

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



OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

June 29, 2006

Mr. Bill Washburn  
Micro Flo Company, LLC  
P.O. Box 772099  
Memphis, TN 38117-2099

Dear Mr. Washburn:

Subject: Submission of amended labeling to address copyright infringement issues  
Chlorpyrifos 4# AG  
EPA Registration No. 51036-291  
Your submission dated June 20, 2005

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable, provided that all of the following provisions are met:

1. Page 10: In the "Restrictions" paragraph under the Asparagus section, the sentence currently reading, "apply no earlier than one day after harvest," must be changed to, "Apply no **later** than one day **before** harvest."
2. Page 11: In the second paragraph of the Citrus Fruits section, the sentence currently reading, "...a petroleum spray oil safe for use on..." must be changed to, "...a petroleum spray oil **approved** for use on..."
3. Page 14: In the "Restrictions" paragraph under the Cranberries section, the sentence currently reading, "Do not apply sooner than 60 days before harvest," must be changed to, "**Apply no later than** 60 days before harvest."
4. Page 16: In the paragraph before "Restrictions," the sentence reading "Apply at the time of the second instar larvae," must be changed to read, "Apply **when** the second instar larvae **appear**."
5. Page 19: In the "Restrictions" paragraph under the Cotton section, the sentence currently reading, "Apply no later than 14 days before harvest no apply more than three times per season," must be changed to two sentences reading, "Apply no later than 14 days before harvest. **Do not apply** more than three times per season."

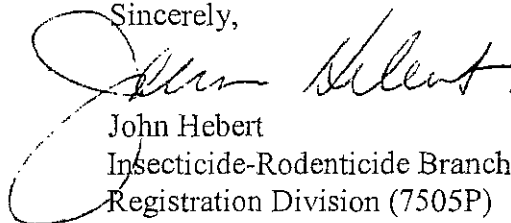
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6. Page 19: In the "Restrictions" paragraph under the Figs section, the sentence currently reading, "Apply no later than 7 months of harvest," must be changed to read, "Apply no later than 7 months **before** harvest."
7. Page 19: In the "Restrictions" paragraph under the Grapes section, the sentence currently reading, "Do not apply within 35 days of harvest," must be changed to read, "**Apply no later than 35 days before** harvest."
8. Page 22: In the "Restrictions" paragraph under the Soybeans section, the sentence currently reading, "The last treatment should not be applied 28 days or less before harvest nor apply last two treatments closer than 14 days apart," must be changed to two sentences reading: "The last treatment **must not be applied 28 days or less before** harvest. Do not apply last two treatments closer than 14 days apart."
9. Page 23: In the "Restrictions" paragraph under the Strawberries section, the sentence currently reading, "...and do not apply within 21 days of harvest," must be changed to read, "...and **apply no later than 21 days before** harvest."
10. Page 28: In the "Restrictions" paragraph under the Almond Orchard Floors section, the sentence currently reading, "Apply the final treatment no later than 14 days of harvest," must be changed to read, "Apply the final treatment no later than 14 days **before** harvest."
11. Page 30: In the table under the Vegetables section, under the "Restrictions" box for brussels sprouts, the sentence currently reading, "Apply at least 21 days after harvest," must be changed to read, "**Apply no later than 21 days before** harvest."
12. Page 31: In the "Ground Application" paragraph under the Wheat section, the typo "...boom pressures greater tan..." should be corrected to "...boom pressures greater **than**...."

**These required provisions are necessary in order to clarify your label use directions and ensure proper application of the product.**

A stamped copy is enclosed for your records. Please submit two (2) final printed copies for the referenced label, incorporating the above changes, before releasing the product for shipment. If you have any questions regarding this letter, please contact me at (703) 308-6249 or [hebert.john@epa.gov](mailto:hebert.john@epa.gov).

Sincerely,

  
John Hebert  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

Enclosure

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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.

**CHLORPYRIFOS 4# AG**

For the control of assorted pests infesting particular field, fruit, nut, and vegetable crops

**ACTIVE INGREDIENT:**

Chlorpyrifos O,O-diethyl- O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate ..... 44.7%

**INERT INGREDIENTS\*:** ..... 55.3%

**TOTAL** ..... 100.0%

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:  
JUN 29 2006**

Contains 4 pounds of chlorpyrifos per gallon.

\*Contains aromatic petroleum distillates

**KEEP OUT OF REACH OF CHILDREN**

**WARNING      AVISO**

**Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
51036-291**

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

**FIRST AID**

Organophosphate

If Swallowed: Do not induce vomiting. Contains aromatic petroleum solvent. Call a physician or Poison Control Center immediately.

If In Eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.

If On Skin: Wash with plenty of soap and water. Get medical attention.

If Inhaled: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

**PHYSICIAN TREATMENT:** Chlorpyrifos is a cholinesterase inhibitor. Treat poisoning symptomatically. Baseline data are useful in detecting the level of exposure. Certain tests, such as plasma and red blood cell cholinesterase, may detect exposure level. Preferred antidote post exposure is Atropine, by injection only. If detected early, treat with 2 PAM/protopam or other Oximes in conjunction with atropine. Use recommended antidote immediately after establishing an open airway and respiration in the event of serious acute poisoning.

EPA Reg. No. 51036-291

EPA Est. No. 51036-GA-01

AD xxxxxx

NET CONTENTS: \_\_\_\_\_

**Manufactured By:  
MICRO FLO COMPANY LLC  
P.O. BOX 772099  
MEMPHIS, TN 38117**

**PRECAUTIONARY STATEMENTS**  
**Hazard to Humans and Domestic Animals**

**WARNING**

May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Causes eye irritation. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

**EMERGENCY TELEPHONE NUMBERS:** Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact:

(800) 424-9300                      CHEMTREC (transportation and spills)  
(800) 832-HELP (4357) Human Health  
(800) 345-4735                      ASPCA (animal health)

**PERSONAL PROTECTIVE EQUIPMENT**

Some materials that are chemical-resistant to this product are barrier laminates and Viton. If you want more options, follow the instructions for category H on an EPA chemical resistance category selection chart.

Mixers and loaders using a mechanical transfer loading system and applicators using aerial application equipment must wear:

- long sleeved shirt and long pants;
- socks and shoes

In addition to the above, mixers and loaders using a mechanical transfer loading system must wear:

- chemical resistant gloves;
- chemical resistant apron;
- a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator any R, P, or HE filter.

See engineering controls for additional requirements.

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

1. Coveralls over long sleeved shirt and long pants
2. Chemical-resistant gloves
3. Chemical-resistant apron when mixing or loading or exposed to the concentrate.
4. Chemical-resistant footwear plus socks
5. Chemical-resistant headgear for overhead exposure
6. A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator any 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 and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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### 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

### ENGINEERING CONTROLS

Mixers and loaders supporting aerial applications must use a mechanical transfer system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] for dermal protection, and must:

**wear the personal protective equipment required above for mixers/loaders,**

wear protective eyewear if the system operates under pressure, and

-be provided and have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown: coveralls, chemical resistant footwear and chemical resistant headgear if overhead exposure.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

Use of human flaggers is prohibited. Instead, use mechanical flagging equipment.

When handlers use 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.

### 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 weed is bees are visiting the treatment area.

### PHYSICAL OR CHEMICAL HAZARDS

Combustible. 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 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.

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**Preharvest interval restrictions:**

Crop	PHI*
Alfalfa	7 at rates $\leq 0.25$ lb. ai/A
	14 at rates $\leq 0.50$ lb. ai/A
	21 at rates $> 0.50$ lb. ai/A
Asparagus	1
Broccoli	30
Brussels Sprouts	21
Cabbage	30
Cauliflower	30
Cherries	6
Chinese Cabbage	30
Citrus Fruits	21 at rates $\leq 3.5$ lb. ai/A
	35 at rates $> 3.5$ lb. ai/A
Collards	30
Cotton	14
Cranberries	60
Field Corn, Sweet Corn (including corn grown for seed)	14 - corn silage
	35 - corn grain and corn fodder
Figs	210
Grapes	35
Kale	30
Kohlrabi	30
Mint	90
Nectarines, Peaches	14
Peanuts	21
Sorghum, Grain Sorghum	30 at rates $\leq 0.25$ lb. ai/A
	60 at rates $> 0.25$ lb. ai/A
Soybeans	28
Strawberries	21
Sugar Beets	30
Sunflowers	42
Sweet Corn (grown only in Florida and Georgia)	21
Sweet Potatoes	125
Tree Fruits	
Tree Nuts (Almonds, Filberts, Walnuts)	14
Tree Nuts (Pecans)	28
Turnips	30
Wheat	28

\*PHI = Pre-Harvest Interval or the number of days to wait between the last application and harvest.

