

# INSECTICIDE



## 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.



FOR THE CONTROL OF LISTED PESTS INFESTING PARTICULAR FIELD, FRUIT, NUT, AND VEGETABLE CROPS.

### ACTIVE INGREDIENT

**% BY WT.**

Chlorpyrifos O, O-diethyl-O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate..... 44.9%

**OTHER INGREDIENTS\*:** ..... 55.1%

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

Contains 4 pounds of chlorpyrifos per gallon.

\*Contains 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.)

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Distributed By:  
**INNVICTIS® CROP CARE, LLC**  
1880 Fall River Drive, Suite 100  
Loveland, CO 80538

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**FIRST AID  
ORGANOPHOSPHATE**

<b>If swallowed:</b>	<ul style="list-style-type: none"><li>• Immediately call a poison control center or doctor.</li><li>• <b>DO NOT</b> give any liquid to the person.</li><li>• <b>DO NOT</b> induce vomiting unless told to do so by the poison control center or doctor.</li><li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li></ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>

**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. May pose an aspiration pneumonia hazard. Contains petroleum distillate.

**HOT LINE NUMBER**

Have the product container or label with you when calling a poison control center, doctor, or going for treatment. For emergency information concerning this product, call the National Pesticides Information Center (NPIC) at **1-800-858-7378** (NPIC Web site: [www.npic.orst.edu](http://www.npic.orst.edu)). OR call your poison control center at **1-800-222-1222**.

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

May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Causes moderate 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. Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves (barrier laminate or viton, selection category G).

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are barrier laminates and Viton. If you want more options, follow the instructions for category G 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 with 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 with 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 manufacturers' instructions for cleaning and maintaining PPE. If no such instructions exist/are available for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

<b>Users Should:</b> <ul style="list-style-type: none"><li>• Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.</li><li>• Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.</li><li>• 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.</li></ul>
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**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 (PPE) 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 weeds if bees are visiting the treatment area.

#### PHYSICAL OR CHEMICAL HAZARDS

Combustible. **DO NOT** use or store near heat or open flame.

#### DIRECTIONS FOR USE RESTRICTED USE PESTICIDE

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.

#### 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	Foliar = 21; Soil = 30
Cabbage	30
Cauliflower	30
Cherries	6
Chinese Cabbage	30
Citrus Fruits	21 at rates $<$ 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)	21 – corn silage
Figs	210 days
Grapes	35
Kale	30
Kohlrabi	30
Mint	90
Nectarines, Peaches	14
Peanuts	21
Radishes, Rutabagas	30
Sorghum, Grain Sorghum	30 at rates $<$ 0.5 lb. ai/A 60 at rates $>$ 0.5 lb. ai/A
Soybeans	28
Strawberries	21
Sugar beets	30

**DIRECTIONS FOR USE  
RESTRICTED USE PESTICIDE  
cont'd**

CROP	PHI*
Sunflowers	42
Sweet Corn (grown only in Florida and Georgia)	21
Sweet Potatoes	125
Tree Fruits (Apple, Cherry, Pear, Plum/Prune)	6 - cherry
Tree nuts (almonds, filberts, walnuts)	14
Tree nuts (pecans)	28
Turnips	30
Wheat	14 – forage and hay 28 – grain and straw

\*PHI – Pre-Harvest Interval or the number of days to wait between the last application and harvest.  
Aerial application to peanuts is prohibited.

**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.

**Pesticide 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. 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.

**Container Handling and Disposal:**

**Nonrefillable container:** **DO NOT** reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at [www.acrcycle.org](http://www.acrcycle.org).

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**For packages up to 5 gallons. Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

### STORAGE AND DISPOSAL cont'd

**Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 56 gallons:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**For refillable containers:** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

### USE INFORMATION

*VEAPER* 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.

### USE RESTRICTIONS

**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.

**DO NOT** aerially apply this product in Mississippi.

### 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, non-target 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 air-blast 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.

### BUFFERS FOR SENSITIVE SITES

The buffer distances specified in the below table are the distances in feet that must exist to separate sensitive sites from the targeted application site. Buffers are measured from the edge of the sensitive site to the edge of the application site.

Sensitive sites are areas frequented by non-occupational bystanders (especially children). These include residential lawns, pedestrian sidewalks, outdoor recreational areas such as school grounds, athletic fields, parks and all property associated with buildings occupied by humans for residential or commercial purposes. Sensitive sites include homes, farmworker housing, or other residential buildings, schools, daycare centers, nursing homes, and hospitals. Non-residential agricultural buildings, including barns, livestock facilities, sheds, and outhouses are not included in this prohibition.

### BUFFERS FOR SENSITIVE SITES

Application rate (lb ai/A)	Nozzle Droplet Type	Required Setback (Buffer Zones) (feet)		
		Aerial	Airblast	Ground
>0.5 - 1	Coarse or very coarse	10	10	10
>0.5 - 1	Medium	25	10	10
>1 - 2	Coarse or very coarse	50	10	10
>1 - 2	Medium	80	10	10
>2 - 3	Coarse or very coarse	80'	10	10
>2 - 3	Medium	100'	10	10
>3 - 4	Medium or coarse	Not Allowed	25	10
>4	Medium or coarse	Not Allowed	50	10

**1 Aerial Application of greater than 2 lb ai/A is only permitted for Asian Citrus Psylla control, up to 2.3 lb ai/A.**

Only pesticide handlers are permitted in the setback area during application of this product. **DO NOT** apply this product if anyone other than a mixer, loader, or applicator, is in the setback area. **Exception:** Vehicles and persons riding bicycles that are passing through the setback area on public or private roadways are permitted.

## MIXING DIRECTIONS

To prepare the spray, add some of the required water to spray tank, agitate, and then add the *VESPER*. 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.

*VESPER* may also be used in tank mixtures with certain herbicides and/or with non-pressure fertilizer solutions as directed under specific crop use directions. To prepare tank mixtures, mix in the same way as if preparing just the *VESPER*, as described above. If using tank mixtures of *VESPER* 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 Envelop, is highly recommended. Continue with enough agitation during mixing and application to ensure consistency of the spray mixture. **DO NOT** let spray mixtures stand overnight.

**NOTE:** Before adding *VESPER* 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 re-disperse. This is an indication that the mixture is not compatible and therefore should not be used.

## CHEMIGATION (SPRINKLER IRRIGATION)

*VESPER* may be applied by sprinkler irrigation for the following crop uses: alfalfa, citrus orchard floors, field corn, peppermint, spearmint, sweet corn, cotton, cranberries, sorghum, soybeans and wheat.

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.

## SPRINKLER USE DIRECTIONS

If using *VESPER* 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 *VESPER* 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 *VESPER*. 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 **SPRINKLER USE PRECAUTIONS** sections. While the sprinkler is moving, inject the *VESPER* 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.

## SPRINKLER USE PRECAUTIONS

Follow the precautions below in order to apply *VESPER* 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.
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 79 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 *VESPER* mixture:
  - A. Calculate the number of acres irrigated by the system.
  - B. Set the rate of irrigation and determine the amount of minutes for system to cover the desired area to be treated.
  - C. 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 non-target 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 re-entering the field.
18. Because sprinkler systems such as certain water drive units deliver a low coefficient of uniformity, **DO NOT** apply through such systems.

## APPROVED CROPS

### ALFALFA (Not for use in Mississippi)

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a broadcast foliar spray using aircraft or ground spray equipment. Use a higher rate in the rate range for increased pest pressure. Use a minimum spray volume of 2 gpa for aerial (fixed wing or helicopter) or 10 gpa for ground equipment. Use a spray volume of 5 gpa or more by air or up to 20 gpa by ground when foliage is dense and/or pest population is high and/or under high temperature and wind conditions. Some reduction in insect control may occur under unusually cool conditions.

