lepidopterous larvae including avocado leafroller, cutworms, fruittree leafroller, orange tortrix, and Western tussock moth, use 2-7 pints per acre on grapefruit, lemons, oranges, and other citrus fruits. (apply by aerial application (fixed-wing or helicopter) spray equipment). Use a total spray volume of 15-30 gallon per acre.

A petroleum spray oil recommended for use on citrus may be added to dilute spray mixtures only at a rate of up to 1.8 gallons per 100 gallons of water to improve control of aphids, mealybugs, scale insects, and thrips. Note: Do not apply when temperature exceeds 95°F or trees are stressed by drought or high temperatures. Observe local use directions for tank mixes with spray oil.

Do not apply more than 2 applications per fruit year or more than 15 pints of Gowan Chlorpyrifos 4E per acre per fruit year. Do not make 2nd application within 30 days of first application. Do not pick fruit or do other work involving contact with trees within 2 days of last treatment. Do not allow livestock to graze in treated areas.

CITRUS ORCHARD FLOORS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 5 days unless PPE required for early entry is worn.

Imported Fire Ants and Other Ant Species: Use Gowan Chlorpyrifos 4E to control red imported fire ants and other ant species by applying the specified dose in 25 or more gallons of water with ground application equipment that will uniformly apply the spray to the orchard floor. To control foraging ants and suppress mounds, apply Gowan Chlorpyrifos 4E to the orchard floor at the rate of ¾ to 1 quart per acre. Repeat as needed. For best insect control, uniform coverage of the orchard floor is necessary. Do not apply where weed growth or other obstructions would impede uniform coverage of the orchard floor. Foliar applications of Gowan Chlorpyrifos 4E may be made in addition to the orchard floor treatments.

Gowan Chlorpyrifos 4E may also be applied to citrus orchard floors through sprinkler irrigation systems only if the system uniformly covers the soil surface at the base of the tree. For best results, use the recommended amount of Gowan Chlorpyrifos 4E per acre. See Sprinkler Irrigation instructions in the general information section of this label.

Application with Dry Bulk Fertilizer: For impregnating Gowan Chlorpyrifos 4E on dry fertilizers use a closed rotary drum mixer equipped with suitable spraying equipment. The spray nozzle should be positioned inside the mixer to provide uniform spray coverage of the tumbling fertilizer. Apply Gowan Chlorpyrifos 4E at the rate of 1 ½ to 2 pints per acre to control ants in citrus orchard floors. The maximum concentration of Gowan Chlorpyrifos 4E to be added is 2 pints per 200 pounds of fertilizer. At the higher concentration of Gowan Chlorpyrifos 4E the fertilizer may not readily absorb all of the liquid. For a suitable free-flowing mixture, an absorptive powder such as Micro-Cel E should be added separately and uniformly to the fertilizer blend following addition of Gowan Chlorpyrifos 4E. Bulk fertilizers impregnated with Gowan Chlorpyrifos 4E should be applied immediately, not stored. All bulk containers should be tightly covered while the products are being transported and applied to reduce the change of loss of Gowan Chlorpyrifos 4E via volatilization. Foliar applications of Gowan Chlorpyrifos 4E may be made in addition to the orchard floor treatments. Compliance with any and all federal and state laws and regulations relating to the Gowan Chlorpyrifos 4E and fertilizer mixture is the responsibility of the person offering such mixture for sale or distribution.

Restrictions: Do not apply more than 10 quarts of Gowan Chlorpyrifos 4E per acre per season. Do not apply last treatment within 28 days before harvest for seasonal rates of more than 3 quarts per acre of Gowan Chlorpyrifos 4E or 14 days before harvest for seasonal rates of 3 quarts per acre or less of Gowan Chlorpyrifos 4E. Do not allow livestock to graze in treated areas. In Florida, do not apply more than 3 quarts per season.

CRANBERRIES: Use Gowan Chlorpyrifos 4E by application as a broadcast, foliar spray to control brown spanworm, cranberry fruitworm, cranberry weevil, cutworms, fireworms, and Sparganothis fruitworms at the rate of 3 pints per acre. Mix the specified dosage in enough water to ensure thorough coverage and apply no less than 5 gallons of spray per acre when using aerial equipment or no less than 15 gallons of spray per acre when using ground equipment. For weevil control, apply once at flower bud development (late May, early June) and, if weevils are present, once after 100% bloom (early-to mid July). For other insects, treat when field counts indicate damaging insect populations are developing or present. Apply only after the winter flood has been removed. To avoid pesticide contamination of flood waters, make no applications while bogs are flooded.

Gowan Chlorpyrifos 4E may be applied through sprinkler irrigation systems to control the above listed pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

Restrictions: Do not make more than 2 applications per year or apply within 60 days before harvest.

FIELD CORN and SWEET CORN (including Corn Grown for Seed): For use to control cutworms, armyworms, corn earworm, corn rootworm adults, chinch bugs, grasshoppers, wireworms, flea beetle larvae and adults, aphids, billbugs, grubs, western bean cutworm, corn borers, symphylans, common stalk borer, and lesser cornstalk borer.

Restrictions: Do not apply more than 1 lb ai/A per application. Do not make more than 3 applications per season. Do not apply more than 3 lbs. ai/A per season.

Pre-Plant Incorporation Treatment

Use Gowan Chlorpyrifos 4E at the following rates by application in sufficient water to the soil surface and incorporate into the soil:

Pests	Gowan Chlorpyrifos 4E
cutworms symphylans	2 - 4 pt/acre
wireworms billbugs flea beetle larvae grubs seed corn maggots seed corn beetle	4 pt/acre
lesser cornstalk borer corn rootworm larvae	6 pt/acre

Use recommended rate in not less than 10 gallons of water per acre and apply as a broadcast spray to the soil surface using suitable power-operated ground spray equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a disc, field cultivator, or equivalent equipment.

Gowan Chlorpyrifos 4E may also be applied in tank mixtures with non-pressure fertilizer solutions and/or with Bladex, Eradicane, Sutan, Lasso, Dual®, and atrazine herbicides. See Mixing Directions on page 2 for further information. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for the other products used in combination with Gowan Chlorpyrifos 4E.