Aerial application to peanuts is prohibited.

Read all Directions for Use carefully before applying.

### 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 intervals. 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 direction for use associated with each crop. REIs for all crops except those listed below is 24 hours:

Cauliflower: 3 days

Citrus trees: 5 days

Fruit trees: 4 days

Certified crop advisors or persons entering fields 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:

1. Coveralls over short sleeved shirt and short pants
2. Chemical-resistant gloves made out of any waterproof material
3. Chemical-resistant footwear plus socks
4. Chemical-resistant headgear for overhead exposure

Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas.

### STORAGE AND DISPOSAL

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

**Storage:** Keep in original container in dry secured storage space. Do not permit contact with other pesticides and fertilizers. Do not store above 100°F for long periods of time. Crystals may form if stored below 20°F. If crystals form, store at 50° - 70°F and agitate to allow crystals to redissolve. Use product immediately, or dispose of it with the container in the manner prescribed below in the event that the container is damaged or a spill occurs.

**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 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.

#### Disposal of Refillable Containers:

Change the dry disconnect cap, if applicable, and close every opening which has been opened during use.

Return the empty container to a Micro Flo designated repository site. For proper handling instructions in the event that the container has been damaged and cannot be returned safely in accordance to the advised procedures, call the Micro Flo Customer Service Center at 1-800-451-8461.

**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.

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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.

### GENERAL INFORMATION

Chlorpyrifos 4# AG insecticide forms an emulsion when diluted with water and is suitable for use in all conventional spray equipment. Consult your state experiment station or state extension service for proper timing of applications.

### GENERAL USE PRECAUTIONS

Do not use on turf (other than sod farms) or for structural pest control. Do not formulate this product into other end use products.

Attention: Do Not Cut or Weld Container.

### 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 fishponds. 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 fine or coarser spray according to ASAE 572 definition for standard nozzles 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 fishponds. 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 fishponds. 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 fine or coarser spray according to ASAE 572 definition for standard nozzles or 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 or the crop canopy.

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

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

### MIXING DIRECTIONS

To prepare the spray, add some of the required water to the spray tank, agitate, and then add the Chlorpyrifos 4# AG. Continue to fill the tank with the remaining water needed. Continue with enough agitation during mixing and application to ensure consistency of the spray mixture.

Chlorpyrifos 4# AG may also be used in tank mixtures with certain herbicides and/or with non-pressure fertilizer solutions as recommended under specific crop use directions. To prepare tank mixtures, mix in



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the same way as if preparing just the Chlorpyrifos 4# AG, as described above. If using tank mixtures of Chlorpyrifos 4# AG and herbicides, add the following products in this order: wettable powders, flowables and emulsifiable concentrates. If using a fertilizer solution, a fertilizer pesticide compatibility agent, like Unite or Compex, is highly recommended. Continue with enough agitation during mixing and application to ensure consistency of the spray mixture. Do not let the spray mixtures stand overnight.

Note: Before adding Chlorpyrifos 4# AG to the spray or mix tank, test its compatibility with the designated tank mixture. Add equal amounts of each product to a pint or quart jar, then cap, shake, and allow it to stand for 15 minutes. Do not use if precipitates form and do not readily redisperse. This is an indication that the mixture is not compatible and therefore should not be used.

### SPRINKLER IRRIGATION

Chlorpyrifos 4# AG may be applied by sprinkler irrigation for the following crop uses: alfalfa, citrus orchard floors, field corn, mint, sweet corn, cotton, cranberries, sorghum, soybeans, and sod farm turf.

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. Do not apply this product by chemigation to any other crop.

### SPECIAL USE DIRECTIONS

If using Chlorpyrifos 4# AG through sprinkler irrigation systems, first clean the injection system and tank of all fertilizer or chemical residue. Dispose of the residue in accordance with applicable state and federal laws. Next, thoroughly wash out the injector with soap and water. Determine how much insecticide is needed to cover the desired acreage. Pump the required Chlorpyrifos 4# AG into a steel tank, start mechanical or hydraulic agitation, and add in order the non-emulsifiable oil and/or water. Continually agitate the mixture containing Chlorpyrifos 4# AG. Position the sprinkler system to disperse the desired amount of water per acre. Turn on the water pump and sprinkler, allowing the system to reach the desired pressure and speed before starting the injector. Start the injector and calibrate the injector system following the instructions in #14 in the "Special Use Precautions" section. While the sprinkler is moving, inject the Chlorpyrifos 4# AG mixture continuously and uniformly into the irrigation water line. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

### SPECIAL USE PRECAUTIONS

Follow the precautions below in order to apply Chlorpyrifos 4# AG mixtures safely and effectively:

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, micro sprinkler, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.
5. 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.

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6. 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. Refer to the American Society of Agricultural Engineer's Engineering Practice 409 for more information.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. 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.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. 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.
11. 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. The metering pump must provide a greater pressure than that of the irrigation system at the point of injection. The pump must meet Section 675 for "Electrically Driven or Controlled Irrigation Machines" NEC 70 and must contain Viton or Teflon seals.
12. To make sure that the insecticide is mixed uniformly into the water line, inject the mixture either (a) through a nozzle place in the fertilizer injection port or (b) just in front of an elbow or tee in the irrigation line so that the turbulence created at those points will aid in mixing. Prevent siphoning by selecting an injection point that is higher than the insecticide tank.
13. Make sure the steel tank containing the insecticide mixture is large enough for the system to complete a revolution in a single filling. Keep the tank free of rust, fertilizer, sediment and foreign material, and outfitted with an in-line strainer positioned between the tank and the injector pump.
14. To calibrate the irrigation system and injector for application of the Chlorpyrifos 4# AG mixture:
  - (1) calculate the number of acres irrigated by the system
  - (2) set the rate of irrigation and determine the amount of minutes for the system to cover the desired area to be treated
  - (3) determine the total gallons of insecticide mixture needed to cover the desired acreage. To do this, divide the total gallons of insecticide mixture needed by the number of minutes required to cover the treatment area. This figure is equivalent to the gallons per minute output that the injector must deliver. Convert the gallons per minute to milliliters or ounces per minute. Calibrate the injector pump with the system in operation at the desired irrigation rate. Calibrating the injector pump at least twice before operation and monitoring the system during operation are recommended.
15. Do not apply when wind speed favors drift beyond the area intended for treatment. Turn off end guns during application if they irritate nontarget areas.
16. Keep irrigation water from accumulating or running-off and posing danger to livestock, wells, or adjoining crops.
17. Allow foliage to dry before reentering the field.
18. Because sprinkler systems such as certain water drive units deliver a low coefficient of uniformity, do not apply through such systems.

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## APPROVED CROPS

### ALFALFA

Use Chlorpyrifos 4# AG to control the following pests at the dosages indicated by application as a broadcast, foliar spray:

PESTS	Chlorpyrifos 4# AG
Aphids (suppression)	1/2 pint/acre
Corn rootworm adults (spotted cucumber beetle)	1/2 - 1 pint/acre
Grasshoppers	
Alfalfa blotch leafminer	1 - 2 pints/acre
Alfalfa caterpillar	
Alfalfa weevil larvae and adults	
Armyworms	
Blue alfalfa aphid	
Cutworms	
Egyptian alfalfa weevil larvae and adults	
Pea aphid	
Plant Bugs	
Leafhoppers	
Spittlebugs	

Note: Use the higher rates to control spotted alfalfa aphid in California and Nevada. Stubble spray may be applied to control leafhopper in the Northeast.

Mix the required dosage with enough water to ensure thorough coverage of crop foliage and apply using aerial (fixed-wing or helicopter) or power-operated ground spray equipment. For aerial application use 2 to 5 gallons of water per acre. For best coverage when using ground application, a minimum of 20 gallons of water per acre with hollow cone nozzles is recommended. Control may be reduced at low spray volumes under high temperature and wind conditions. Treat when field counts or crop injury indicates that damaging pest populations are developing or present; however, do not apply more than once per crop cutting. In extremely cool conditions, there may be some reduction in insect control. To control Egyptian alfalfa weevils in California, apply the specified amount of treatment in at least 5 gallons of water per acre when larvae are actively feeding and populations reach 15 to 20 larvae per 180° sweep with a 15-inch diameter net.

Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

Do not tank mix Chlorpyrifos 4# AG with pesticides, surfactants, or fertilizer formulations unless prior use has demonstrated that the combination will not cause injury under present use conditions. On young, tender rapidly growing alfalfa, some phytotoxic symptoms may develop when Chlorpyrifos 4# AG is applied. Alfalfa will survive these symptoms and yield loss is not expected.

This product is highly toxic to bees exposed to direct treatment on alfalfa. Do not apply if nearby bees are clustered outside of hives and bees are foraging. Protective information may be obtained from your agricultural extension service.

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**RESTRICTIONS:** Do not cut or graze treated alfalfa for 7 days after applying 1/2 pint of pesticide per acre. Do not cut or graze treated alfalfa for 14 days after applying 1 pint of pesticide per acre. Do not cut or graze treated alfalfa for 21 days after applying pesticide at any rate over 1 pint per acre. Do not make more than 4 applications per year or apply more than once per crop cutting. REI for Alfalfa is 24 hours.

### ASPARAGUS

Use Chlorpyrifos 4# AG 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. To control cutworms, applying Chlorpyrifos 4# AG when the soil is moist and worms are active on or near the soil surface is recommended. To control asparagus beetles and asparagus aphids, apply Chlorpyrifos 4# AG during the fern stage when field counts or crop injury show the appearance or development of damaging pest populations.

**RESTRICTIONS:** Make only one preharvest application per season. Apply no earlier than one day after harvest. Make no more than two postharvest applications during the fern stage. Based on available residue data, the use of Chlorpyrifos 4# AG on asparagus is limited to the Midwest and Pacific Northwest.

### CHERRIES

Use Chlorpyrifos 4# AG for the control of lesser peach tree borer, greater peach tree borer, and American plum borer by application as a trunk spray. Mix 1 1/2 to 3 quarts of Chlorpyrifos 4# AG 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 two weeks after the first one and a third application after harvest. To prevent premature leaf drop, avoid contact with foliage in sweet cherries. To determine the proper time to treat in a given area, contact the local state agricultural experiment station or extension service specialist.

In addition, one of the three 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 1/2 to 1 pint of Chlorpyrifos 4# AG with 1 to 2 gallons of a petroleum oil recommended for dormant use in 100 gallons of water and spray the entire tree until runoff, using ground spray equipment. For low volume (concentrate) sprays (40 to 100 gallons of spray mixture per acre) use the same amounts of Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG for severe infestations. Use oil as recommended by your state agricultural experiment station or extension service specialist.

**RESTRICTIONS:** Make only three applications per year. Apply no later than 6 days before harvest. Prevent meat or dairy animals from grazing in treated orchards. REI interval is 4 days.

### CHRISTMAS TREES (NURSERIES AND PLANTATIONS)

Use Chlorpyrifos 4# AG at the rate indicated to control the following insects on the tree varieties listed.

TREE VARIETY	INSECTS CONTROLLED	DOSAGE CHLORPYRIFOS 4# AG	REMARKS
Balsam fir Blue spruce Concolor fir Douglas fir Eastern white pine	Adegids (Cooley) (Eastern spruce gall) Ants Aphids European pine sawfly European pine shoot moth	1 qt/acre	Do not treat plants under extreme heat and drought stress.  Apply to foliage in sufficient water to ensure adequate

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Fraser fir Grand fir Noble fir Scotch pine White spruce	Grasshopper Gypsy moth Mites (European red spider) (Two spotted spider) [except in WA & OR] Pales weevils (adult) Pine needle midges Pine spittlebugs Plant bugs Spittlebugs Spruce budworms Spruce needleminers Scale (Black pine) (pine needle) (pine tortoise) (Spruce bud) (Striped pine)		coverage.  <sup>1</sup> For effective control of adult spider mites if large numbers of eggs are present, apply a second spray 7-10 days after initial treatment to control newly hatched nymphs.  <sup>2</sup> To control scale insects, apply when crawlers are active.
	Pales weevil	3 qt/100 gal	Use as a cut stump drench

**RESTRICTIONS:** Use Chlorpyrifos 4# AG on tree plantations only in Connecticut, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, Washington, and Wisconsin. Do not allow livestock to graze in treated areas. REI is 24 hours.

#### CITRUS FRUITS

Use Chlorpyrifos 4# AG 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.

To better control aphids, mealybugs, scale insects and thrips, a petroleum spray oil safe for use on citrus trees may be added to dilute spray mixtures, up to 1.8 gallons per 100 gallons of water. Apply treatment when insects become a nuisance or in accordance with local spray schedules given by the state extension service specialist.

Chlorpyrifos 4# AG may be applied in tank mixtures with ethion, dicofol, Agri-Mek or Vendex. See "Mixing Directions" for further instructions. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for the other products used in combination with Chlorpyrifos 4# AG.

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

If trees are stressed by drought or high temperatures, do not apply.

Chlorpyrifos 4# AG should not be tank mixed with Difolatan 80 Sprills as crop injury may occur.

Chlorpyrifos 4# AG is highly toxic to bees exposed to direct treatment and should not be applied when bees are actively visiting the area. During blooming time in California, apply between one hour after sunset and two hours before sunrise.

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RESTRICTIONS: Do not apply more than 2 applications per acre per year. Do not apply more than 4-lbs. ai/A per single application, except in Fresno, Tulare, Kern, Kings and Madera Counties, in California, where it may be applied at 6 lb. ai/A for control of red scale by ground application. Make a second foliar application no earlier than 30 days after the first application. Do not treat until 21 days after harvest for applications up to 7 pints of Chlorpyrifos 4# AG per acre or until 35 days after application for rates above 7 pints per acre. Do not do any work involving contact with trees within 2 days after treatment. Prevent farm animals from grazing in treated areas. REI is 5 days.

## CITRUS FRUIT

CROP	GEOGRAPHIC LOCATION	PEST	DOSAGE OF Chlorpyrifos 4# AG PT/ACRE	SPRAY VOLUME GAL ACRE	REMARKS
Grapefruit Lemons Oranges and Other Citrus Fruit	California Arizona	Aphids Avocado leafroller Cutworms Fruit tree leafroller Katydid Lepidopterous larvae Orange tortrix Western tussock moth	2-7	ground: 100-750  aerial: min 15	Do not use a spray concentration of Chlorpyrifos 4# AG of less than 1/2 pt/100 gal of total volume.
		Scale insects Black scale Brown soft scale California red scale	8-12	100-2400	
		Thrips (suppression) Mealy bugs	6-8	100-750	
		**			
	Florida	Aphids Grasshoppers Mealy bugs Orange dogs Scale insects: Black scale Brown soft scale Chaff scale Florida red scale Long scale Purple scale Snow scale	2-7	ground: 100-1400  aerial: min 20	Do not use a spray concentrate of Chlorpyrifos 4# AG of less than 1/2 pt/100 gal of water per acre.
		Citrus rust mites	4-7	100-700	
					Do not use a spray concentration of Chlorpyrifos 4# AG of less than 1 pt/100 gal of water per acre.

CROP	GEOGRAPHIC LOCATION	PEST	DOSAGE OF Chlorpyrifos 4# AG PT/ACRE	SPRAY VOLUME GAL ACRE	REMARKS
		***			
Grapefruit Lemons Oranges and Other Citrus Fruit, cont'd	Texas	Aphids Cutworms Katydid Mealy bugs Scale insects: Brown soft scale California red scale Chaff scale	4-7	200-700	Do not use less than 1/2 pt of Chlorpyrifos 4# AG per 100 gallons of water in dilute applications
		Citrus rust mites (suppression)	4-7	200-700	
Small Trans-planted Grapefruit, Orange and other Citrus Trees	Texas	Aphids Cutworms Katydid Mealy bugs Scale Insects: Brown soft scale California red scale Chaff scale	Max. of 7		Apply Chlorpyrifos 4# AG at a rate of 1 fl oz/1 gal of water with a backpack sprayer. Apply to runoff.

\*\* Additional safety warning for Arizona and California: Do not use Chlorpyrifos 4# AG with spray oil when temperatures exceed 95°F the day of application or for several consecutive days thereafter.

Do not apply during the months of December, January or February.

\*\*\* Lubber grasshoppers must be controlled when they are smaller than 1 inch long by spraying them directly.