**CHEMIGATION: VESPER** may be applied through sprinkler irrigation systems to control listed foliar pests. Use specified broadcast application rates. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

PESTS	<i>VESPER</i>
Aphids (suppression)	½ pint/acre
Corn rootworm adults (spotted cucumber beetle) Grasshoppers	½ - 1 pint/acre
Alfalfa blotch leafminer Alfalfa caterpillar Alfalfa weevil larvae and adults Armyworms Blue alfalfa aphid Cutworms Egyptian alfalfa weevil larvae and adults Pea Aphid Plant Bugs Leafhoppers Spittlebugs	1 – 2 pints/acre

#### Specific Use Precautions:

- **DO NOT** tank mix with other pesticides, surfactants, or fertilizer formulations unless proper use has shown the combination to be non-injurious to alfalfa under current conditions of use. Some phytotoxic symptoms may be observed on young, tender, rapidly growing alfalfa treated with *VESPER*. Alfalfa will outgrow these symptoms and no yield loss should be 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 in the treated area. Protective information may be obtained from the Agricultural Extension Service.
- To avoid contamination of irrigation tail waters, **DO NOT** flood irrigate within 24 hours following and application of *VESPER*.

#### SPECIFIC USE RESTRICTIONS:

- **PREHARVEST INTERVAL: DO NOT** cut or graze treated alfalfa within 7 days after application of ½ pint per acre of *VESPER*, within 14 days after application of 1 pint per acre, or within 21 days after application of rates above 1 pint per acre.
- **DO NOT** make more than 4 applications per season of *VESPER* or other product containing chlorpyrifos or apply any product containing chlorpyrifos more than once per alfalfa cutting.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.

### ASPARAGUS

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) or 24 hours unless PPE required for early entry is worn.

Apply as a ground broadcast foliar spray. Use sufficient volume of finished spray to ensure thorough coverage of crop foliage. NOTE: *VESPER* insecticide may be applied aerially or with ground equipment for control of armyworms and grasshoppers.

PESTS	<i>VESPER</i>
Asparagus aphids <sup>1</sup> Asparagus beetles <sup>1</sup> Cutworms <sup>2</sup>	2 pints / acre

#### PEST-SPECIFIC USE DIRECTIONS:

1. For **asparagus aphids** and **asparagus beetles** apply during the fern stage when field counts or crop injury indicates that damaging test populations are developing or present.
2. For **cutworms**, it is preferable to apply when soil is moist and worms are active on or near the soil surface.

#### SPECIFIC USE RESTRICTIONS:

- **DO NOT** make more than 1 pre-harvest application per season or apply within 1 day or harvest.
- **DO NOT** make more than 2 post-harvest applications during the fern stage.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- For use only in the Midwest and Pacific Northwest states: Arizona, California, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oregon, South Dakota, Washington, and Wisconsin.
- Maximum single application rate pre-harvest or post-harvest is 1 lb ai chlorpyrifos per acre.

**CITRUS FRUITS  
(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow entry into treated areas during the restricted entry interval (REI) of 5 days unless PPE required for early entry is worn. Apply as a concentrate or dilute spray using conventional, power-operated spray equipment. Use a higher rate in rate range when there is increased pest pressure. Use sufficient water to ensure thorough and complete coverage of the foliage and fruit. For dilute sprays (greater than 200 gpa), use a spray concentration of at least 0.5 pints of *VESPER* per 100 gallons of finished spray. Complete coverage is not necessary for outside canopy sprays targeting certain pests such as Lepidoptera insects and katydids. Treat when pests become a problem or in accordance with the local spray schedule as recommended by your State Agricultural Extension Station, certified Pest Control Advisor, or Extension Service Specialist. To avoid excessive ridding, **DO NOT** apply *VESPER* to citrus from December up to the initiation of bloom.

**USE OF SPRAY OILS:** To improve control of aphids, mealybugs, scale insects, and thrips, petroleum spray oil approved for use on citrus trees may be added to spray mixtures at up to 1.8 gallons per 100 gallons of spray.

CROP	GEOGRAPHIC LOCATION	PEST	DOSAGE OF VESPER (pint/acre)	SPRAY VOLUME GAL ACRE	REMARKS	
Calamondin Chironja Citrus Citron Citrus Hybrids Grapefruit Kumquat Lemon Lime Mandarin (Tangerine) Pummelo Satsuma Mandarin Sour Orange Sweet Orange Tangelo Tangor	California Arizona	Aphids Avocado leafroller Cutworms Fruit tree leafroller Katydids Lepidopterous larvae Orange tortrix Western tussock moth	2-7	Ground: 100-750  Aerial: Min 15	<b>DO NOT</b> use a spray concentration of <i>VESPER</i> of less than ½ 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	2-7	Ground: 100-2400  Aerial: Min 20	<b>DO NOT</b> use a spray concentrate of <i>VESPER</i> of less than ½ pt/100 gal of water per acre.	
		Citrus rust mites	4-7	100-700		
	Texas	Aphids Cutworms Katydids Mealy bugs Scale insects: Brown soft scale California red scale Chaff scale	4-7	200-700	<b>DO NOT</b> use less than ½ of <i>VESPER</i> per 100 gallons of water in dilute applications	
		Citrus rust mites (suppression)	4-7	200-700		
	Small trans-planted Grapefruit Orange	Texas	Aphids Cutworms Katydids Mealy bugs Scale insects Brown soft scale California red scale Chaff scale	Max. of 7		Apply <i>VESPER</i> at a rate of 1 fl oz/1 gal of water with a backpack sprayer. Apply to runoff.



**SPECIFIC USE PRECAUTIONS:**

- Observe local recommendations for tank mix combinations especially with regards to use of *VESPER* with spray oil. Consult with a county farm advisor, county agent, extension service personnel, agricultural commissioner, pest control advisor, or local INNICTIS CROP CARE™, LLC representative for local recommendation.
- **DO NOT** apply when trees are stressed by drought or high temperatures.
- *VESPER* is highly toxic to bees exposed to direct treatment and must not be applied when bees are visiting the area. During the citrus bloom period in California, apply from 1 hour after sunset until 2 hours before sunrise.
- **ADDITIONAL PRECAUTIONS FOR CALIFORNIA AND ARIZONA: DO NOT** use in combination with spray oil when temperatures are expected to exceed 95o F the day of application or for several consecutive days thereafter.

**SPECIFIC USE RESTRICTIONS:**

- Pre-harvest Interval: **DO NOT** apply within 21 days before harvest for applications up to 7 pints of *VESPER* per acre or within 35 days for application of rates above 7 pints per acre.
- The use of application rates greater than 8 pints of *VESPER* (4 lb ai chlorpyrifos) per acre are allowed only in the following counties in California: Fresno, Tulare, Kern, Kings, and Madera.
- **DO NOT** apply more than 15 pints of *VESPER* (7.5 lb ai chlorpyrifos) per acre per year.
- **DO NOT** make more than 2 applications of *VESPER* or other products containing chlorpyrifos per year (does not include citrus orchard floors).
- **DO NOT** make second foliar application of *VESPER* or other product containing chlorpyrifos within 30 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in treated areas.

**CITRUS ORCHARD FLOORS (CONTROL OF ANTS (EXCLUDING FIRE, HARVESTER, PHARAOH AND CARPENTER)  
(NOT FOR USE IN MISSISSIPPI))**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 5 days unless PPE required for early entry is worn.

Apply as ground broadcast spray directed to the orchard floor to control foraging ants and suppress mounds. **DO NOT** allow spray to contact foliage or fruit. Apply in a total spray volume of 25 gpa or more using equipment that will apply the spray uniformly to the soil surface. Use a higher rate in the rate range for increased pest pressure. For best results, remove weed growth or other obstructions that might prevent the spray from reaching the soil surface. Foliar applications of *VESPER* or other products containing chlorpyrifos may be made in addition to the orchard floor treatments but must comply with the 10-day re-treatment interval) see **SPECIFIC USE RESTRICTIONS**.

**CHEMIGATION: VESPER** may be applied to citrus orchard floors through sprinkler irrigation systems only if the system uniformly covers the soil surface at the base of the tree. Apply at specified broadcast application rates to control listed pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

**NOTE: DO NOT** apply in tank mixture with Ewk herbicide.

PESTS	<i>VESPER</i>
Ants (excluding fire, harvester, pharaoh and carpenter)	3/4 – 1 quart/acre

**APPLICATION WITH DRY BULK FERTILIZER:** Most dry fertilizers can be used for impregnation with *VESPER*. Apply *VESPER* at the equivalent broadcast rate using a minimum of 200 lb per acre of dry bulk fertilizer.