Pre-Plant, At-Plant, or Preemergence Treatment in Conservation Tillage Use Gowan Chlorpyrifos 4E at the following rates by application in sufficient water to surface trash and exposed soil:

Pests	Gowan Chlorpyrifos 4E
Cutworms Armyworms	1 - 2 pt/acre

Use recommended rate in not less than 20 gallons of water per acre and apply as a broadcast spray using suitable power-operated ground spray equipment. Use higher rates for residual control. Gowan Chlorpyrifos 4E may also be applied in tank mixtures with non-pressure fertilizer solutions and/or with paraquat and Roundup herbicide. See Mixing Directions on page 2 for further information. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for the other products used in combination with Gowan Chlorpyrifos 4E.

T-Band At Plant Treatment

Gowan Chlorpyrifos 4E insecticide may be applied as a liquid T-Band in fields with no more than 30% cover of crop residue remaining on the soil surface. Apply Gowan Chlorpyrifos 4E as a liquid T-Band over an open seed furrow and incorporate into the top one inch of soil using discs, chains or other suitable equipment. Position a flat fan nozzle behind the planter shoe, in front of the press wheel adjusted to provide a 5 to 6 inch band width centered over the row. Apply Gowan Chlorpyrifos 4E at a rate of 2.4 fluid ounces per 1000 linear feet of row (2 pints per acre with 40 inch row spacing) in a minimum spray volume of 5 gallons per acre. The table below provides equivalent application rates for various row spacings. Applications made using a band width less than 5-6 inches may result in phytotoxicity under certain environmental conditions (e.g., cool temperatures, wet conditions, light soils).

Pests	Amount of Gowan Chlorpyrifos 4E	
	Row Spacing (inches)	Pints per acre
Corn rootworm larvae	30	2.6
Cutworms	36	2.2
Grubs	38	2.1
Seed corn beetle	40	2.0
Seed corn maggot		

Cultivation Time Treatment

Use Gowan Chlorpyrifos 4E at the rate of 2 pints per acre to control corn rootworm larvae. Apply Gowan Chlorpyrifos 4E as a water emulsion on both sides of the row at the base of the plants just ahead of the cultivator shovels. Cover the insecticide with soil around the brace roots. The best time to apply a basal treatment of a soil insecticide with cultivation is near the beginning of egg hatch. A cultivation application of Gowan Chlorpyrifos 4E may be made in addition to an at planting application of Lorsban 15G insecticide.

Postemergence Treatment

Use Gowan Chlorpyrifos 4E at the following rate by application in sufficient water to ensure thorough coverage of treated plants:

Pests	Gowan Chlorpyrifos 4E
Grasshoppers	½ - 1 pt/acre
Armyworms Chinch bugs Aphids Corn rootworm adults Cutworms Flea beetle adults Southern corn leaf beetle Webworms Western bean cutworm European corn borer (see note)	1 - 2 pt/acre
Southern corn borer Corn earworm	1 ½ - 2 pt/acre
Billbugs Lesser cornstalk borer Common stalk borer	2-3 pt/acre

Note: The recommended dosage will control silk clipping by corn rootworm adults. For European corn borer control, use 1 1/2 to 2 pints per acre when application is made with power-operated ground and aerial equipment and 1 to 2 pints per acre when application is made through a sprinkler irrigation system. See text below for generation specific treatment information.

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Treat when field counts indicate that pests are or may become a problem. For best billbug, chinch bug, and flea beetle control, apply with sufficient water to ensure a minimum spray volume of 20 to 40 gallons per acre and 40 psi using **ground spray equipment**. On corn less than 6 inches tall, apply the insecticide spray in a 9- to 12-inch wide band over the row. On corn greater than 6 inches tall, apply the insecticide spray using drop nozzles directed to the base of the plant. Do not reduce the dosage for banded or directed applications. Concentrate the full labeled dosage rate in the treated zone. When chinch bugs continue to immigrate to corn over a prolonged period or under extreme pressure, a second application of Gowan Chlorpyrifos 4E may be needed.

For cutworm, webworm, western bean cutworm, armyworm, aphid, European and southwestern corn borer, grasshopper, lesser cornstalk borer, corn rootworm adult, corn earworm, and common stalk borer control, apply as a broadcast spray using either aerial (fixed-wing or helicopter) or power-operated ground spray equipment. For aerial application use 2 to 5 gallons of spray per acre. Control may be reduced at low spray volumes under high temperature and wind conditions. For cutworms, it is preferable to apply Gowan Chlorpyrifos 4E when soil is moist and worms are active on or near the soil surface. If ground is dry, cloddy, or crusty at time of treatment, worms may be protected from the spray and effectiveness will be reduced. If such conditions exist, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment may improve control. Apply as needed to maintain control. Use higher rates for larger worms or when heavy cutworm infestations are expected or present. Fields should be monitored for cutworm presence or damage. A second application may be required if damage or density levels exceed economic thresholds established for your area. Consult your Agricultural Experiment Station or Extension Service Specialist for additional information concerning control practices in your area. For webworm control, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment is necessary. For first-generation European corn borer control, treat when 25% to 50% of the corn plants show pinhole feeding or leaf-feeding scars. For maximum control potential, ground applications of Gowan Chlorpyrifos 4E should be directed into the corn leaf whorls. Scout fields within 5 days after application to determine if a second application is needed. University research indicates that achieving greater than 50% control of first generation European borer with a single liquid insecticide treatment is highly dependent on timing, insecticide placement, and weather conditions. Treatment for control of second-generation European corn borer should be applied when field counts of egg masses indicate an infestation is present or about to develop. For southwestern corn borer control, treat when field counts of egg masses indicate pests are or may become a problem. A second application may be applied 10 to 14 days later, if needed due to reinfestation. For common stalk borer control, treat approximately 11 days after application of Roundup herbicide or after complete burndown with paraquat herbicide (3 to 5 days). Do not use Gowan Chlorpyrifos 4E in combination with the burndown herbicide for control of common stalk borer.

Gowan Chlorpyrifos 4E may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar insects. For best results, use the recommended rate of Gowan Chlorpyrifos 4E in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the Gowan Chlorpyrifos 4E plus oil mixture throughout the injection period. Gowan Chlorpyrifos 4E may also be applied through sprinkler irrigation systems at the rate of 2 to 3 pints per acre to control corn rootworm larvae. Time application to coincide with the appearance of the second instar larvae. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. Apply with enough water to wet the root zone to the depth control is needed. Under saturated soil conditions, allow enough soil drying to occur so that an application using a minimum water rate will not produce runoff. Consult university extension personnel or other experienced consultants to determine the need to treat and to aid in application timing. See Sprinkler Irrigation instructions in the General Information section of this label.