#### CITRUS ORCHARD FLOORS

Use Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG to the orchard floor at the rate of 3/4 to 1 quart per acre. Retreat 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. Do not apply in tank mixtures with Evik herbicide. Foliar applications of Chlorpyrifos 4# AG may be made in addition to the orchard floor treatments.

Chlorpyrifos 4# AG can be applied to citrus orchard floors through a sprinkler irrigation system only if the irrigation system can uniformly cover the soil surface at the foot of the tree. For best results, use the recommended amount of Chlorpyrifos 4# AG per acre. See "Sprinkler Irrigation" section for further information.

**RESTRICTIONS:** Apply a maximum of 6 pints of Chlorpyrifos 4# AG per acre per season. Do not make final treatment within 28 days before harvest. Prevent livestock from grazing in treated areas. REI is 24 hours.

#### CRANBERRIES

Use Chlorpyrifos 4# AG 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. To control weevils, apply one time at flower bud development (late May or early June). If weevils are present, apply one time after complete bloom (early to mid July). For other types of insects, apply when field counts show the appearance or development of damage-causing insect populations. Only treat after the winter flood has been removed. Do not apply while bogs are flooded, to prevent pesticide contamination of flood water.

Chlorpyrifos 4# AG may also be applied through sprinkler irrigation systems to control the insects listed above. For best results, use the recommended rate of Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

**RESTRICTIONS:** *Do not apply more than twice per year. Do not apply sooner than 60 days before harvest.*

#### **FIELD CORN, 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.

#### **Preplant Incorporation Treatment:**

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

PESTS	Chlorpyrifos 4# AG
Cutworms, symphylans	2-4 pints/acre
Wireworms, billbugs, flea beetle larvae, grubs, seed corn maggots, seed corn beetle	4 pints/acre
Lesser cornstalk borer, corn rootworm larvae	6 pints/acre

Use recommended rate in not less than 10 gallons of water per acre and apply as a broadcast spray to the top of the soil using appropriate power-operated ground spray equipment. Incorporate treatment into the top 2 to 4 inches of soil using appropriate equipment (such as a disc, field cultivator, etc.) on the same day of treatment.

Chlorpyrifos 4# AG may also be applied in tank mixtures with non-pressure fertilizers and/or with Bladex, Eradicane, Sutan, Lasso, Dual, and atrazine herbicides. See "Mixing Directions" section for further information. Review all applicable directions, restrictions, and precautions on the labels for the other products being used with Chlorpyrifos 4# AG and follow them accordingly.

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

PESTS	Chlorpyrifos 4# AG
Armyworms	1-2 pints/acre
Cutworms	

Use recommended rate in not less than 20 gallons of water per acre. Apply as a broadcast spray with appropriate power-operated ground spray equipment. Use higher rates for residual control.



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Chlorpyrifos 4# AG can also be used in tank mixtures containing non-pressure fertilizer solutions and/or with paraquat and Roundup. See "Mixing Directions" section for further information. Review all applicable directions, restrictions, and precautions on the labels for the other products being used with Chlorpyrifos 4# AG and follow them accordingly.

**Cultivation Time Treatment:** Use Chlorpyrifos 4# AG at the rate of 2 pints per acre to control corn rootworm larvae. Apply Chlorpyrifos 4# AG as a water emulsion on both sides of the row at the foot of the plants just before the cultivator shovels. Use soil to cover the insecticide 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. An at-planting application of Chlorpyrifos 15G granular insecticide may be applied along with a cultivation application of Chlorpyrifos 4# AG.

**Postemergence Treatment:** Use Chlorpyrifos 4# AG at the following rate by application in sufficient water to ensure thorough coverage of treated plants:

PESTS	Chlorpyrifos 4# AG
Grasshoppers	1/2 - 1 pint/acre
Aphids Armyworms Chinch bugs Corn rootworm adults European corn borer (see note) Webworms Western bean cutworm	1 - 2 pints/acre
Corn earworm Southwestern corn borer	1 1/2 - 2 pints/acre
Billbugs Common stalk borer Cutworms Flea beetle adults Lesser cornstalk borer	2 - 3 pints/acre

Note: The treatment amount specified above will control silk clipping by corn rootworm adults. To control European corn borers, use 1 1/2 to 2 pints per acre when applying with power-operated ground and aerial equipment and 1 to 2 pints per acre when applying through a sprinkler irrigation system. See text below for generation specific treatment.

Treat when field counts indicate that pests are or may become a problem. For best results in controlling billbugs, chinch bugs, and flea beetles, apply with enough water to have at least a spray volume of 20 to 40 gallons per acre and 40 psi using ground spray equipment. On corn under 6 inches tall, apply the treatment spray in a band 9 to 12 inches wide over the row. On corn over 6 inches tall, apply the treatment spray by directing drop nozzles to the foot of the plant. Do not reduce the amount of treatment for banded or directed applications. Use the full labeled treatment amount in the treated area. A second application of Chlorpyrifos 4# AG may be needed if chinch bugs persist in migrating to corn over a prolonged period of time or under extreme pressure.

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. High temperature and wind

conditions may reduce control of these insects when low spray volumes are used.

To best control cutworms, apply Chlorpyrifos 4# AG when soil is moist and worms are active on or near the soil surface. Dry, cloddy or crusty ground at time of treatment may protect the worms from the spray and also diminish the efficacy of the product. In these conditions, shallow incorporation using a rotary hoe or other appropriate equipment immediately before or after treatment may improve results.

Apply as needed to maintain control. Use higher rate for larger worms or when heavy cutworm infestations are expected or present. Fields should be monitored for cutworm presence or damage. If damage or density levels exceed your area's determined economic thresholds, a second application of the product may be required. Consult your agricultural experiment station or extension service specialist for additional information concerning control practices in your area.

Shallow incorporation using a rotary hoe or other appropriate equipment right before or soon after treatment is needed to control webworms.

For first-generation European corn borer control, treat when 25 to 50 percent of the corn plants show pinhole feeding or leaf-feeding scars. For maximum control potential, ground applications of Chlorpyrifos 4# AG should be directed into the corn leaf whorls. Scout fields within 5 days after application to determine if a second application is needed. Having more than 50% control of first-generation European borers in a single liquid insecticide treatment is greatly dependent on timing, insecticide placement and weather conditions, according to University research. 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. To control common stalk borers, treat about 11 days after using Roundup herbicide or after complete burndown with paraquat herbicide (3 to 5 days). Further, do not use Chlorpyrifos 4# AG in combination with the burndown paraquat herbicide.

Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the Chlorpyrifos 4# AG plus oil mixture throughout the injection period. Chlorpyrifos 4# AG may also be applied through sprinkler irrigation systems at the rate of 2 to 3 pints per acre to control corn rootworm larvae. Apply at the time of the second instar larvae. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. Apply with sufficient water to wet the root zone as deep as control is needed. In conditions where the soil is saturated, allow the soil to dry enough so that an application using the minimum water amount 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" section for further information.

**RESTRICTIONS:** *Apply no later than 35 days before harvest of grain. Apply a maximum 15 pints of Chlorpyrifos 4# AG per acre per season. Maximum application rate of 1.0 lb ai/A. Maximum of 3 applications per season. Maximum amount of chlorpyrifos per season is 3 lbs. ai/acre/season. **Keep livestock from grazing in treated areas.** Do not harvest corn silage that has been treated as feed for meat or dairy animals within 14 days of last treatment. Do not feed treated corn fodder to meat or dairy animals within 35 days after last treatment. REI is 24 hours.*

#### **SWEET CORN (GROWN ONLY IN FLORIDA AND GEORGIA)**

Use Chlorpyrifos 4# AG to control infestations of beet armyworm, fall armyworm and corn earworm by

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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 indicated damaging pest populations are developing or present. Re-treat as necessary to maintain control but do not apply more than twenty-two 1-pint or eleven 2-pint treatments per season.

Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the Chlorpyrifos 4# AG plus oil mixture throughout the injection period. See "Sprinkler Irrigation" section for further information.

**RESTRICTIONS:** Do not apply more than 22 pints of Chlorpyrifos 4# AG per acre per season. Do not harvest corn ears, allow livestock to graze in treated areas, nor 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 Chlorpyrifos 15G. REI is 24 hours.