**IMPREGNATION OF DRY BULK FERTILIZER:** Use a closed rotary drum mixer suitable for blending of dry bulk fertilizer equipped with an internal spray nozzle. Add the dry fertilizer to the mixer followed by the appropriate amount of *VESPER*. After mixing the dry ingredients to ensure uniformity, add water through the spray nozzle in an amount sufficient to just dampen the mixture (4 to 8 pints of water per ton of fertilizer). The spray nozzle should be positioned within the mixer to provide uniform coverage of the tumbling mixture of fertilizer and *VESPER*. Addition of water will cause *VESPER* to uniformly adhere to the dry bulk fertilizer. Bulk fertilizers impregnated with *VESPER* should be applied immediately, **NOT STORED**. Foliar applications of *VESPER* may be made in addition to the orchard floor treatments.

Compliance with any and all federal and state laws and regulations relating to the *VESPER* and fertilizer mixture is the responsibility of the person offering such mixture for sale or distribution.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 28 days before harvest.
- **DO NOT** apply more than 3 quarts of *VESPER* (3 lb ai chlorpyrifos) per acre per year.
- **DO NOT** make more than 3 applications of *VESPER* or other products containing chlorpyrifos per year (does not include foliar applications to citrus trees).
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in treated areas.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.

**COLE CROP (BRASSICA) LEAFY VEGETABLES AND RADISH, RUTABAGA, AND TURNIP**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours (3 days for cauliflower) unless PPE required for early entry is worn.

**SOIL APPLICATION - DO NOT** make more than one soil application per crop

Apply as indicated in **PEST-SPECIFIC USE** directions. Use a higher rate in the rate range when there is increased pest pressure.

CROP	INSECTS CONTROLLED	DOSAGE VESPER	USE DIRECTIONS	RESTRICTIONS
Cauliflower	Root maggot	1.2 fl oz/1000 linear ft of 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 <i>VESPER</i> to cauliflower planted in 40 inch rows. Use proportional amounts for other row spacings, but <b>DO NOT</b> use more than 4 pints of <i>VESPER</i> per acre.

CROP	INSECTS CONTROLLED	DOSAGE VESPER	USE DIRECTIONS	RESTRICTIONS
Broccoli Brussel 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 <i>VESPER</i> 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. <b>DO NOT</b> add any additional adjuvants, surfactants or spreader stickers. <b>DO NOT</b> use as a foliage application.	<b>DO NOT</b> apply more than 2.6 pints of <i>VESPER</i> per acre to broccoli, brussel sprouts, cabbage, Chinese cabbage, collards, kale, kohlrabi, and turnips planted in 40-inch rows. Use a maximum of 4.5 pints of <i>VESPER</i> per acre to these crops in 20-inch rows (two rows per bed). Use proportional amounts for other row spacings, but <b>DO NOT</b> use more than 4.5 pints of <i>VESPER</i> per acre.
Broccoli Cabbage	Root aphid	1.2 fl oz/1000 ft of row for single row plantings, And 2.4 fl oz/1000 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.	<b>DO NOT</b> make more than one application per season or apply within 30 days before harvest.
Radishes	Root maggot	0.5 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 <i>VESPER</i> 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 the water-based spray as a band of 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 <i>VESPER</i> per acre. Apply only once per season. <b>DO NOT</b> use Rutabaga tops for food or feed purposes.

#### FOILAR APPLICATION TO BRUSSELS SPROUTS ONLY:

Brussel sprouts	Amyrworms Cabbage aphid Cutworms Imported Cabbageworm	1 -2 pints/ acre	Using conventional power-operated spray equipment, apply <i>VESPER</i> in 20-150 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 3 times per season. Apply no later than 21 days before harvest.
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#### SPECIFIC USE RESTRICTIONS:

- PRE-HARVEST INTERVAL:** For all listed crops except foliar applications to Brussels sprouts **DO NOT** apply within 30 days of harvest. For foliar applications to Brussels sprouts **DO NOT** apply within 21 days of harvest.
- DO NOT** make a second application of any chlorpyrifos containing products within 10 days of the first application

#### CORN (FIELD CORN AND SWEET CORN, INCLUDING CORN GROWN FOR SEED)

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

#### CONSERVATION TILLAGE: PREPLANT, AT-PLANT, OR PRE-EMERGENCE APPLICATIONS

Apply as a broadcast spray to surface trash and exposed soil using power-operated ground spray equipment. Use a total spray volume of 20 gpa or more. Use a higher rate in the rate range to extend residual control.

**TANK MIXING:** *VESPER* may also be applied in tank mixtures with paraquat or glyphosate and/or liquid fertilizer solutions. See **MIXING DIRECTIONS** section for tank mixing instructions. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for each product used in combination with *VESPER*.

PESTS	<i>VESPER</i>
Amyrworms Cutworms	2 pints/acre

#### POST-EMERGENCE APPLICATION

Apply as a post-emergence broadcast spray using sufficient spray volume to ensure thorough coverage of treated plants, but no less than 15 gpa for ground spray equipment or 2 to 5 gpa for aircraft equipment. Control may be reduced at low spray volumes under high temperature and wind conditions. *VESPER* may be tank mixed with glyphosate products when application is to be made to glyphosate-tolerant corn.

**NOTE:** **DO NOT** apply aerially in Mississippi.

**CHEMIGATION:** *VESPER* may be broadcast applied post-emergence through sprinkler irrigation systems at specified application rates to control listed foliar pests. For best results, tank mix *VESPER* with 2 pints of non-emulsifiable oil. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

PESTS	<i>VESPER</i>
Grasshoppers	½ - 1 pint/acre
Aphids Armyworms Chinch bugs <sup>1</sup> Corn rootworm adults <sup>2</sup> European corn borer <sup>3</sup> Webworms <sup>4</sup> Western beat cutworm	1 – 2 pints/acre
Corn earworm Southwestern corn borer <sup>6</sup>	1 ½ - 2 pints/acre
Billbugs <sup>1</sup> Common stalk borer <sup>7</sup> Cutworms <sup>3</sup> Flea beetle adults <sup>1</sup> Lesser cornstalk borer	2 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

- For best billbug, chinch bug, or flea beetle control, ground apply in a minimum spray volume of 20 to 40 gpa at 40 psi. If corn is less than 6 inches tall, apply in a 9 – 12 inch wide band over the row. For corn greater than 6 inches tall, apply using drop nozzles directed to the base of the plant. **DO NOT** reduce the application rate for banded or directed applications. Concentrate the full labeled dosage rate in the treated zone. When chinch bugs continue to immigrate to corn over a prolonged period or under extreme pest pressure, a second application may be needed.
- The specified dosage will control silk clipping by **corn rootworm adults**.
- For **cutworms**, it is preferable to apply *VESPER* when soil is moist and worms are active on or near the soil surface or worms may be protected from the spray and effectiveness will be reduced. Shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment may improve control. A second application may be required if damage or density levels exceed economic thresholds established for your area.
- For **webworm** control, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment is necessary.
- For **European corn borer** control, use 1 ½ pints per acre when application is made with power-operated ground or aerial equipment or 1 – 2 pints per acre when application is made through a sprinkler irrigation system. University research indicates that achieving greater than 50% control of first-generation European borer with a single liquid insecticide treatment is highly dependent upon timing, insecticide placement, and weather conditions.
- For **southwestern corn borer**, a second application may be applied 21 days later if needed due to re-infestation.
- DO NOT** use *VESPER* in combination with a burn-down herbicide for control of common stalk borer. For **common stalk borer** control, treat approximately 11 days after application of glyphosate if after burn-down with paraquat herbicide is complete (3 to 5 days).

**SPECIFIC USE RESTRICTIONS:**

- Pre-Harvest Interval:** **DO NOT** apply within 21 days before harvest of grain or ears.
- DO NOT** apply more than 6 pints of *VESPER* (lb ai chlorpyrifos) per acre per year.
- DO NOT** make more than 3 applications of any product containing chlorpyrifos per season, including the maximum allowed of 2 granular applications, at the 1 lb ai chlorpyrifos rate.
- DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- Maximum single application rate is 2 pints of *VESPER* (1 lb ai chlorpyrifos) per acre.
- DO NOT** apply in tank mixes with Steward or Lightning herbicides.
- If more than 1 lb ai granular chlorpyrifos per acre is applied at-plant (for a maximum of 1.3 ai per acre per year), only 1 additional application of a liquid product containing chlorpyrifos at 1 lb per acre is allowed per season, for a total of 2.3 lb ai chlorpyrifos per acre per year.