Restrictions: Do not apply within 35 days before harvest of grain. Do not apply more than a total of 15 pints of Gowan Chlorpyrifos 4E per acre per season. Do not allow livestock to graze in treated areas nor harvest treated corn silage as feed for meat or dairy animals within 14 days after last treatment. Do not feed treated corn fodder to meat or dairy animals within 35 days after last treatment.

SWEET CORN (Florida and Georgia): Use Gowan Chlorpyrifos 4E to control infestations of beet armyworm, fall armyworm, and corn earworm by application as a broadcast, foliar spray at the rate of 1 to 2 pints per acre. Mix the specified dosage in enough water to ensure thorough coverage and apply using suitable aerial or ground spray equipment. For aerial application, use at least 2 gallons of spray per acre. Treat when field counts indicate damaging pest populations are developing or present. Re-treat as necessary to maintain control but do not apply more than 22 one-pint or 11 two-pint treatments per season.

Gowan Chlorpyrifos 4E may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar insects. For best results, use the recommended rate of Gowan Chlorpyrifos 4E in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the Gowan Chlorpyrifos 4E plus oil mixture throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

Restrictions: Do not apply more than 22 pints of Gowan Chlorpyrifos 4E per acre per season. Do not harvest corn ears, allow livestock to graze in treated areas, or feed treated silage, fodder, or grain to meat or dairy animals within 21 days after treatment. Do not use in conjunction with postplant broadcast, foliar applications of Lorsban 15G.

COTTON: Use Gowan Chlorpyrifos 4E for control of the following pests in all states except Arizona and California at the dosages indicated:

Pests	Gowan Chlorpyrifos 4E
Cotton fleahopper Plant bugs (<i>Lygus</i> , <i>Mirids</i>)	3/8 - 1 pt/acre
Fall armyworm Grasshoppers Thrips Yellowstriped armyworm	1/2 - 1 pt/acre
Cotton aphid	1/2 - 2 pt/acre
Spider mites	1 pt/acre
Beet armyworm Cotton bollworm Tobacco budworm Cutworms Pink bollworm Salt marsh caterpillar	1 1/2 - 2 pt/acre

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Note: The recommended dosage rate of 3/8 pint per acre will not achieve the high degree of control of the higher label rate, but will minimize the damage done by plant bugs and cotton fleahopper and allow the beneficial insects to survive, build up, and be available to aid in the control of bollworms infesting cotton. Use a higher dosage within the indicated rate range.

Use Gowan Chlorpyrifos 4E for control of the following pests in Arizona and California at the dosages indicated:

Pests	Gowan Chlorpyrifos 4E
Armyworms Cotton aphid Cotton fleahopper Lygus Salt marsh caterpillar Silverleaf whitefly thrips	1 - 2 pt/acre
Cotton bollworm Cotton leaf perforator (suppression) Tobacco budworm Boll weevil Cutworms Pink bollworm Spider mites (suppression)	2 pt/acre

For control of silverleaf whitefly, apply in tank mix combination with the recommended rate of a pyrethroid insecticide labeled for control or suppression of whitefly. Re-treat as necessary to maintain control.

Mix the required dosage with sufficient water to ensure thorough coverage of plants and apply using aerial or power-operated ground spray equipment. For aerial application, use at least 1 gallon of spray per acre. Treat when field counts indicate damaging insect populations are developing or present. Re-treat as necessary to maintain control.

Gowan Chlorpyrifos 4E may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

For effective control of spider mites when large numbers of eggs are present, apply a second spray 3 to 5 days after initial treatment to control newly hatched nymphs. For best results on bollworms and budworms, it is suggested that fields be scouted twice per week and treatments made when worms are 1/4 inch or less in length.

Proper application techniques help to ensure thorough spray coverage and correct dosage and are thus important in obtaining good control of pests. Consider these suggestions when applying Gowan Chlorpyrifos 4E on cotton.

Aerial Application

Shorten boom length to avoid spray entering the vortices at the wing tips. Swath width should be reduced when wind direction is the same as direction of spraying.

The proper nozzle arrangement and swath width to avoid skips and vortices effect can be checked out by flying over a paper tape (adding machine paper) using water with or without soluble dye. (The dye gives a permanent record.)

Flying at a height of 5 to 15 feet above the target results in the best coverage.

Nozzle orientation of the boom is important. More break-up occurs when nozzles are pointed straight down versus the straight back position. Desired droplet size (100 to 200 microns) can be obtained by angling the nozzles somewhere in this range.

Marking of swath by flagging or permanent markers is essential.

Ground Application: Orient the boom and nozzles so that uniform coverage is obtained. The swath width should not be wider than the boom; drift spray is wasted spray so do not depend on it. Use flat fan or disc-core hollow cone nozzles with maximum spacing of 20 inches and a spray pressure of 40 to 60 psi with a droplet size of 100 to 200 microns.

Restrictions: Do not apply within 14 days before harvest. Do not make more than 3 applications per season. Do not apply more than 3 lbs ai/acre per season. Do not allow livestock to graze in treated areas. Do not feed gin trash or treated forage to livestock.

GS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days unless PPE required for early entry is worn.

Use Gowan Chlorpyrifos 4E at the rate of 2 quarter per acre for control of dried fruit beetle by application in sufficient water to the soil surface followed by incorporation into the top 3 inches of soil. Apply to fig orchard soil as a dormant application in later winter prior to beetle emergence and prior to leaf formation.

Restrictions: Make only 1 application per year. Do not apply within 7 months of harvest. Based on available residue data, use of Gowan Chlorpyrifos 4E on figs is restricted to California.

GRAPES: Use Gowan Chlorpyrifos 4E for control of grape root borer by application just before the pest emerges from the soil. Mix 4 1/2 pints of Gowan Chlorpyrifos 4E with 100 gallons of water and apply 2 quarts of the diluted spray mixture to the soil surface on a 15-square foot area around the base of each vine. Do not allow spray to contact fruit or foliage.