### COTTON

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

PESTS	Chlorpyrifos 4# AG
Cotton fleahopper	3/8 - 1 pint/acre
Plant bugs (Lygus, Mirids)	
Fall armyworm	1/2 - 1 pint/acre
Grasshopper	
Thrips	
Yellow-striped armyworm	
Cotton aphid	1/2 - 2 pints/acre
Spider mites	1 pint/acre
Beet armyworm	1 1/2 - 2 pints/acre
Cotton bollworm	
Cutworms	
Pink bollworm	
Salt marsh caterpillar	
Tobacco budworm	

Note: The recommended application amount of 3/8 pint per acre will reduce plant bug and cotton fleahopper damage and allow other needed insects to survive, build up, and aid in the control of bollworms infesting cotton. However, this application amount will not achieve the high level of control of the higher label application amount. For infestations of cotton aphids that are difficult to control, use a higher dosage within the indicated rate range.

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

PESTS	Chlorpyrifos 4# AG
Armyworms	
Cotton aphid	
Cotton fleahopper	
Lygus	
Salt marsh caterpillar	

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Thrips	1 - 2 pints/acre
Boll weevil	2 pints/acre
Cotton bollworm	
Cutworms	
Pink bollworm	
Tobacco budworm	

Note: The 2 pint rate will aid in the suppression of cotton leafperforator and spider mites.

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 the development or appearance of damage-causing insect populations. Re-treat as necessary to maintain control.

Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

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 control of bollworms and budworms, scout the field twice a week and apply treatments when worms are 1/4 inch or less in length for best results. The following table illustrates the size of worms in relation to age and stage of development (instar) as a guide to timing of treatments for best control.

From the table it can be seen that a scouting schedule of only once per week will not be satisfactory since the worms may be too big to control effectively by the seventh or eighth day.

TIMING FOR THE BEST WORM CONTROL			
Get the worms at this stage	Age (days)	Size (inches)	Instar
	Hatch	1/16	Hatch
	3	3/32	I
	5	9/32	II
	6	7/16	III
	8	11/16	IV
1/16"	(insert graphics)		
3/32"			
9/32"			
7/16"			
11/16"			

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 Chlorpyrifos 4# AG on cotton.

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#### 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 40-60 psi with a droplet size of 100-200 microns.

**RESTRICTIONS:** *Apply no later than 14 days before harvest no apply more than three times per season. Apply a maximum of 3 lbs. active ingredient per acre per season. Prevent livestock from grazing in treated areas. Gin trash or treated forage to must not be feed to livestock. REI is 24 hours.*

#### FIGS

Use Chlorpyrifos 4# AG at the rate of 2 quarts 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. Use as a latent application for fig orchard soil in late winter before beetle emergence and before leaf formation.

**RESTRICTIONS:** *Apply only once per year. Apply no later than 7 months of harvest. Based on available residue data, use of Chlorpyrifos 4# AG on figs is restricted to California. REI is 4 days.*

#### GRAPES

Use Chlorpyrifos 4# AG for control of grape root borer by applying right before the borers come up from the soil. Mix 4 1/2 pints of Chlorpyrifos 4# AG 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. Prevent spray from coming into contact with fruit or foliage.

**RESTRICTIONS:** *Apply only once per season. DO not apply within 35 days of harvest. Based upon available residue data, the use of Chlorpyrifos 4# AG in grapes is restricted to states east of the Rocky Mountains. REI is 24 hours.*

#### MINT

Use Chlorpyrifos 4# AG 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 the appearance or development of damage-causing insect populations. Use the 2 pint application amount when larvae are smaller than 3/4 inch long. When larvae are 3/4 inch or longer, use the higher application amount. Apply only once during growth season. Apply no later than 90 days before harvest. To control mint root borers, apply treatment after harvest

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when field counts indicate the appearance or development of damage-causing insect populations. Right after application, follow treatment with about 1 acre inch of sprinkler irrigation so that the product is incorporated into the soil. Apply only once per season after harvest.

Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

#### **NECTARINES, PEACHES**

Use Chlorpyrifos 4# AG for the control of peach tree borers by application as a trunk spray before newly hatched borers enter the trees. Mix 3 quarts of Chlorpyrifos 4# AG with 100 gallons of water and apply as a coarse, low-pressure spray to give uniform coverage of tree trunks. Wet all bark areas completely from the ground to scaffold limbs. Prevent the spray from coming into contact with fruit. To determine the proper time to treat in a given area, contact the local state agricultural experiment station or extension service specialist.

Chlorpyrifos 4# AG may also be used as a preplant dip application for non-bearing peach trees at the equivalent application rate of 3 quarts per 100 gallons of water for control of peach tree borer. Dip trees up to several inches above the grafting bud scar. Then, immediately plant the trees or let them dry if returning them to storage. Do not keep the peach trees in contact with the dip solution.

**RESTRICTIONS:** *Make only one application per season. Apply no later than 14 days before harvest. Prevent meat or dairy animals from grazing in treated orchards or other treated areas. REI is 4 days.*

#### **ONIONS (DRY BULB)**

Use Chlorpyrifos 4# AG to control onion maggot by application as an in-furrow drench. Apply Chlorpyrifos 4# AG at the rate of 1.1 fluid ounce per 1000 linear feet of row at an 18-inch row spacing. Use at least 40 gallons of total drench per acre. Incorporate 1 to 2 inches deep.

**RESTRICTIONS:** *Do not apply more than once per year. REI is 24 hours.*

#### **PEANUTS**

To suppress wireworms, apply Chlorpyrifos 4# AG to the soil surface in the amount of 4 pints per acre as a preplant broadcast spray. Immediately after, incorporate the soil 3 to 4 inches deep. Use at least 10 gallons of total spray per acre.

**RESTRICTIONS:**

*Do not exceed a combined total preplant and postplant application of 4 pounds of active ingredient of Chlorpyrifos 4# AG and Chlorpyrifos 15G per acre per season. Do not apply more than once per season. Harvest no earlier than 21 days after treatment. Do not allow meat or dairy animals to feed from treated peanut forage or hay. REI is 2 days. Aerial application to peanuts is prohibited.*

#### **SORGHUM, GRAIN SORGHUM (MILO)**

Use Chlorpyrifos 4# AG Insecticide for control of the following pests at the dosage indicated:

Mix the specified dosage in enough water to ensure thorough coverage and apply using suitable aerial or ground spray equipment. To minimize risk of chemical harm, apply Chlorpyrifos 4# AG no earlier than 3 days after irrigation or rain to drought stressed grain sorghum, except if the product is applied in irrigation water.

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Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

PESTS	Chlorpyrifos 4# AG	SPECIFIC DIRECTIONS
Armyworms Cutworms	1 - 2 pints/acre	
Chinch bugs Lesser cornstalk borer	1 - 2 pints/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 to 12 inch band centered on the row. On plants less than 6 inches high, apply an 8 to 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.
Corn earworm	2 pints/acre	
European and Southwestern corn borer	1 1/2 - 2 pints/acre	
Grasshoppers Yellow sugar cane aphid and other aphids	1/2 - 1 pint/acre	
Greenbug	1/2 - 2 pints	For infestations of greenbug that are difficult to control, use a higher dosage within the indicated rate range.
Sorghum midge	1/2 pint/acre	Apply when 30 to 50% of the seed heads are blooming, repeat at 3-day intervals if necessary.
Webworms	1 pint/acre	

**PRECAUTION:** Please note that sorghum lines that are used in seed production fields may be more susceptible to chemical harm. A greater risk of yield-reducing chemical injury is likely to inbred lines or hybrids presumed to be inbred when the higher application amounts are used. To avoid harm to crops altogether, apply a maximum of 1 pint per acre of Chlorpyrifos 4# AG to seed sorghum.

**RESTRICTIONS:** Do not use the treated crop for grain, forage, fodder, hay, or silage within 30 days after applying 1 pint of Chlorpyrifos 4# AG per acre or 60 days after applying amounts above 1 pint per acre. Sweet varieties of sorghum should not be treated. Apply a maximum of 3 pints of Chlorpyrifos 4# AG per acre per season. Apply no more than three times per season. REI is 24 hours.

#### 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 Chlorpyrifos 4# AG 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 appropriate ground spray equipment. Equivalent rates of insecticide spray required per 100 feet of row for

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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 behind the press wheel, then lightly incorporate with a drag chain. Do not use as an in-furrow treatment. To use as a treatment after emergence of insects, apply as a directed spray in a band 9 to 12 inches at the base of the plant. For plants that are less than 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.