**COTTON  
(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a broadcast foliar spray using aircraft or ground spray equipment in all states except Arizona and California. Use a higher rate in the rate range when there is increased pest pressure. Use sufficient spray volume to ensure thorough coverage of treated plants, but no less than 10 gpa for ground spray equipment or 2 gpa for aircraft equipment. Increase spray volume when foliage is dense and/or pest population is high and/or under high temperature and wind conditions. Treat when field counts indicate damaging insect populations are developing or present.

**CHEMIGATION:** *VESPER* may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

Proper application methods are necessary to ensure thorough spray coverage and correct rate, and minimize off-target drift. Follow **APPLICATION GUIDELINES** for ground and aerial application and **SPRAY DRIFT MANAGEMENT** recommendations in **USE INFORMATION** section of this label.

**ALL STATES EXCEPT ARIZONA AND CALIFORNIA**

PESTS	VESPER
Cotton fleahopper Plant bugs ( <i>Lygus</i> , Mirids)	3/8 – 1 pint/acre
Fall armyworm Grasshopper Thrips Yellow-striped armyworm	½ - 1 pint/acre
Cotton aphid	½ - 2 pints/acre
Spider mites <sup>1</sup>	1 pint/acre
Beet armyworm Cotton bollworm <sup>2</sup> Cutworms Pink bollworm <sup>2</sup> Salt marsh caterpillar Tobacco budworm <sup>2</sup>	1 ½ - 2 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

- Spider mites:** When large numbers of eggs are present, scout the treated area in 3 to 5 days. If newly hatched nymphs are present, make a follow-up application of a non-chlorpyrifos product that is effective against mites.
- Bollworms and budworms:** For best results, it is suggested that fields be scouted twice per week and applications made when worms are ¼ inch or less in length.

**ARIZONA AND CALIFORNIA**

PESTS	VESPER
Armyworms Cotton aphid Cotton fleahopper Lygus Salt marsh caterpillar Thrips	1 – 2 pints/acre
Boll weevil Cotton bollworm <sup>1</sup> Cutworms Pink bollworm <sup>1</sup> Tobacco budworm <sup>1</sup>	2 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

- Bollworms and budworms:** For best results, it is suggested that fields be scouted twice per week and applications made when worms are ¼ inch or less in length.

**SPECIFIC-USE RESTRICTIONS:**

**PRE-HARVEST INTERVAL: DO NOT** apply within 14 days before harvest.

- DO NOT** apply more than 6 pints of *VESPER* (3 lb of chlorpyrifos) per acre per year.
- DO NOT** make more than 3 applications of *VESPER* or other products containing chlorpyrifos per crop season.
- DO NOT** make a second application of *VESPER* or other products containing chlorpyrifos within 10 days of the first application.
- DO NOT** allow meat or dairy animals to graze in treated areas.
- DO NOT** feed gin trash or treated forage to meat or dairy animals.
- Maximum single application rate is 1 lb of chlorpyrifos per acre.

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		
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

**GET THE WORMS AT THIS STAGE**

**CRANBERRY  
(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a broadcast foliar spray. Use sufficient spray volume to ensure thorough coverage, but not less than 15 gpa. Except for control of cranberry weevil, treat when field counts indicate damaging insect populations are developing or present.

PESTS	<i>VESPER</i>
Brown spanworm Cranberry fruitworm Cranberry weevil <sup>1</sup> Cutworms Fireworms Sparganothis fruitworm	3 pints/acre

**CHEMIGATION:** *VESPER* insecticide may be applied through sprinkler irrigation systems to control listed pests. Apply at specified broadcast application rates. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

**PEST-SPECIFIC USE DIRECTIONS:**

- For weevil control, apply once at flower bud development (late May, early June) and, if weevils are present, once after 100% bloom (early to mid-July).

**SPECIFIC USE PRECAUTIONS:**

- PRE-HARVEST INTERVAL:** **DO NOT** apply within 60 days before harvest.
- DO NOT** make more than 2 applications of *VESPER* or other product containing chlorpyrifos
- DO NOT** make second application within 10 days of the first application.
- Maximum single application rate is 1.5 lb ai chlorpyrifos per acre.
- Apply only after the winter flood water has been removed. To avoid pesticide contamination of flood waters, **DO NOT** apply when bogs are flooded.

**FIG (CALIFORNIA ONLY)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow work entry into treated areas during the restricted entry interval (REI) of 4 days unless PPE required for early entry is worn. Apply *VESPER* as a dormant application in late winter prior to beetle emergence and prior to leaf formation. Use a spray volume of 10 gpa or more and apply as a broadcast spray to the soil surface using power-operated ground spray equipment. On the day of treatment, incorporate *VESPER* into the top 3 inches of soil using suitable equipment.

PEST	<i>VESPER</i>
Dried fruit beetle	2 quarts / acre

**SPECIFIC USE RESTRICTIONS:**

- PRE-HARVEST INTERVAL:** **DO NOT** apply within 217 days (7 months) before harvest.
- Make only 1 application per year of *VESPER* or other product containing chlorpyrifos.
  - Maximum single application rate is 2 lb ai chlorpyrifos per acre.

**GRAPE (AREAS EAST OF THE CONTINENTAL DIVIDE ONLY)  
(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**SOIL SURFACE APPLICATION**

Apply *VESPER* just before the pest emerges from the soil. Apply 2 quarts of the diluted spray mixture to the soil surface on a 15 square foot area (4.4 ft. circle) around the base of each vine.

PESTS	<i>VESPER</i>
Grape root borer	4 ½ pints/100 gallons of water

**SPECIFIC USE PRECAUTIONS:**

- DO NOT** allow spray to contact fruit or foliage.

**SPECIFIC USE RESTRICTIONS:**

- PRE-HARVEST INTERVAL:** **DO NOT** apply within 35 days before harvest
- DO NOT** make more than 1 application per season of *VESPER* in grapes or other product containing chlorpyrifos.
- Based upon available residue data, the use of *VESPER* in grapes is restricted to areas east of the Continental Divide only.
- Maximum single application rate for soil surface application is 2.25 lb ai chlorpyrifos per acre.

**ONION (DRY BULB)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**AT-PLANT SOIL DRENCH APPLICATION**

For direct seeded onions to control onion maggot, apply *VESPER* in a water-based spray as a 2 – 4 inch wide band over the row at planting time in a minimum of 40 gpa. Equivalent rates of insecticide spray required per 1000 feet of row for various row spacings are given in the accompanying table. Shallow incorporation is necessary. Placement behind the planter shoe and in front of the press/wheel is recommended. Phytotoxicity may occur if *VESPER* is sprayed directly onto onion seeds. **DO NOT** mix *VESPER* with other pesticide products.

**NOTE:** The user should exercise reasonable judgment and caution with this product. Until familiar with results under user planting and growing conditions, limit application of this product to small area to determine plant tolerance and extent of injury if such occurs prior to initiating large scale application.

ROW SPACING	VESPER (fl. oz./1000 ft. of row)			
	6-inch	10-inch	12-inch	18-inch
32 fl oz/acre	0.37	0.61	0.73	1.1

**SPECIFIC USE RESTRICTIONS:**

- **DO NOT** make more than 1 application per year.
- Maximum single application rate is 0.03 lb ai chlorpyrifos per 1000 feet of row.

**POST-PLANT SOIL DRENCH APPLICATION**

To control onion maggot and seedcorn maggot, apply as an early season directed spray to the base of onion seedlings or transplants during peak egg laying. Use a minimum of 100 gpa for thorough wetting.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 60 days before harvest.
- **DO NOT** make more than 2 applications (at plant plus post-plant) per year.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.
- **DO NOT** aerially apply in Mississippi.