Restrictions: Do not make more than 1 application per season or apply within 35 days before harvest. Based upon available residue data, the use of Gowan Chlorpyrifos 4E in grapes is restricted to states east of the Rocky Mountains.

MINT: Use Gowan Chlorpyrifos 4E by application as a broadcast, foliar spray to control cutworms at the rate of 2 to 4 pints per acre and mint root borer at the rate of 4 pints per acre. Mix the specified dosage in water to give no less than 10 gallons of spray per acre and apply using ground spray equipment. For cutworm control, treat during May and June when field counts indicate damaging insect populations are developing or present. When larvae are less than 3/4 inch in length, use the 2-pint rate. When larvae are 3/4 inch or more in length, use the higher rate. **Make only 1 application during the growing season. Do not apply within 90 days before harvest.** For mint root borer control, apply postharvest when field counts indicate damaging insect populations are developing or present. Follow treatment with approximately 1 acre inch of sprinkler irrigation immediately after application to incorporate the insecticide into the soil. **Make only 1 postharvest application per season.**

Gowan Chlorpyrifos 4E may also be applied through sprinkler irrigation systems as a postemergence broadcast application to control the above listed pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the general information section of this label.

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NECTARIES, PEACHES: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days unless PPE required for early entry is worn.

Use Gowan Chlorpyrifos 4E for the control of peach tree borers by application as a trunk spray before newly hatched borers enter the trees. Mix 3 quarts of Gowan Chlorpyrifos 4E with 100 gallons of water and apply as a coarse, low-pressure spray to give uniform coverage of tree trunks. Thoroughly wet all bark areas from ground level to scaffold limbs. Do not allow spray to contact fruit. Consult your State Agricultural experiment Station's or Extension Service Specialist's written recommendations for proper time to treat in your area.

Gowan Chlorpyrifos 4E may also be used as a pre-plant dip application for non bearing peach trees and the equivalent application rate of 3 quarts per 100 gallons of water for control of peach tree borer. Dip trees several inches above the grafting bud scar and plant immediately or allow to dry before returning to storage. Do not allow peach trees to remain in contact with the dip solution.

Restrictions: Make only 1 application per season. Do not apply within 14 days before harvest. Do not allow meat or dairy animals to graze in treated orchards.

ONIONS: Use Gowan Chlorpyrifos 4E to control onion maggot by application as an in-furrow drench. Apply Gowan Chlorpyrifos 4E at the rate of 1.1 fluid ounces per 1,000 linear feet of row at an 18-inch row spacing. Use a minimum of 40 gallons of total drench per acre. Incorporate to a depth of 1 to 2 inches.

Restrictions: Do not make more than 1 application per year.

PEANUTS: For suppression of wireworms, apply Gowan Chlorpyrifos 4E at a rate of 4 pints per acre as a pre-plant broadcast spray to the soil surface followed by immediate soil incorporation to a depth of 3 to 4 inches. Use a minimum of 10 gallons of total spray per acre.

Restrictions: The combined total of pre-plant and postplant applications of Gowan Chlorpyrifos 4E and Lorsban 15G must not exceed 4 pounds active ingredient per acre per season. Do not make more than 1 application per season. Do not harvest within 21 days after treatment. Do not feed treated peanut forage or hay to meat or dairy animals. Aerial applications to peanuts is prohibited.

SORGHUM – GRAIN SORGHUM (MILO)

Use Gowan Chlorpyrifos 4E for control of the following pests at the dosages indicated:

Pests	Gowan Chlorpyrifos 4E	Specific Directions
Sorghum midge	½ pt/acre	Apply when 30% to 50% of the seed heads are in blooms, repeat at 3-day intervals
Grasshoppers Yellow sugar cane aphid And other aphids	½ - 1 pt/acre	
Greenbug	½ - 2 pt/acre	For infestations of greenbug that are difficult to control, use a higher dose within the indicated rate range
Chinch bugs Lesser cornstalk borer	1 - 2 pt/acre	Apply as a directed spray toward the base of the plant using power operated ground spray equipment with sufficient water to ensure coverage of an 8-12 inch band centered in the row. On plants less than 6 inches high, apply an 8 - 12 inch band over the row. Do not reduce the dosage for banded or directed applications. Concentrate the full labeled dosage rate in the treated zone.
Webworms	1 pt/acre	
Armyworms Cutworms	1 - 2 pt/acre	
European corn borer Southwestern corn borer	1 ½ - 2 pt/acre	
Corn earworm	2 pt/acre	

Mix the specified dosage in enough water to ensure thorough coverage and apply using suitable aerial or ground spray equipment. To minimize chemical injury, do not apply Gowan Chlorpyrifos 4E to drought stressed grain sorghum within 3 days following irrigation or rain except where the product is applied in irrigation water.

Gowan Chlorpyrifos 4E may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

Precaution: Be aware that sorghum lines used in seed production fields may be more sensitive to chemical injury. Susceptible inbred lines or hybrids are likely to be at greater risk of yield-reducing chemical injury when sprayed at the higher rates of application. Do not apply more than 1 pint per acre of Gowan Chlorpyrifos 4E to seed sorghum if the additional risk of crop injury is unacceptable.

Restrictions: The treated crop is not to be used for grain, forage, fodder, hay, or silage within 30 days after application of 1 pint of Gowan Chlorpyrifos 4E per acre or within 60 days after application of rates above 1 pint per acre. Do not treat sweet varieties of sorghum. Do not apply more than 3 pints of Gowan Chlorpyrifos 4E per acre per season. Do not make more than 3 applications per season.

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SOYBEANS: For use to control armyworms, bean leaf beetle, Chinese aphid, corn earworm, cutworms, European corn borer, grasshoppers, green cloverworm, lesser cornstalk borer, Mexican bean beetle, saltmarsh caterpillar and other woollybears, southern green stink bug, spider mites, and velvetbean caterpillar.

Soil Treatment Use Gowan Chlorpyrifos 4E at the rate of 1 to 2 pints per acre to control cutworms and lesser cornstalk borer. Mix the specified dosage in a minimum of 10 gallons of spray per acre and apply to the soil surface using suitable ground spray equipment. Equivalent rates of insecticide spray required per 100 feet of row for various row spacing are given in the accompanying table. For at-plant treatments apply the insecticide over the row in a 4- to 6-inch band in front of the planter shoe or press wheel or after the press wheel followed by a drag chain for light incorporation. Do not apply as an in-furrow treatment. For postemergence rescue treatments, apply as a directed spray in a 9- to 12-inch band at the base of the plant. To plants under 6 inches high apply over the top in a 6- to 12-inch band. Treat when field counts or conditions indicate that pests are or may become a problem.