**Amount of Spray Required, in Fluid Ounces Per 100 Feet of Row at Various Row Spacings**

Amt of Spray Per Acre	Various Row Spacings Measured in Inches:			
	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 Chlorpyrifos 4# AG in the quantities listed below by applying enough water to completely cover treated plants:

PESTS	Chlorpyrifos 4# AG
European corn borers	2 pints/acre
Southern green stink bugs	
Aphids (including Chinese)	1 - 2 pints/acre
Bean leaf beetles	
Corn earworms	
Cutworms	
Saltmarsh caterpillars and other woollybears	
Armyworms	1 - 1 1/2 pints/acre
Mexican bean beetles	
Grasshoppers	1/2 - 1 pint/acre
Green cloverworms	
Spider mites	
Velvetbean caterpillars	

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. Apply only once on determinate soybeans after pod set.

Chlorpyrifos 4# AG insecticide 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 Chlorpyrifos 4# AG per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See "Sprinkler Irrigation" section for further information.

**RESTRICTIONS:** Apply a maximum of 6 pints of Chlorpyrifos 4# AG per acre or a maximum of 3 lbs. of chlorpyrifos (active ingredient) per acre per season. Apply no more than 3 times per season. The last treatment should not be applied 28 days or less before harvest nor apply last two treatments closer than 14 days apart. Prevent farm animals from grazing in treated areas. Do not feed treated soybean forage, hay, or straw to meat or dairy animals. REI is 24 hours.



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## STRAWBERRIES

Use Chlorpyrifos 4# AG 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. After berries begin developing or start to appear, cease application. Do not tank mix Chlorpyrifos 4# AG with pesticides, surfactants, or fertilizer formulations unless prior use has demonstrated that the combination will not cause injury under present use conditions.

High temperatures and drought stress may cause phytotoxicity when Chlorpyrifos 4# AG is applied to strawberries.

**RESTRICTIONS:** *Use only before blooming. Make no more than two applications per season and do not apply within 21 days of harvest. REI is 24 hours.*

## SUGAR BEETS

Soil Treatment (at Planting or Preplant Incorporated)

Treat with Chlorpyrifos 4# AG at planting time or use as a preplant treatment to lessen feeding damage from early season insects like cutworms. Incorporate 1 to 2 inches deep. Do not use as an in-furrow treatment. Use 1 pint of Chlorpyrifos 4# AG per planted acre to a band 10 inches wide centered on the row for furrows 30 inches apart. (For rows 30 inches apart, this is the same as 9.2 fluid ounces of Chlorpyrifos 4# AG per 10,000 feet of row.) Adjust the amount of spray used per planted acre in relation to the area that is treated when using on other row widths.

### Postemergence Treatment

Use Chlorpyrifos 4# AG as a broadcast foliar spray. Treat when field counts show that damage-causing insect populations are or may be a problem. Treat again if needed to maintain control.

Broadcast application: Use the specified application amount in a total spray volume of 2 to 5 gallons of water per acre using appropriate aerial spray equipment of 10 to 30 gallons of water per acre when using power-operated ground equipment.

PESTS	CHLORPYRIFOS 4# AG
Beet Armyworms	1 1/2 - 2 pints/acre
Cutworms	2 pints/acre
Grasshoppers <sup>1</sup>	1/2 - 1 pint/acre
Sugar Beet Root Maggot Adults (present at time of applications)	1 pint/acre

<sup>1</sup>The lower application amount is enough to control young nymphs.

Band application to control Sugar Beet Root Maggot: Apply 2 pints of Chlorpyrifos 4# AG per acre on a broadcast basis, e.g., 2/3 pints/acre in a 7.5 inch band based on a 22-inch row spacing. For rows 22 inches apart, this is equivalent to 13.5 fluid ounces of Chlorpyrifos 4# AG per 10,000 feet of row. For band application, do not apply less than 20 gallons of water per acre on a broadcast basis.

**RESTRICTIONS:** *Apply no later than 30 days before harvest of beet roots and tops. Apply no more than 3 times per season. Do not apply more than 3 lbs. of active ingredient per acre per season. Prevent livestock from grazing in treated areas. Do not harvest treated beet tops as feed for meat or dairy animals within 30 days after last treatment. REI is 24 hours.*

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**SUNFLOWERS**

For use in controlling banded sunflower moths, cutworms, grasshoppers, seed weevils, stem weevils, sunflower beetle larvae and adults, sunflower moth and woollybears.

**Preplant Incorporation Treatment**

Use Chlorpyrifos 4# AG insecticide at the following rates by application in sufficient water to the soil surface and incorporate into the soil:

PESTS	Chlorpyrifos 4# AG
Cutworms	2 - 4 pints/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. Incorporate treatment into the top 2 to 4 inches of soil using appropriate equipment (such as a disc, field cultivator, etc.) on the same day of treatment.

**Postemergence Treatment**

Use Chlorpyrifos 4# AG for control of the following pests in the application amounts indicated by using enough water to completely cover the treated plants:

PESTS	Chlorpyrifos 4# AG
Cutworms	2 - 3 pints/acre
Banded sunflower moth	1 - 1 1/2 pints/acre
Seed weevil	
Stem weevil	
Sunflower beetle larvae and adults	
Sunflower moth	
Woollybears	1 pint/acre
Grasshoppers	

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. To control stem weevils, treat within 5 to 7 days after adult weevils start to appear for best results. To control sunflower moths, make the initial application at the early 1 to 5 percent bloom stage. A second treatment may be made 7 days later, if needed. For seed weevil control, apply when field counts show that 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 show that there are 10 larvae or about 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.

**RESTRICTIONS:** Apply no more than 3 applications per season. Apply a maximum of 3 lbs. of active ingredient per acre per season. Apply no later than 42 days before harvest. Prevent livestock from grazing in treated areas. REI is 24 hours.

**SWEET POTATOES**

Use Chlorpyrifos 4# AG to reduce the feeding damage caused by populations of Conderus wireworms, sweet potato flea beetles and Systena flea beetles. 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.

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Immediately after application, incorporate the treatment 4 to 6 inches deep by using appropriate incorporation equipment (i.e., a rotary hoe, disc cultivator, etc.). 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 Chlorpyrifos 4# AG will protect against feeding damage). Chlorpyrifos 4# AG cannot control false wireworms, white fringe beetles or other grubs that attack sweet potatoes.

**RESTRICTIONS:** *Apply only once per season. Do not harvest until 125 days after treatment. REI is 2 days.*

#### TOBACCO

Use Chlorpyrifos 4# AG for preplant treatment to control larvae of cutworms, flea beetles, mole crickets, root maggots, and wireworms. Apply 2 to 3 quarts of Chlorpyrifos 4# AG 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. Incorporate Chlorpyrifos 4# AG into the soil about 2 to 4 inches deep using appropriate equipment, right after application. Chlorpyrifos 4# AG also suppresses the migration of imported fire ants into treated areas.

Use 5 quarts per acre of Chlorpyrifos 4# AG to control the insects listed above as well as low to moderate populations of rootknot nematodes in North Carolina, South Carolina, and Virginia. To control the above-listed insects and moderate populations of rootknot nematodes in all tobacco growing regions, use 2 quarts of Chlorpyrifos 4# AG in a tank mix with 4 quarts of Nemacur 3 per acre.

Carefully review and follow all applicable directions, restrictions, and precautions on labeling for Nemacur 3 being used with Chlorpyrifos 4# AG. Use the specified application amount in at least 10 gallons of water as a broadcast (overall) spray to the soil surface 24 to 48 hours before bedding and transplanting. Incorporate product at least 4 inches deep into the soil using appropriate equipment as soon as possible after application. When the nematode species *Meloidogyne arenaria* or *M. javanica* appear or there are high populations of *M. incognita*, apply Telone\* II soil fumigant, following the label instructions.

Knock down beds to final shape for transplanting, prior to the broadcast application of Chlorpyrifos 4# AG onto existing beds. It is recommended to use PTO driven implements/equipment that will incorporate Chlorpyrifos 4# AG to a depth of 4 inches.

**RESTRICTIONS:** *Apply only once per season. Apply no more than 2 lbs. of active ingredient per acre per season. Use no more than 2 lbs. of active ingredient per acre in a single application. REI is 24 hours.*

#### TREE FRUITS

Post-bloom use on apple trees is prohibited.

Use Chlorpyrifos 4# AG as a dormant or delayed dormant spray at the rates indicated to control the following insects on the crops listed. Chlorpyrifos 4# AG may be used without oil. However, oil is recommended to control other pests such as European red mites.