**ORCHARD FLOORS (ANT CONTROL IN ALMOND, PECAN AND WALNUT) - (NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a ground broadcast spray directed to the orchard floor using ground application equipment that will apply the spray uniformly. **DO NOT** allow spray to contact foliage or fruit. Treat when ant activity becomes evident in the orchard. Since worker ants cease most of their foraging activity at temperatures above 90 °F, best results will be achieved if applied at a time of day when temperatures are below 90 °F.

**CHEMIGATION: VESPER** may be applied to almond, pecan and walnut orchard floors through sprinkler irrigation systems only if the system uniformly covers the soil surface at the base of the tree. Use specified broadcast application rates to control listed pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

CROP	PEST	VESPER
Almonds	Navel orangeworm, Peach twig borer, San Jose scale	4 - 8 pints/acre (2 - 4 lbs. a.i./acre)
Walnuts	Codling moth, Walnut scale, Walnut husk fly	4 - 8 pints/acre (2 - 4 lbs. a.i./acre)
Pecans	Pecan nut casebearer, Fall webworm	1.5 - 4 pints/acre (0.75 - 2 lbs. a.i./acre)
	<i>Phylloxera</i> spp. <sup>1</sup> , Black pecan aphid, Hickory shuckworm <sup>2</sup> , Pecan leaf scorch mite (suppression) <sup>3</sup> , Ants (excluding fire, harvester, pharaoh and carpenter) <sup>4</sup>	2 - 4 pints/acre (1 - 2 lbs. a.i./acre)
	Yellow pecan aphid <sup>5</sup> , Blackmargined aphid <sup>5</sup> , Spittlebugs	

1. For best *Phylloxera* spp. control, make 2 applications at 10-day intervals using a minimum of 1.0 pint of *VESPER* per acre starting at bud swell.
2. For best results make 2 applications, 10-14 days apart.
3. To suppress pecan leaf scorch mite, use a preventative program.
4. 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.
5. For control of yellow pecan aphid and blackmargined aphid, apply in tank mix combination with the listed rate of a pyrethroid insecticide labeled for control or suppression of these aphids.

Eliminate weed growth that would prevent uniform coverage of the orchard floor by mowing or herbicide treatment. Foliar applications of *VESPER* may be made in addition to the orchard floor treatment.

**SPECIFIC USE PRECAUTION:**

- To avoid contamination of irrigation tail waters, **DO NOT** flood irrigate within 24 hours of application of *VESPER*.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 14 days before harvest.
- Maximum single application rate for pecans is 2 lb. ai chlorpyrifos per acre.
- Maximum single application rate for almonds and walnuts is 4 lb. ai chlorpyrifos per acre.
- **DO NOT** apply more than 8 pints of *VESPER* (4 lb ai chlorpyrifos) per acre per year to the orchard floor.
- If an application is made at the 8 pint rate, then a second application is not allowed.
- **DO NOT** make more than 2 applications totaling 8 pints of *VESPER* or other products containing chlorpyrifos per acre per year to the orchard floor.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in treated orchards.

**PEANUT**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn. Apply to the soil surface as a pre-plant broadcast spray followed by immediate soil incorporation to a depth of 3 to 4 inches using a disc, field cultivator, or equivalent equipment. Use a minimum of 10 gpa total spray.

PEST	VESPER
Wireworms (suppression)	4 pints/acre

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 21 days before harvest
- The combined total of pre-plant and post-plant applications of *VESPER*, Chlorpyrifos 15G or other products containing chlorpyrifos must not exceed 4 lb ai chlorpyrifos per acre per year
- Aerial application to peanuts is prohibited in all states.
- **DO NOT** make more than 1 pre-plant application of *VESPER* per season.
- **DO NOT** feed treated peanut forage or hay to meat or dairy animals.
- Maximum single application rate is 2 lb ai chlorpyrifos per acre.

**PEPPERMINT & SPEARMINT- (NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a broadcast spray using a total spray volume of 10 gpa or more using ground equipment.

**CHEMIGATION: VESPER** may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

PESTS	<i>VESPER</i>
Cutworm <sup>1</sup>	2 – 4 pints/acre
Mint root borer <sup>2</sup>	4 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

1. **CUTWORMS:** Apply during May and June when field counts indicate damaging insect populations are developing or present. When larvae are less than ¾ in length, use the 2 pint rate; otherwise use the higher rate.
2. **MINT BORER:** Apply post-harvest when field counts indicate damaging insect populations are developing or present. If ground applied, follow with approximately 1 acre inch of sprinkler irrigation immediately after application to incorporate the insecticide into the soil or apply by chemigation.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 90 days before harvest.
- Make only 1 application of *VESPER* or other product containing chlorpyrifos during the growing season.
- **DO NOT** make more than 1 pre-plant incorporated application in the spring.
- **DO NOT** use in conjunction with a broadcast foliar application of *VESPER* for cutworm control.
- Make only 1 post-harvest application per season of *VESPER* or other products containing chlorpyrifos.
- Maximum single application rate is 2 lb ai chlorpyrifos per acre.

**SORGHUM – GRAIN SORGHUM (MILO)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a post-emergence broadcast spray using sufficient spray volume to ensure thorough coverage of treated plants, but not less than 15 gpa for ground spray equipment or 2 to 5 gpa for aircraft equipment.

**NOTE: DO NOT** aerially apply in Mississippi. Control may be reduced at low spray volumes under high temperature and wind conditions.

**CHEMIGATION: VESPER** insecticide may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

PESTS	<i>VESPER</i>
Sorghum midge <sup>1</sup>	½ pint/acre
Grasshoppers	½ - 1 pint/acre
Yellow sugar cane aphid and other aphids	
Greenbug <sup>2</sup>	½ - 2 pints
Armyworms	1-2 pints/acre
Cutworms	
Chinch bugs <sup>3</sup>	
Lesser cornstalk borer <sup>3</sup>	
Webworms	1 pint/acre
European and Southwestern corn borer	1 ½ - 2 pints/acre
Corn earworm	2 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

1. **SORGHUM MIDGE:** Apply when 30% to 50 % of the seed heads are in bloom.
2. **GREENBUG:** Use a higher rate within the indicated rate range when pest populations are high.
3. **CHINCH BUGS AND LESSER CORNSTALK BORER:** Apply as 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 in the row. For plants less than 6 inches high, apply an 8 to 12 inch band centered over the row. **DO NOT** reduce the dosage for banded or directed applications. Concentrate the full labeled dosage rate in the treated zone.

**SPECIFIC USE PRECAUTIONS:**

- To minimize the potential for chemical injury, **DO NOT** apply *VESPER* to drought stressed grain sorghum within 3 days following irrigation or rain except where the product is applied in irrigation water.
- Be aware that sorghum lines used in seed production fields may be more susceptible to chemical injury. Susceptible inbred lines or hybrids are likely to be at greater risk of yielding-reducing chemical injury when treated at the higher application rates. **DO NOT** apply more than 1 pint of *VESPER* per acre to seed sorghum if the additional risk of crop injury is unacceptable.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL:** **DO NOT** harvest for grain, forage, fodder, hay, or silage within 30 days after application of 1 pint of *VESPER* per acre or within 60 days after application or rates above 1 pint per acre.
- **DO NOT** apply more than 3 pints of *VESPER* (1.5 lb ai chlorpyrifos) per acre per year.
- **DO NOT** make more than 3 applications for a total of 3 pints of *VESPER* or other products containing chlorpyrifos. If the 2 pint per acre application rate is used, then only one application may be made per season, or the second application must not exceed 1 pint per acre, for a total of 3 pints per acre per year.
- **DO NOT** make a second application within 10 days of the first application.
- **DO NOT** treat sweet varieties of sorghum.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.

**SOYBEAN - (NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**SOIL APPLICATION**

Apply as a broadcast treatment to soil surface in a minimum spray volume of 10 gpa using suitable ground spray equipment or as a band application. Use a higher rate in the rate range when there is increased pest pressure. For band application, equivalent rates of insecticide spray required per 100 feet of row for various row spacing are given in the accompanying table. For at-plant treatments, apply in a 4 – 6 inch band centered over the row. Position the spray nozzle in front of the planter shoe or press wheel or after the press wheel followed by a drag chain for light incorporation. **DO NOT APPLY AS AN IN-FURROW TREATMENT.** For a post-emergence rescue treatment, apply as a directed spray in a 9 – 12 inch band at the base of the plant. For plants less than 6 inches tall, apply over-the-top in a 6 to 12 inch band.