Volume of Spray Per Acre	Fluid Ounces of Spray Required Per 100 Feet of Row for Various Row Spacing			
	36"	32"	28"	24"
10 Gallons	8.8	7.9	6.9	5.9
15 Gallons	13.2	11.8	10.3	8.8
20 Gallons	17.6	15.7	13.7	11.8

Foliar Treatment: Use Gowan Chlorpyrifos 4E at the following rate by application in sufficient water to ensure thorough coverage of treated plants:

Pests	Gowan Chlorpyrifos 4E
European corn borer Southern green stink bug	2 pt/acre
Bean leaf beetle Cutworms Corn earworm Saltmarsh caterpillar and other woolly bears Soybean aphid	1-2 pt/acre
Mexican bean beetle Armyworms	1 - 1 ½ pt/acre
Velvetbean caterpillar Grasshoppers Green cloverworm Spider mites	½ - 1 pt/acre

Apply as a broadcast spray using either aerial or ground equipment when field counts indicate damaging insect populations are developing or present; re-treat as necessary to maintain control. For effective control of spider mites when large numbers of eggs are present, apply a second spray 3 to 5 days after initial treatment to control newly-hatched nymphs. **On determinate soybeans do not apply more than 1 application after pod set.**

Gowan Chlorpyrifos 4E may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

Restrictions: Do not apply more than 6 pints of Gowan Chlorpyrifos 4E per acre or 3 pounds of chlorpyrifos (active ingredient) per acre per season. Do not make more than 3 applications per year. Do not apply last treatment within 28 days before harvest nor apply last 2 treatments closer than 14 days apart. Do not allow livestock to graze in treated areas or otherwise feed treated soybean forage, hay, and straw to meat or dairy animals.

STRAWBERRIES: Use Gowan Chlorpyrifos 4E by application as a broadcast foliar spray to control strawberry bud weevil at the rate of 1 quart per acre. Apply in a minimum of 40 gallons of spray per acre when buds first appear and 10 to 14 days later. Do not apply after berries start to form or when berries are present. Gowan Chlorpyrifos 4E should not be tank mixed with pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination noninjurious under your current conditions of use. Phytotoxicity may occur when Gowan Chlorpyrifos 4E is applied to strawberries experiencing high temperature and drought stress.

Restrictions: For pre-bloom use only. Do not make more than 2 applications per season or apply within 21 days before harvest.

Pre-Plant Soil Incorporated Treatment for Grub Control: Gowan Chlorpyrifos 4E may be applied as a pre-plant soil incorporated treatment for grub control in strawberries. Apply Gowan Chlorpyrifos 4E at 2 quarts per acre in sufficient water to ensure uniform soil coverage and incorporate into the soil.

Precautions:

- Do not apply after berries start to form or when berries are present.
- Do not tank mix Gowan Chlorpyrifos 4E with other pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination to be non-injurious under intended conditions of use. Phytotoxicity may occur when Gowan Chlorpyrifos 4E is applied to strawberries under conditions of high temperature and drought stress.

SUNFLOWERS: For use to control cutworms, sunflower beetle larvae and adults, stem weevil, sunflower moth, banded sunflower moth, woollybears, seed weevil, and grasshoppers.

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Pre-Plant Incorporation Treatment

Use Gowan Chlorpyrifos 4E at the following rates by application in sufficient water to the soil surface and incorporate into the soil:

Pests	Gowan Chlorpyrifos 4E
Cutworms	2 - 4 pt/acre

Use recommended rate in not less than 10 gallons of water per acre and apply as a broadcast spray to the soil surface using suitable power operated ground spray equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a disc, field cultivator, or equivalent equipment.

Postemergence Treatment: Use Gowan Chlorpyrifos 4E for control of the following pests at the dosage indicated by application in sufficient water to ensure thorough coverage of treated plants:

Pests	Gowan Chlorpyrifos 4E
Cutworms	2-3 pt/acre
Sunflower beetle larvae and adults	1 - 1 1/2 pt/acre
Stem weevil	
Sunflower moth	
Banded sunflower moth	
Woolly bears	
Seed weevil	
Grasshoppers	1 pt/acre
Tarnished plant (Lygus) bugs	1 - 2 pt/acre

Apply as a broadcast spray using either aerial (fixed-wing or helicopter) or power-operated ground spray equipment when field counts indicate that pests are or may become a problem. For cutworm control, a second treatment may be made 7 to 10 days later, if needed. For stem weevil control, optimal treatment time is within 5 to 7 days after adult weevils begin to appear. For sunflower moth control, make first application during early 1% to 5% bloom stage. A second treatment may be made 7 days later, if needed. For seed weevil control, treat when field counts indicate there are 10 to 12 adults per plant for oil crops and 1 to 3 adults per plant on confectionery crops. Additional treatments should be made at successive 7- to 10-day intervals if field counts indicate need to re-treat. For sunflower beetle larvae or adult control, treat when field counts indicate there are 10 larvae or 1 to 2 adults per seedling. Additional treatments may be made at successive 7- to 10-day intervals if field counts indicate need to re-treat. For tarnished plant (Lygus) bugs, use the higher rate in the range where populations are heavy. Application is recommended at the onset of pollen spread or approximately 10% bloom (R-5 growth stage). For best protection, apply a second treatment seven days later. Use sufficient water to ensure thorough coverage of treated plants.

Restrictions: Do not apply more than 9 pints of Gowan Chlorpyrifos 4E per acre per season. Do not apply within 42 days before harvest. Do not allow livestock to graze in treated areas. Do not make more than 3 applications per season. Do not apply more than 3 lbs. ai/A per season.