CROP	INSECT	Chlorpyrifos 4# AG PER 100 GALLONS OF SPRAY*
Apples**	Climbing cutworms Lygus Oblique banded leafroller Pandemis leafroller Rosy apple aphid San Jose scale	1/2 - 1 pint

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Pears	Climbing cutworms Pear psylla adults San Jose scale	(use a minimum of 1.5 pints/acre)
Plums Prunes	Climbing cutworms Mealy plum aphid Peach twig borer San Jose scale	
Almonds Nectarines Peaches	Climbing cutworms Peach twig borer San Jose scale	

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

\*\* Do not apply post-bloom.

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 until runoff using suitable ground spray equipment. (See "Additional Precautions Specific to California" for use in California).

For low volume (concentrate) sprays, of less than 200 gallons of spray mixture per acre, use the same amount of Chlorpyrifos 4# AG as for a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use the higher dosage of Chlorpyrifos 4# AG for severe infestations. Use oil as recommended by your state agricultural experiment station or extension service specialist.

**PRECAUTIONS:** Cold or dry conditions may cause Chlorpyrifos 4# AG with oil sprays to infuse trees, causing bud damage or drop. Therefore, apply product after winter rains or after irrigation has restored soil moisture such that bark and twigs are not dried out. Use a maximum of 4 pints of Chlorpyrifos 4# AG per acre.

**Additional Precautions Specific to California:** Apply at least 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 with or as a replacement for a petroleum spray oil in a tank mix with Chlorpyrifos 4# AG. Do not use product on almonds in Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo, and Yuba counties in California.

**RESTRICTIONS:** Apply only once during the dormant season. Prevent meat or dairy animals from grazing in treated orchards. REI for fruit trees is 4 days.

## TREE NUTS

To control the pests listed in the following table, apply Chlorpyrifos 4# AG as a foliar spray in the specified application amount. Mix the specified application amount of Chlorpyrifos 4# AG in enough water to completely cover the foliage and crop. Either use as a concentrate or dilute it by using conventional, power-operated spray equipment. For dilute sprays applied to tree nut crops, mix the specified application amount of Chlorpyrifos 4# AG in enough water to allow for spray runoff. Use the same amount of Chlorpyrifos 4# AG per acre for concentrate sprays. Apply Chlorpyrifos 4# AG at the appearance of pests or in accordance with local conditions. Control by aerial application may be less effective than control by ground application because of less coverage. Contact local agricultural experiment station, certified pest control advisor, or extension service specialist for use information in a given area.

Maximum of 4 lbs. ai/A to be applied per acre per season.

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**ALMONDS, FILBERTS, WALNUTS**

Use Chlorpyrifos 4# AG at the rates indicated to control the listed pests.

CROP	INSECTS CONTROLLED	DOSAGE Chlorpyrifos 4#	RESTRICTIONS
Almonds	Navel orangeworm Peach twig borer San Jose scale	4 pints/acre	Make a maximum of 3 foliar applications per season on almonds and filberts and a maximum of 2 applications per season on walnuts. Apply 14 days after harvest. Prevent livestock from grazing in treated orchards.
Filberts	Eye-spotted bud moth Filbert aphid Filbert leafroller Filbert worm Obliquebanded leafroller Omnivorous leaftier Winter moth	3 - 4 pints/acre	
Walnuts	Codling moth Walnut scale	4 pints/acre	

**PECANS**

Use Chlorpyrifos 4# AG at the rates indicated to control the listed pests.

INSECTS CONTROLLED	DOSAGE OF Chlorpyrifos 4# AG (Dilute or Concentrate) Pints/Acre	REMARKS AND RESTRICTIONS
Fall webworm Pecan nut casebearer	1 1/2 - 4	Make no more than five applications per year. Apply at least 28 days after harvest. Prevent livestock from grazing 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 Chlorpyrifos 4# AG listed for the pest. Apply in 100-600 gallons of water per acre. For aerial applications use 5-15 gallons of water per acre. Restricted Entry Interval (REI) is 2 days.
Black pecan aphid Fire ants and other ants species <sup>4</sup> Hickory shuckworm <sup>2</sup> Pecan leaf scorch mite(suppression) <sup>3</sup> Phylloxera spp. <sup>1</sup>	2 - 4	Note: With aerial application control may be reduced due to poor coverage. Up to 20

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Black margined aphid Yellow pecan aphid	1 - 4 pints of Chlorpyrifos 4# AG plus:  1.70 fl oz Asana 1.9EC, OR 3.00 fl oz of Ammo 2.5EC, OR 2.56 fl oz of Cymbush 3E	pints of Chlorpyrifos 4# AG may be applied per acre per year.
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<sup>1</sup> Make 2 applications at a 7 to 10 day interval using at least 1.0 pint of Chlorpyrifos 4# AG per acre starting at bud swell for optimal Phylloxera spp. control.

<sup>2</sup> Make 2 applications, 10 to 14 days apart, for optimal results.

<sup>3</sup> Use a preventative program to suppress pecan leaf scorch mites.

<sup>4</sup> 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.

### ALMOND ORCHARD FLOORS

Use Chlorpyrifos 4# AG 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. When ant activity becomes apparent in the orchard, use Chlorpyrifos 4# AG. Worker ants stop most of their foraging activity when temperatures are above 90°F. Therefore, applications made when the temperature is below 90°F should yield optimal results. Dosage of Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG 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.

#### Ant Control in Flood-irrigated Orchards

Apply Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG. In addition to the orchard floor treatment, foliar applications of Chlorpyrifos 4# AG may also be applied.

**RESTRICTIONS:** Maximum of 2 applications per season. Maximum of 4 lbs ai/A to be applied per acre per season. Apply the final treatment no later than 14 days of harvest. Prevent livestock from grazing in treated orchards. Restricted Entry Interval (REI) is 2 days.

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**VEGETABLES**

Use Chlorpyrifos 4# AG 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 Chlorpyrifos 4# AG	USE DIRECTIONS	RESTRICTIONS
Cauliflower*	Root maggot	1.6-2.4 fl oz/1000 linear ft or row	For direct seeded crops use the specified application amount in a water-based spray as a band 4 inches wide over the row at planting time. Shallow incorporation is necessary. Placement behind the planter shoe and in front of the press wheel is recommended.	Apply a maximum 2 pints of Chlorpyrifos 4# AG to cauliflower planted in 40 inch rows. Use proportional amounts for other row spacings, but do not use more than 4 pints of Chlorpyrifos 4# AG per acre.
Broccoli Brussels sprouts Cabbage Chinese cabbage Collards Kale Kohlrabi Turnips	Root maggot	1.6 - 2.75 fl oz/1000 linear ft of row	For transplanted crops, use Chlorpyrifos 4# AG as a water-based spray directed to the base of the plants right after setting. Use at least 40 gallons of total spray per acre. Do not add any additional adjuvants, surfactants or spreader stickers. Do not use as a foliage application.	Do not apply more than 2.6 pints of Chlorpyrifos 4# AG per acre to broccoli, brussels sprouts, cabbage, Chinese cabbage, collards, kale, kohlrabi, and turnips planted in 40-inch rows. Use a maximum of 4.5 pints of Chlorpyrifos 4# AG per acre to these crops in 20 inch rows (or two rows per bed). Use proportional amounts for other row spacings, but do not use more than 4.5 pints of Chlorpyrifos 4# AG per acre.
Broccoli Cabbage	Root aphid	1.2 fl oz/1000 ft of row for single row plantings, and 2.4 fl oz/1000 linear ft of row for double row plantings.	After plants are established, apply product either in a water emulsion or with liquid fertilizer injected as a sidedress on each side of the row. Prevent mechanical damage to crop roots. Use at least 15 gallons of total spray volume per acre.	Do not make more than one application per season or apply within 30 days before harvest.