PESTS	<i>VESPER</i>
Cutworms Lesser cornstalk borers	1 -2 pints/acre

**AMOUNT OF SPRAY REQUIRED, IN FLUID OUNCES PER 100 FEET OF ROW AT VARIOUS ROW SPACINGS**

AMOUNT OF SPRAY PER ACRE	VARIOUS ROW SPACINGS MEASURE 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 APPLICATION**

Apply as a post-emergence broadcast spray using sufficient spray volume to ensure thorough coverage of treated plants, but no less than 15 gpa for ground spray equipment or 2 – 5 gpa for aircraft equipment. Apply when field counts indicate damaging pest populations are developing or present. *VESPER* may be tank mixed with glyphosate products such as Glyphomax XRT or Durango when application is to be made to glyphosate-tolerance soybeans. Use a higher rate in the rate range when there is increased pest pressure.

**CHEMIGATION:** *VESPER* may be applied through sprinkler irrigation system at specified broadcast application rates to control listed foliar pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

PESTS	<i>VESPER</i>
European corn borers Southern green stink bugs	2 pints/acre
Aphids (including Chinese) Bean leaf beetles Corn earworms Cutworms Saltmarsh caterpillars and other wooly bears	1 -2 pints/acre
Armyworms Mexican bean beetles	1 – 1 ½ pint/acre
Grasshoppers Green cloverworm Spider mites* Velvetbean caterpillars	½ - 1 pint/acre

**PEST-SPECIFIC USE DIRECTIONS:**

1. **SPIDER MITES:** When large numbers of eggs are present, scout the treated area in 3 to 5 days. If newly hatched nymphs are present, make a follow-up application of a non-chlorpyrifos product that is effective against mites.

**SPECIFIC USE PRECAUTION:**

- On determinate soybeans, **DO NOT** make more than 1 application after pod set.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL:** **DO NOT** apply within 28 days before harvest.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 14 days of the first application.
- **DO NOT** make more than 3 applications per year of *VESPER* or other products containing chlorpyrifos.
- **DO NOT** allow meat or dairy animals to graze in treated areas or otherwise feed treated soybean forage, hay, and straw to meat or dairy animals.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.



**STRAWBERRY -(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**PREPLANT INCORPORATION TREATMENT:** Use *VESPER* at the following rates by application in sufficient water to the soil surface and incorporate into the soil in the spring for protection of strawberries during the following year:

PESTS	<i>VESPER</i>
Garden symphylans, Grub	4 pints/acre (2 lbs a.i./acre)

**FOLIAR APPLICATION**

Apply as a broadcast foliar spray when buds first appear and repeat application 10 to 14 days later. Use a minimum spray volume of 40 gpa.

PESTS	<i>VESPER</i>
Strawberry bud weevil	2 pints/acre

**POSTHARVEST APPLICATION:** For strawberry crown moth, apply 1 quart (1 lb. a.i.) per acre as a directed spray to crown of strawberry plants immediately after harvest and after plants are topped. Use a minimum spray volume of 100 gallons per acre and repeat application if required 14 to 18 days later. **DO NOT** sprinkle irrigate for one week following application.

**SPECIFIC USE PRECAUTIONS:**

- VESPER* should not be tank mixed with pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination non-injurious under your current conditions of use.
- Phototoxicity may occur when *VESPER* is applied to strawberries under conditions of high temperature and drought stress.

**SPECIFIC USE RESTRICTIONS**

- FOR PRE-BLOOM USE ONLY. DO NOT** apply after berries start to form or when berries are present.
- PRE-HARVEST INTERVAL: DO NOT** apply within 21 days before harvest.
- The maximum single application rate for foliar applications is 2 pints *VESPER* per acre. **DO NOT** make more than 2 foliar applications for a total of 4 pints (2 lb. ai chlorpyrifos) per acre per year.
- The maximum single application rate for pre-plant soil incorporation is 4 pints *VESPER* per acre. **DO NOT** make more than 1 pre-plant soil incorporation application for a total of 4 pints (2 lb. ai chlorpyrifos) per acre per year.
- DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first foliar application and within 14 days for post-harvest application.

**SUGARBEET -(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL:** **DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**SOIL APPLICATION (AT PLANTING OR PRE-PLANT INCORPORATED)**

To reduce feeding damage from early season insects such as cutworms, apply at planting or as a pre-plant treatment and incorporate to a depth of 1 to 2 inches. **DO NOT** apply as an in-furrow treatment. Apply 1 pint of *VESPER* insecticide per planted acre to a 10 inch wide band centered over the row for furrows 30 inches apart. (For rows 30 inches apart, this is equivalent to 9.2 fl oz of *VESPER* per 10,000 feet or row). For other row widths, adjust the spray volume per planted acre in proportion to the length of row actually treated.

**POST-EMERGENCE APPLICATION**

Apply specified rate as a broadcast or banded foliar spray. Treat when field counts indicate that damaging insect populations are developing or present.

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

**BANDED FOLIAR APRAVY:** Apply the specified dosage in water using a minimum of 7 gallons or spray volume in a 5 to 7 inch wide band center over the row. **DO NOT** reduce the rate for band application. Concentrate the full labeled dosage rate (see BAND rates in table below) in the treated zone. For best results, band-applied treatments should be lightly incorporated, either mechanically or with irrigation.

PESTS	<i>VESPER</i>	
	BROADCAST	BAND
Grasshoppers <sup>1</sup>	½ - 1 pint/acre	-
Beet armyworms	1 ½ - 2 pint/acre	1 – 1 1/3 pint/acre
Cutworms	2 pints/acre	1 1/3 pints/acre
Sugarbeet root maggot adults <sup>2,5</sup>	½ - 1 pint/acre	-
Sugarbeet root maggot larvae <sup>3,5</sup>	-	1 1/3 – 2 pints/acre
Sugarbeet root maggot larvae <sup>4,5</sup>	2 pints/acre	1 1/3 – 2 pints/acre

Band application to control **Sugar Beet Root Maggot:** Apply 2 pints of *VESPER* 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 *VESPER* per 10,000 feet of row. For band application, **DO NOT** apply less than 20 gallons of water per acre on a broadcast basis.

**PEST-SPECIFIC USE DIRECTIONS:**

- GRASSHOPPERS:** The low rate will control small nymphs (1<sup>st</sup> through 3<sup>rd</sup> instar).
- SUGARBEET ROOT MAGGOT ADULTS:** Apply anytime from 7 days before until 3 days after peak adult emergence in order to target adults present at time of application based on local field trap monitoring.
- SUGARBEET ROOT MAGGOT LARVAE:** Use as primary treatment to control root maggot larvae. Base application timing on local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.
- SUGARBEET ROOT MAGGOT LARVAE:** Use a supplemental post-emergence treatment following an at-plant insecticide application for control of root maggot larvae. Base application timing on local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.

5. To prevent potential development of insecticide resistance in **SUGARBEET ROOT MAGGOT**, producers are encouraged to take the following steps:

- A. Avoid making more than 2 applications of *VESPER* per season when adults are active.
- B. If an organophosphate insecticide was applied at planting, make no more than 1 post-emergence application of *VESPER* when adults are active.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 30 days before harvest of beet roots and tops.
- **DO NOT** apply more than 6 pints of *VESPER* (3 lb ai chlorpyrifos) per acre per year.
- **DO NOT** make more than 3 applications of *VESPER* or other products containing chlorpyrifos per season.
- **DO NOT** make a second application of *VESPER* or other products containing chlorpyrifos within 10 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in treated areas or harvest treated beet tops as feed for meat or dairy animals within 30 days of last treatment.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.
- To avoid unacceptable crop injury, **DO NOT** tank mix *VESPER* with Quadris or Headline. Quadris or Headline should not be tank mixed with any EC formulation or any tank mix containing an oil adjuvant.