SUGAR BEETS: Soil Treatment (At Planting or Pre-Plant Incorporated)

To reduce feeding damage from early season insects such as cutworms, use Gowan Chlorpyrifos 4E at planting or as a pre-plant treatment and incorporate to a depth of 1 to 2 inches. Do not apply as an in-furrow treatment. Apply 1 pint of Gowan Chlorpyrifos 4E per planted acre to a 10-inch wide band centered on the row for furrows 30 inches apart. (For rows 30 inches apart, this is equivalent to 9.2 fluid ounces of Gowan Chlorpyrifos 4E per 10,000 feet of row). For other row widths, adjust the spray volume per planted acre in proportion to the area actually treated.

Postemergence Treatment

Apply Gowan Chlorpyrifos 4E as a broadcast or banded foliar spray. Treat when field counts indicate that damaging insect populations are developing or present. Re-treat as necessary to maintain control of target insects.

Broadcast Application: Apply the specified dosage in water using 2 to 5 gallons of finished spray per acre when using aerial spray equipment or 10 to 30 gallons per acre when using ground spray equipment.

Broadcast Application Through Sprinkler Irrigation Systems: Gowan Chlorpyrifos 4E may also be applied through sprinkler irrigation systems as a postemergence broadcast application to control the foliar pests. For best results, use the recommended rate of Gowan Chlorpyrifos 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See Sprinkler Irrigation instructions in the General Information section of this label.

Band Application: Apply the specified dosage within the band using a minimum of 6 1/2 gallons of finished spray per acre. Apply the spray in a 5- to 6-inch wide band over the row. Do not reduce the dosage for band applications. Concentrate the full labeled dosage rate in the treated zone. For best results, band-applied treatments should be lightly incorporated, either mechanically or with irrigation.

Pests	Broadcast	Band	Timing/Special Directions
Grasshoppers	1/2 - 1 pt/acre		Low rate will control small nymphs (1 st through 3 rd instar).
Tarnished plant (Lygus) bugs	1 pt/acre		Consult local university for treatment thresholds. Use sufficient carrier volumes to ensure adequate coverage (5 gpa recommended for aerial applications).
Spider mites Beet leafminer Spinach leafminer	1 pt/acre	2/3 pt/acre	
Fall armyworm Yellowstriped armyworm Webworms	1-2 pt/acre	2/3 - 1 1/3 pt/acre	
Beet armyworm	1 1/2 - 2 pt/acre	1 - 1 1/3 pt/acre	
Cutworms Flea beetle adults	2 pt/acre	1 1/3 pt/acre	

Pests	Broadcast	Band	Timing/Special Directions
Sugar beet maggot Adults	½ - 1 pt/acre		To target adults present at time of application based on local field trap monitoring, apply anytime from 7 days before until 3 days after peak adult emergence.
Sugar beet root maggot larvae	2 pt/acre	2/3 - 1 1/3 pt/acre	Use as supplemental treatment following an at-plant insecticide treatment for control of root maggot. Application timing should be based on local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.
Sugar beet root maggot larvae		1 1/3 - 2 pt/acre	Use as primary treatment to control root maggot. Application timing should be based on local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.

Restrictions: Do not apply within 30 days of harvest of beet roots and tops. Do not apply more than a total of 8 pints per acre of Gowan Chlorpyrifos 4E on a broadcast basis. Do not allow livestock to graze in treated areas or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment. Do not make more than 3 applications per season. Do not apply more than 3 lbs ai/A per season.

SWEET POTATOES: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 2 days unless PPE required for early entry is worn. Use Gowan Chlorpyrifos 4E to reduce the feeding damage caused by populations of Conderus wireworm, Systema flea beetle, and the sweet potato flea beetle. Apply at the rate of 4 pints per acre as a broadcast (overall) spray to the soil surface followed by incorporation. Mix the specified dosage with enough water to obtain uniform coverage and apply as a coarse spray using suitable ground spray equipment. Incorporate the insecticide to a depth of 4 to 6 inches as soon as possible after application by using a rotary hoe, disc cultivator, or other suitable incorporation equipment. Plant the crop in the usual manner no later than 14 days after treatment (any delay in planting will reduce the length of time that Gowan Chlorpyrifos 4E will protect against feeding damage). Gowan Chlorpyrifos 4E will not control false wireworms or white fringe beetle or other grubs that attack sweet potatoes.

Restrictions: Do not make more than 1 application per season. Do not harvest within 125 days of treatment.

Tobacco: Use Gowan Chlorpyrifos 4E for pre-plant treatment to control larvae of cutworms, flea beetles, mole crickets, root maggots, and wireworms. Apply 2 to 3 quarts of Gowan Chlorpyrifos 4E per acre in not less than 10 gallons of water as a broadcast (overall) spray to the soil surface 24-48 hours before bedding and transplanting. Immediately following application, incorporate the insecticide into the soil to a depth of 2 to 4 inches using suitable equipment. The application of Gowan Chlorpyrifos 4E will also suppress the movement of imported fire ants into treated fields. To control the above insects and low to moderate populations of rootknot nematodes in North Carolina, South Carolina, and Virginia, use Gowan Chlorpyrifos 4E at the rate of 5 quarts per acre. To control the above insects and moderate populations of rootknot nematodes in all tobacco growing regions, use Gowan Chlorpyrifos 4E in a tank mix with Nemacur 3 at the rate of 2 quarts of Gowan Chlorpyrifos 4E plus 4 quarts of Nemacur 3 nematicide per acre. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for Nemacur 3 used in combination with Gowan Chlorpyrifos 4E. Apply the specified dosage in not less than 10 gallons of water as a broadcast (overall) spray to the soil surface 24 to 48 hours before bedding and transplanting. Immediately following application, incorporate into the soil to a depth of at least 4 inches using suitable equipment. Where the nematode species *Meloidogyne arenaria* or *M. javanica* are present or high populations of *M. incognita*, apply Telone II soil fumigant at the recommended label rate.

Before broadcast application of Gowan Chlorpyrifos 4E onto existing beds, knock down beds to final shape for transplanting. Use of PTO-driven implements that will incorporate Gowan Chlorpyrifos 4E to a depth of 4 inches is recommended.

Restrictions: Do not apply more than 2 lbs. ai/A per season. Do not apply more than 2 lbs ai/A per season. Do not make more than 1 application per season.

TREE FRUITS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days unless PPE required for early entry is worn.

Use Gowan Chlorpyrifos 4E as a dormant or delayed dormant spray at the rates indicated to control the following insects on the crops listed. Do not foliar apply to apples post-bloom. While Gowan Chlorpyrifos 4E may be used without oil, oil is recommended to control additional pests such as European red mite.