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CROP	INSECTS CONTROLLED	DOSAGE Chlorpyrifos 4# AG	USE DIRECTIONS	RESTRICTIONS
Brussels sprouts	Armyworms Cabbage aphid Cutworms Imported cabbageworm Striped flea beetle (adult)	1 - 2 pints/acre	Using conventional power-operated spray equipment, apply Chlorpyrifos 4# AG in 20 to 150 gallons of water per acre. Use when insects are present on foliage and at 7 to 14 day intervals thereafter as necessary. To determine the proper timing for treatment, contact local agricultural experiment station, extension service specialist, or integrated pest control advisor.	Apply a maximum of 6 times per season. Apply at least 21 days after harvest.
Radishes	Root maggot	1.0 fl oz/1000 linear ft of row	Apply the specified application amount as a water-based drench in the seed furrows with the seed at planting time. Use at least 40 gallons of total drench per acre.	Apply no more than 5.5 pints of Chlorpyrifos 4# AG per acre. Apply only once per season.
Rutabagas	Root maggot	1.6-3.3 fl oz/1000 linear ft of row	Apply the specified application amount in a water-based spray as a band 4 inches wide over the row at planting time, in back of the planter shoe and in front of the press wheel for shallow incorporation. Use at least 40 gallons of total spray volume per acre.	Apply a maximum of 4.5 pints of Chlorpyrifos 4# AG per acre. Apply only once per season.  Rutabaga tops should not be used for food or feed purposes.

\* Restricted Entry Interval (REI) for cauliflower is 24 hours. Pre-Harvest Interval (PHI) is 30 days.

## WHEAT

### Not Registered for Use in California

Registered for use in Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

For Control of Aphids, including Russian wheat aphid, grasshoppers, wheat midge, and cutworms infesting wheat.



INSECTS CONTROLLED	DOSAGE Chlorpyrifos 4# AG	USE DIRECTIONS	RESTRICTIONS
Aphids Grasshoppers	½ to 1 pint per acre		Do not make than two applications per crop. Do not apply within 28 days of harvest. Prevent livestock from grazing or otherwise feeding on treated forage until 14 days after application. Feed animals straw from treated wheat 28 days after application. Do not apply directly to bodies of water. Do not apply product where runoff is likely to occur to aquatic habitats (including lakes, public reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, or other natural waters). Do not apply when weather conditions favor drift or runoff from treated areas.
Wheat Midge	1 pint per acre	When 75% of the wheat heads have emerged from the boot and when midge adults are found in the crop (1 midge per 4-5 heads), applying treatment is advised. Application timing is critical to ensure good control. Treat in the late afternoon or early evening when temperatures exceed 50 F and wind speed is less than 7 mph, if possible.	
Army Cutworms	1 pint per acre	For control of army cutworms and suppression of other cutworm species. Efficacy of control may diminish in high temperatures (more than 80 F), under dry soil conditions, or if larvae are more than ½ inch long. Apply treatment when field counts or crop injury show the presence or development of damage-causing pest populations. A second application of 1 pint per acre may be made for additional control. Mix the required application amount with water. Apply at least two gallons per acre finished spray volume.	

#### Ground Application

For ground applications, the distance from treated areas to aquatic habitats (including lakes, public reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries or other natural waters) must be thirty feet or more

Do not make ground applications if wind speed is greater than 15 mph.

Do not apply at spray boom pressures greater than 45 psi.

#### Aerial Application

Do not apply by air within 300 feet of aquatic habitats (including lakes, public reservoirs, rivers, permanent

streams, marshes, natural ponds, estuaries or other natural waters).

Do not make aerial applications of Chlorpyrifos 4E AG when wind speeds exceed 10 mph or when atmospheric temperature inversion exists.

Boom length should not exceed 75% of the wing span and release height for aerial applications should be no greater than 10 feet above the crop canopy.

#### SOD FARM TURF

Use Chlorpyrifos 4E to control the pests listed in the following table by applying at the recommended dosages and in accordance with the directions given below or as recommended by you local Agricultural Extension Service Specialist. Dilute Chlorpyrifos 4E in water and apply as a coarse, low-pressure spray using suitable application methods. Thoroughly water immediately after treatment to wash the insecticide into the turf, except as noted. For best results, the area should be moist at time of treatment. Spray when pests first appear; retreat when needed.

PEST	RATE Oz./ 1000 sq. ft	RATE Pint/ ACRE	DIRECTIONS
Armyworms Chinch Bugs Cutworms Pillbugs Sod Webworms* Turfgrass weevils Mole Crickets	1/2- 3/4	1 ½ -2	Apply Chlorpyrifos 4E in water at suggested rate using a hydraulic sprayer, mist applicator, knap sack sprayer, or other suitable hand- or power-operated spray equipment. Treat low underbrush, grassy areas, weeds, and ground surface and debris using enough spray volume to obtain thorough coverage, usually 40-100 gall/acre.

\* For Sod Webworms, watering or mowing of the treated sod should be delayed for 12- 24 hours after treatment.

#### CONDITIONS OF SALE AND WARRANTY

The **Directions For Use** of this product reflects the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of MICRO FLO COMPANY LLC ("MICRO FLO") or the Seller. All such risks shall be assumed by the Buyer.

MICRO FLO warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

MICRO FLO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT PERMITTED BY LAW, MICRO FLO AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. MICRO FLO and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of MICRO FLO.

### 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.

### CHLORPYRIFOS 4# AG

For the control of assorted pests infesting particular field, fruit, nut, and vegetable crops

#### ACTIVE INGREDIENT:

Chlorpyrifos O,O-diethyl- O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate ..... 44.7%

INERT INGREDIENTS\*: ..... 55.3%

TOTAL ..... 100.0%

Contains 4 pounds of chlorpyrifos per gallon.

\*Contains aromatic petroleum distillates

### KEEP OUT OF REACH OF CHILDREN

### WARNING AVISO

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

### FIRST AID

Organophosphate

If Swallowed: Do not induce vomiting. Contains aromatic petroleum solvent. Call a physician or Poison Control Center immediately.

If In Eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.

If On Skin: Wash with plenty of soap and water. Get medical attention.

If Inhaled: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

PHYSICIAN TREATMENT: Chlorpyrifos is a cholinesterase inhibitor. Treat poisoning symptomatically. Baseline data are useful in detecting the level of exposure. Certain tests, such as plasma and red blood cell cholinesterase, may detect exposure level. Preferred antidote post exposure is Atropine, by injection only. If detected early, treat with 2 PAM/protopam or other Oximes in conjunction with atropine. Use recommended antidote immediately after establishing an open airway and respiration in the event of serious acute poisoning.

### PRECAUTIONARY STATEMENTS Hazard to Humans and Domestic Animals

#### WARNING

May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Causes eye irritation. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

**EMERGENCY TELEPHONE NUMBERS:** Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact:

(800) 424-9300	CHEMTREC (transportation and spills)
(800) 832-HELP (4357)	Human Health
(800) 345-4735	ASPCA (animal health)

#### PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are barrier laminates and Viton. If you want more options, follow the instructions for category H on an EPA chemical resistance category selection chart.

Mixers and loaders using a mechanical transfer loading system and applicators using aerial application equipment must wear:

-long sleeved shirt and long pants;  
-socks and shoes

In addition to the above, mixers and loaders using a mechanical transfer loading system must wear:

-chemical resistant gloves;  
-chemical resistant apron;  
-a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator any R, P, or HE filter.

See engineering controls for additional requirements.

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

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

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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 and maintaining PPE. If no such instructions 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, 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

#### ENGINEERING CONTROLS

Mixers and loaders supporting aerial applications must use a mechanical transfer system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] for dermal protection, and must: **wear the personal protective equipment required above for mixers/loaders**, wear protective eyewear if the system operates under pressure, and -be provided and have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown: coveralls, chemical resistant footwear and chemical resistant headgear if overhead exposure.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

Use of human flaggers is prohibited. Instead, use mechanical flagging equipment.

When handlers use 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.

#### 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 weed is bees are visiting the treatment area.

#### PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

#### STORAGE AND DISPOSAL

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

**Storage:** *Keep in original container in dry secured storage space. Do not permit contact with other pesticides and fertilizers. Do not store above 100°F for long periods of time. Crystals may form if stored below 20°F. If crystals form, store at 50° - 70°F and agitate to allow crystals to redissolve. Use product immediately, or dispose of it with the container in the manner prescribed below in the event that the container is damaged or a spill occurs.*

**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 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.

#### Disposal of Refillable Containers:

Change the dry disconnect cap, if applicable, and close every opening which has been opened during use. Return the empty container to a Micro Flo designated repository site. For proper handling instructions in the event that the container has been damaged and cannot be returned safely in accordance to the advised procedures, call the Micro Flo Customer Service Center at 1-800-451-8461.

**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.

EPA Reg. No. 51036-291

EPA Est. No. 51036-GA-01

AD xxxxxx

NET CONTENTS: \_\_\_\_\_

Manufactured By:

MICRO FLO COMPANY LLC

P.O. BOX 772099

MEMPHIS, TN 38117

**BASE LABEL**

26/2/20