**SUNFLOWER  
(NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**PRE-PLANT INCORPORATION APPLICATION**

Broadcast apply to soil surface in a minimum spray volume of 10 gpa using suitable ground spray equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a disc, field cultivator, or equivalent equipment. Use a higher rate in the rate range when there is increased pest pressure.

PESTS	<i>VESPER</i>
Cutworms	2 – 4 pints/acre

**POST-EMERGENCE BROADCAST APPLICATION**

Apply as a post-emergence broadcast spray using sufficient spray volume to ensure thorough coverage of treated plants, but not less than 75 gpa for ground spray equipment or 2 to 5 gpa for aircraft equipment. Use a higher rate in the rate range when there is increased pest pressure.

PESTS	<i>VESPER</i>
Grasshoppers	1 pint/acre
Banded sunflower moth	1 – 1 ½ pints/acre
Seed weevil <sup>4</sup>	
Stem weevil <sup>2</sup>	
Sunflower beetle larvae and adults <sup>1</sup>	
Sunflower moth <sup>3</sup>	
Woollybears	
Cutworms	2 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

1. **SUNFLOWER BEETLE:** For control of larvae or adults, treat when field counts indicate 10 larvae or 1 to 2 adults per seedling.
2. **STEM WEEVIL:** Optimal treatment time is within 5 to 7 days after adult weevils begin to appear.
3. **SUNFLOWER MOTH:** To control, make first application during 1% to 5% bloom stage.
4. **SEED WEEVIL:** To control, apply when field counts indicate 10 to 20 adults per plant for oil crop varieties and 1 to 3 adults per plant on confectionery crop varieties.

**SPECIFIC USE RESTRICTIONS**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 42 days before harvest.
- **DO NOT** apply more than 6 pints of *VESPER* (3 lb ai chlorpyrifos) per acre per year.
- **DO NOT** make more than 3 applications per season of *VESPER* or other products containing chlorpyrifos for a total of 6 pints of *VESPER* (3 lb ai chlorpyrifos) per acre per year.
- If the first application is made at 2 lb ai per acre rate, then only one additional application of 1 lb ai per acre may be made.
- The maximum single application rate for preplant soil incorporation applications is 4 pints *VESPER* (2lb ai chlorpyrifos) per acre. **DO NOT** make more than 1 application for a total of 4 pints (2 lb ai chlorpyrifos) per acre per year.
- The maximum single application rate for post-emergence broadcast foliar treatment is 2 pints *VESPER* (1 lb ai chlorpyrifos) per acre. **DO NOT** make more than 2 applications for a total of 4 pints (2 lbs ai chlorpyrifos) per acre per year.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in the treated areas.

**SWEET POTATO**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply to the soil surface as a pre-plant broadcast spray to reduce the feeding damage caused by listed pests. Use a spray volume of 10 gpa or more. Incorporate immediately after application to a depth of 4 to 6 inches using a rotary hoe, disc cultivator, or other suitable incorporation equipment. Plant sweet potatoes in the usual manner, no more than 14 days after treatment. Delaying planting more than 14 days after application will reduce the time interval of protection against feeding damage.

PESTS	VESPER
<i>Conderus</i> (wireworm) Sweet potato flea beetle <i>Systema</i> (flea beetle)	4 pints/acre

**SPECIFIC USE PRECAUTION:**

- *VESPER* will not control false wireworms, white fringe beetle or other grubs that attack sweet potatoes.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 125 days before harvest.
- **DO NOT** make more than 1 application of *VESPER* or other product containing chlorpyrifos per season.
- Maximum single application rate is 2 lb ai chlorpyrifos per acre.
- **DO NOT** apply aerially in Mississippi.

**TOBACCO**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply as a pre-plant broadcast spray to reduce the feeding damage caused by listed pests. Apply 24 to 48 hours before bedding and transplanting using a spray volume of 10 gpa or more. Incorporate immediately after application to a depth of 2 to 4 inches using suitable incorporation equipment.

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

PESTS	VESPER
Cutworms Flea beetles Mole crickets Root maggots Wireworms	2 pints/acre per season

To control the above listed pests and suppress populations of rootknot nematodes in all tobacco growing regions, use *VESPER* in a tank mix with Nemacur 3 at the rate of 2 quarts of *VESPER* plus 4 quarts of Nemacur 3 nematicide per acre. **DO NOT** exceed 2 pints *VESPER* per acre per season. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for Nemacur 3 used in combination with *VESPER*. Apply the specified rate(s) to the soil surface in a spray volume of 10 gpa or more 24 to 48 hours before bedding and transplanting. Immediately, following application, incorporate into the soil to a depth of at least 4 inches using suitable equipment. Where the nematode species *Meloidogyne arenaria* or *M. javanica* are present or high populations of *M. incognita*, apply Telone II soil fumigant at the specified label rate.

**SPECIFIC USE RESTRICTIONS:**

- **DO NOT** make more than 1 application of *VESPER* or other product containing chlorpyrifos per season.
- Maximum single application rate is 1 lb ai chlorpyrifos per acre.

**TREE FRUITS AND ALMONDS (DORMANT/DELAYED DORMANT SPRAYS) Apples, Cherries, Nectarines, Peaches, Pears, Plums, Prunes, Peaches (NOT FOR USE IN MISSISSIPPI)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days for tree fruits, and 24 hours for Almonds unless PPE required for early entry is worn.

Apply as a dormant or delayed dormant spray. While *VESPER* may be used without oil, oil is recommended to control additional pests such as European red mite. See **PRECAUTIONS** for use of oil below. Apply as a concentrate or dilute spray using conventional, power-operated spray equipment. For dilute sprays (greater than 200 gpa), use sufficient spray volume to completely wet tree foliage, but not to point of runoff. For concentrate sprays (less than 200 gpa), uniformly apply an equivalent amount of *VESPER* per acre.

Use a higher rate in the rate range when there is increased pest pressure.

CROP	INSECT	VESPER
Apples Almonds Cherries Nectarines Peaches Pears Plums Prunes Peaches	Climbing cutworms <i>Lygus</i> Oblique banded leafroller Pandemis leafroller Rosy apple aphid San Jose scale Climbing cutworms Pear psylla adults San Jose scale Mealy plum aphid Peach twig borer	½ - 4 pints/acre

**SPECIFIC USE PRECAUTIONS:**

- Cold or dry conditions may cause *VESPER* plus oil sprays to infuse into trees, resulting in bud damage or bud drop. **DO NOT** apply until winter rains or irrigation has replenished soil moisture such that bark and twigs are not desiccated.
- To avoid contamination of irrigation tail waters, **DO NOT** flood irrigate within 24 hours of application of *VESPER*.
- Avoid contact with foliage in sweet cherries as premature leaf drop may result.

**SPECIFIC USE RESTRICTIONS:**

- **DO NOT** use more than 4 pints of *VESPER* (2 lb ai chlorpyrifos) per acre per year as a dormant/delayed dormant application.
- Post-bloom application to apples is prohibited.
- **DO NOT** make a soil or foliar application of *VESPER* or products containing chlorpyrifos within 10 days of a dormant/delayed dormant application of chlorpyrifos to the orchard.
- Make only 1 application of chlorpyrifos during the dormant season.
- **DO NOT** allow meat or dairy animals to graze in treated orchards.

**ADDITIONAL RESTRICTIONS SPECIFIC TO CALIFORNIA:**

- **DO NOT** use more than 1% dormant oil in almond orchards less than 4 years old.
- Use a minimum of 250 gpa of total spray volume.
- Use up to 2% supreme oil with no more than 4 gpa on almonds.
- Use up to 2% supreme oil with no more than 6 gpa on peaches and nectarines.
- Refer to the University of California pest management guide for apples, pears, plums, and prunes.
- In orchards with high over wintering populations of European red mite or brown almond mite, use higher spray volumes that allow for the use of higher per acre rates of oil.
- **DO NOT** use any adjuvants or surfactants in addition to, or as a substitute for, petroleum spray oil in a tank mix with *VESPER*.
- **DO NOT** apply on almonds in the following counties in California: Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo, and Yuba.