Use Gowan Chlorpyrifos 4E at the rates indicated to control the listed pests.

Crop	Insect	Gowan Chlorpyrifos 4E per 100 gallons of spray
Apples	Rosy apple aphid San Jose scale Lygus Pendemis leafroller Climbing cutworms Oblique banded leafroller	½ - 1 pint (use a minimum of 1 ½ pt/acre)
Pears	San Jose scale Climbing cutworms Pear Psylla adults	
Plums/prunes	San Jose scale Mealy plum aphid Climbing cutworms Peach twig borer	
Almonds Peaches Nectarines	San Jose scale Peach twig borer Climbing cutworms	

Based on 200 to 600 gallons per acre as a dilute spray.

For dilute sprays, tank mix the specified dosage with 1 to 2 gallons of a petroleum spray oil recommended for dormant use in 100 gallons of water and spray the entire tree by application to runoff using suitable ground spray equipment. (See Additional Precautions Specific to California below for use in California.)

For low volume (concentrate) sprays, less than 200 gallons of spray mixture per acre, use the same amount of Gowan Chlorpyrifos 4E as for a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use the higher dosage of Gowan Chlorpyrifos 4E for severe infestations. Use oil as recommended by your State Agricultural Experiment Station or Extension Service Specialist.

Precautions: Because cold or dry conditions may cause Gowan Chlorpyrifos 4E plus oil sprays to infuse trees resulting in bud damage or drop, do not apply until winter rains or irrigation has replenished soil moisture such that bark and twigs are not desiccated. Do not use more than 4 pints of Gowan Chlorpyrifos 4E per acre.

Additional Precautions Specific to California: Use a minimum of 250 gallons of total spray volume per acre. Do not use more than 4 gallons of spray oil per acre on almonds, peaches, or nectarines. Do not use any adjuvants or surfactants in addition to or as a substitute for a petroleum spray oil in a tank mix with Gowan Chlorpyrifos 4E. Do not apply on almonds in the following counties in California: Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo, and Yuba.

Restrictions: (PHI 21 days) Make only 1 application during the dormant season. Do not allow meat or dairy animals to graze in treated orchards.

TREE NUTS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 2 days unless PPE required for early entry is worn.

(PHI 14 days) Use Gowan Chlorpyrifos 4E at the dosages indicated by application as a foliar spray to control pests listed in the following table. Mix the required dosage in sufficient water to ensure thorough and complete coverage of the foliage and crop and apply as a concentrate or dilute spray using conventional, power-operated spray equipment. For dilute sprays applied to tree nut crops, mix the required dosage in sufficient water to allow for spray to runoff. For concentrate sprays, apply an equivalent amount of Gowan Chlorpyrifos 4E per acre. Treat when pests appear or in accordance with local conditions. Insect control by aerial application may be less than control by ground application because of less coverage. Consult your State Agricultural Experiment Station, certified Pest Control Advisor, or Extension Service Specialist for specific use information in your area. Do not apply more than 4 lbs ai/A per season.

Almonds, Filberts, Walnuts Use Gowan Chlorpyrifos 4E at the rates indicated to control the listed pests.

Crop	Insects Controlled	Dosage Gowan Chlorpyrifos 4E	Restrictions
Almonds	Navel orangeworm Peach twig borer San Jose scale	4 pt/acre	Make no more than 3 foliar applications per season on almonds and filberts and no more than 2 applications per season on walnuts. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated orchards.
Filberts	Eye spotted bud moth Filbert aphid Filbert leafroller Filbert worm Oblique-banded leafroller Omnivorous leaflier Winter moth	3 - 4 pt/acre	
Walnuts	Codling moth Walnut husk fly Walnut scale	4 pt/acre	

PECANS: Use Gowan Chlorpyrifos 4E at the rates indicated to control the listed pests.

Insects Controlled	Dosage of Gowan Chlorpyrifos 4E (dilute or Concentrate)	Remarks and Restrictions
Spittlebugs	1 - 4 pt/acre	Make no more than 5 applications per year. Do not apply within 28 days of harvest. Do not allow livestock to graze in treated orchards. Make no applications of tank mixtures closer to harvest than the longest pre harvest interval shown for any of the products in the tank mixture. For dilute applications with ground equipment use at least the minimum rate of Gowan Chlorpyrifos 4E listed for the pest. Apply in 100 to 600 gallons of water per acre. For aerial applications use 5 to 15 gallons of water per acre. Note: with aerial application control may be reduced due to poor coverage. Up to 10 pints of Gowan Chlorpyrifos 4E may be applied per acre per year.
Pecan nut casebearer all webworm	1 1/2 - 4 pt/acre	
Phylloxera spp. Black pecan aphid Hickory shuckworm Pecan leaf scorch mite (suppression) fire ants and other ant species	2 - 4 pt/acre	
Yellow pecan aphid Black margined aphid	1 - 4 pts of Gowan Chlorpyrifos 4E plus: 5.33 fl oz of Pydrin 2.4 E, or 1.70 fl oz of Asana 1.9 EC, or 3.0 fl oz of Ammo 2.5 EC, or 2.56 fl oz of Cymbush 3E	
<p>Use a dosage of 2 to 4 pints per acre for concentrate sprays. For best Phylloxera spp. Control, make 2 applications at a 7 - 10 day interval using a minimum of 1.0 pint of Gowan Chlorpyrifos 4E per acre starting at bud swell. For best results make 2 applications, 10 to 14 days apart. To suppress pecan leaf scorch mite, use a preventative program. For ant control, apply as an orchard floor spray. Do not apply where weed growth or other obstructions prevent uniform coverage of the orchard floor.</p>		

ALMOND AND WALNUT ORCHARD FLOORS: Worker Restricted Entry Interval: Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 2 days unless PPE required for early entry is worn.

Use Gowan Chlorpyrifos 4E to control Southern fire ant and pavement ant by applying the specified dose with ground application equipment that will uniformly apply the spray to the orchard floor. Use when ant activity becomes evident within the orchard. Since worker ants cease most of their foraging activity at temperatures above 90°F, best results will be achieved with applications made at temperatures below 90°F at the time of application. Gowan Chlorpyrifos 4E may also be applied to almond and walnut orchard floors through sprinkler irrigation systems only if the system uniformly covers the soil surface. Dosage of Gowan Chlorpyrifos 4E and spray volume may vary depending on the irrigation method employed in the orchard as follows:

Ant Control in Sprinkler- or Drip-Irrigated Orchards

Apply Gowan Chlorpyrifos 4E as a broadcast spray to the entire orchard floor using ground spray equipment at 4 to 8 pints per acre in 25 or more gallons of water. Use the high rate for heavy infestations and the low rate for light infestations. In orchards where ant activity is concentrated around the irrigation emitters, apply the high rate to a 6- to 8-foot band along the drip irrigation line and the low rate to the rest of the orchard.

Sprinkler Irrigation Application Gowan Chlorpyrifos 4E may be applied to the orchard floor through sprinkler irrigation systems at 4 to 8 pints of Gowan Chlorpyrifos 4E per acre. For best results, use the high rate for heavy infestations and the low rate for light infestations. See Sprinkler Irrigation instructions in the General Information section of this label.

Ant Control in Flood-Irrigated Orchards

Apply Gowan Chlorpyrifos 4E at 4 to 8 pints per acre in 25 or more gallons of water to the entire orchard floor using ground spray equipment. Apply the high rate to heavily infested areas and the low rate to lightly infested areas. Where ant colonies are abundant only in the berm areas, apply Gowan Chlorpyrifos 4E at 8 pints per treated acre in 50 or more gallons of water to a 6- to 10-foot band along the tree line (berm).

Do not apply where weed growth or other obstructions would impede uniform coverage of the orchard floor. Mow or chemically control weeds before the application of Gowan Chlorpyrifos 4E. Foliar applications of Gowan Chlorpyrifos 4E may be made in addition to the orchard floor treatment.

Restrictions: Do not apply more than 16 pints of Gowan Chlorpyrifos 4E per year to the orchard floor. Do not make more than 2 applications per season. Do not apply more than 1 lbs ai/acre per season. Do not apply the last treatment within 14 days of harvest. Do not allow livestock to graze in treated orchards.

VEGETABLES: Use Gowan Chlorpyrifos 4E at the dosages indicated to control the pests listed in the following table. To avoid phytotoxicity in vegetables, except Brussels sprouts, do not mix with other pesticide products or treat plants that are under extreme heat and drought stress.

Crop	Insects Controlled	Dosage Gowan Chlorpyrifos 4E	Use Directions	Restrictions
Cauliflower (PHI 21-30 days)	Root maggot	1.6 - 2.4 fl oz/ 1,000 linear ft of row	For direct seeded crops apply the specified dosage in a water based spray as a 4 inch wide band over the row at planting time. Shallow incorporation is necessary. Placement behind the planter shoe and in front of the presswheel is recommended.	Do not apply more than 2 pints of Gowan Chlorpyrifos 4E to cauliflower planted in 40 inch rows. Use proportional amounts for other row spacings not to exceed 4 pints of Gowan Chlorpyrifos 4E per acre.
Broccoli Brussels spouts Cabbage Chinese cabbage Collards Kale Kohlrabi Turnips	Root maggot	1.6 - 2.75 fl oz/1,000 linear ft of row	For transplanted crops , apply Gowan Chlorpyrifos 4E as a water based spray directed to the base of the plants immediately after setting. Use a minimum of 40 gallons of total spray per acre. Do not add any additional adjuvants, surfactants or spreader stickers. Do not apply as a foliage application.	Do not apply more than 2.6 pints of Gowan Chlorpyrifos 4E per acre to broccoli, Brussels, sprouts, cabbage, Chinese cabbage, collards, kale, kohlrabi, and turnips planted in 40-inch rows. Do not apply more than 4 ½ pints of Gowan Chlorpyrifos 4E per acre to these crops in 20 inch rows (or 2 rows per be). Use proportional amounts for other row spacings not to exceed 4 ½ pints of Gowan Chlorpyrifos 4E per acre.
Broccoli Cabbage	Root aphid	1.2 fl oz/1,000 linear ft of row for single row plantings, and 2.4 fl. oz/1,000 linear ft of row for double row plantings.	Apply Gowan Chlorpyrifos 4E in a water emulsions or with liquid fertilizer injected as a sidedress on each side of the row after plants are established. Avoid mechanical damage to crop roots. Use a minimum of 15 gallons of total spray volume per acre.	Do not make more than 1 application per season or apply within 30 days before harvest.
Brussels sprouts	Amyworms Cabbage aphid Cutworms Imported cabbage worm Striped flea beetle (adult)	1 - 2 pt/acre	Apply Gowan Chlorpyrifos 4E with conventional power operated spray equipment in 20 to 150 gallons of water per acre. Apply when insects appear on foliage and at 7 to 14 day intervals thereafter as needed. Consult your state agricultural experiment station, extension service specialist, or integrated pest control advisor for proper time to treat in your area.	Do not make more than 6 applications per season. Do not apply within 21 days before harvest.

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Crop	Insects Controlled	Dosage Gowan Chlorpyrifos 4E	Use Directions	Restrictions
Radishes	Root maggot	1.0 fl oz/ 1,000 linear ft of row	Apply the specified dosage as a water based drench in the seed furrows with the seed at planting time. Use a minimum of 40 gallons of total drench per acre.	Do not apply more than 5 1/2 pints of Gowan Chlorpyrifos 4E per acre or make more than 1 application per season.
Rutabagas	Root maggot	1.6 - 3.3 fl oz/ 1,000 linear ft of row	Apply the specified dosage in a water based spray as a 4 inch wide band over the row at planting time, behind the planter shoe and in front of the press wheel to achieve shallow incorporation. Use a minimum of 40 gallons of total spray volume per acre.	Do not apply more than 4 1/2 pints of Gowan Chlorpyrifos 4E per acre or make more than 1 application per season. Do not use rutabaga tops for food or feed purposes.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 100°F for extended periods of time. Storage below 20°F may result in formation of crystals. If product crystallizes, store at 50° to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

Pesticide Disposal: Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Disposal for Non-Refillable Containers: 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. (OR) Triple rinse (or equivalent). Then puncture and dispose in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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 material.

Gowan Chlorpyrifos 4E
EPA Text Pending
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