**TREE NUTS (FOLIAR SPRAYS)**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

Apply *VESPER* as a foliar spray at the dosages indicated to control pests listed in the following table. Mix the required dosage in sufficient water to ensure thorough and complete coverage of the foliage and crop and apply as a concentrate or dilute spray using conventional, power-operated spray equipment. For dilute sprays applied to tree nut crops, mix the required dosage in sufficient water to allow for spray to runoff. For concentrate sprays, apply an equivalent amount of *VESPER* per acre. Treat when pests appear or in accordance with local conditions. Aerial application may result in less effective insect control because of reduced coverage.

**NOTE: DO NOT** aerially apply in Mississippi. Consult your State agricultural experiment station, certified pest control advisor or extension service specialist for specific use information in your area.

CROP	INSECTS	<i>VESPER</i>	
Almonds	Navel orangeworm	4 pints/acre	
	Peach twig borer		
	San Jose scale		
Filberts	Eye-spotted bud moth	3 -4 pints/acre	
	Filbert aphid		
	Filbert leafroller		
	Filbert worm		
	Obliquebanded leafroller		
	Omnivorous leaflier Winter moth		
Pecans	Black margined aphid <sup>1</sup> Yellow pecan aphid <sup>1</sup>	1 -4 pints/acre	
	Fall webworm Pecan nut casebearer	1 ½ - 4 pints/acre	
	Black pecan aphid Hickory shuckworm <sup>2</sup> Pecan leaf scorch mite (suppression) <sup>4</sup> Phylloxera spp. <sup>3</sup>	2 -4 pints/acre	
	Walnuts	Codling moth Walnut scale	4 pints/acre

**PEST-SPECIFIC USE DIRECTIONS:**

1. For control of **YELLOW PECAN APHID** and **BLACK MARGINED APHID**, apply in tank mix combination with the specified rate of pyrethroid insecticide labeled for control or suppression of these aphids.
2. For best results against **HICKORY SHUCKWORM**, make 2 applications, 10 to 15 days apart.
3. For best control of **PHYLLOXERA** spp., make 2 applications at a 10 day interval using a minimum of 1 pint of *VESPER* per acre starting at bud swell.
4. For suppression of **PECAN LEAF SCORCH MITE**, use a preventive program.

**SPECIFIC USE PRECAUTIONS:**

- *VESPER* is highly toxic to bees exposed to direct treatment and must not be applied when bees are foraging in the treated area.
- To avoid contamination of irrigation tail waters, **DO NOT** flood irrigate within 24 hours of application of *VESPER*.
- **DO NOT** aerially apply in Mississippi. **DO NOT** apply to almonds, filberts, or walnuts in Mississippi.

**SPECIFIC USE RESTRICTIONS:**

- **PRE-HARVEST INTERVAL: DO NOT** apply within 14 days before harvest of almonds, filberts and walnuts, or 28 days before harvest of pecans.
- **DO NOT** apply more than 8 pints of *VESPER* (4 lb ai chlorpyrifos) per acre per year as a foliar spray.
- **DO NOT** make more than 3 total applications per season of *VESPER* or other products containing chlorpyrifos to almonds, pecans, and filberts and no more than 2 applications per season on walnuts, for a maximum of 8 pints (4 lb. ai chlorpyrifos) per acre per year. If the 4 pint per acre application rate is used, then only a maximum of 2 applications may be made.
- **DO NOT** make a second application of *VESPER* or other product containing chlorpyrifos within 10 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in treated orchards.

## WHEAT

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for early entry is worn.

**(FOR USE ONLY IN ARIZONA, CALIFORNIA, COLORADO, IDAHO, KANSAS, MINNESOTA, MONTANA, NEBRASKA, NEW MEXICO, NEVADA, NORTH DAKOTA, OKLAHOMA, OREGON, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON AND WYOMING)**

### FOLIAR APPLICATION

Mix the required dosage with water and apply in a minimum of 2 gpa finished spray volume. Apply using aerial (fixed wing or helicopter) or power-operated ground spray equipment.

**CHEMIGATION:** *VESPER* insecticide may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See **CHEMIGATION (SPRINKLER IRRIGATION)** section for application instructions.

INSECTS	<i>VESPER</i>
Aphids <sup>1</sup> Grasshoppers	½ to 1 pint/acre
Army cutworms <sup>2</sup> Wheat midge <sup>3</sup>	1 pint/acre

### PEST-SPECIFIC USE DIRECTIONS:

1. Consult university extension bulletins for local treatment recommendations.
2. Control may be reduced under high temperature conditions (greater than 80 °F), under dry soil conditions, or if larvae are more than ½ inch long.
3. For control of **WHEAT MIDGE**, treatment is recommended 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). If possible, apply in the late afternoon or early evening when temperatures exceed 50 °F and wind speed is less than 7 mph.

### SPECIFIC USE RESTRICTIONS:

- **PRE-HARVEST INTERVAL: DO NOT** apply within 14 days before harvest forage and hay and within 28 days before harvest for grain and straw.
- **DO NOT** make more than 2 applications of *VESPER* or other products containing chlorpyrifos for a total of 1 lb ai chlorpyrifos per acre per year.
- Maximum single application rate is 0.5 lb ai chlorpyrifos per acre.
- **DO NOT** allow meat or dairy animals to graze or otherwise feed on treated forage within 14 days of application.
- **DO NOT** feed straw from treated wheat within 28 days of application.

## NON-FOOD AGRICULTURAL USES

### CHRISTMAS TREES (PLANTATIONS) (NOT FOR USE IN MISSISSIPPI)

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow work entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for entry is worn. Unless otherwise indicated, apply as a foliar spray using power-operation ground equipment. Thorough coverage of foliage is essential. Use a minimum of 10 gpa of finished spray with ground equipment. Use higher volume of finished spray, 20 gpa or more, when foliage is dense and/or pest density is high and/or under high temperature and wind conditions.

TREE VARIETY	INSECTS CONTROLLED	<i>VESPER</i>
Balsam fir Blue spruce Concolor Fir Douglas fir Eastern white pine Fraser fir Grand fir Noble fir Scotch pine White spruce	Adegids (cooley) (eastern spruce gall) Ants (excluding fire, carpenter, harvester and pharaoh) Aphids European pine sawfly European pine shoot moth Grasshopper Gypsy moth Mites (European red spider) (Two spotted spider) [Except in WA & OR] Pine weevils (adult) Pine needle midges Pine spittlebugs Plant bugs Spittlebugs Spruce budworms Spruce needleminers Scale <sup>2</sup> (Black pine) (Pine needle) (Pine tortoise) (Spruce bud) (Striped pine)	1 qt/acre
	Pales weevil <sup>3</sup>	3 qt/100 gal

**PEST SPECIFIC USE DIRECTIONS:**

1. When large numbers of spider mite eggs are present at the first application, a second application after 7 to 10 days may be required to control newly hatched nymphs and maintain effective control. Not for control of mites in Washington and Oregon.
2. For scale control, apply when scale crawlers are active.
3. Apply as a cut stump drench.

**SPECIFIC USE PRECAUTIONS:**

**PHYTOTOXICITY: DO NOT** apply under conditions of extreme heat or drought stress. Environmental factors and varietal differences significantly influence potential phytotoxic expression. **Testing has shown that VESPER may be used at specified rates on the following conifer species without serious phytotoxicity: balsam fir, concolor fir, Douglas fir, eastern white pine, Fraser fir, grand fir, noble fir, Scotch pine, white spruce.** Before treating large numbers of other conifer species, it is recommended that a small block of plants be treated and observed 7 to 10 days for symptoms of phytotoxicity. **Note:** The user assumes responsibility for determining if it is safe to treat other conifer species with VESPER under commercial growing conditions.

**SPECIFIC USE RESTRICTIONS:**

- **DO NOT** make more than 3 applications of VESPER or other product containing chlorpyrifos per season.
- **DO NOT** make a second application of VESPER or other product containing chlorpyrifos within 7 days of the first application.
- **DO NOT** allow meat or dairy animals to graze in the treated areas.

**SOD FARM TURF**

**WORKER RESTRICTED ENTRY INTERVAL: DO NOT** enter or allow work entry into treated areas during the restricted entry interval (REI) of 24 hours unless PPE required for entry is worn. Apply to turfgrass grown to sod. Dilute VESPER in water and apply using suitable application equipment. For best results, turf should be moist at time of treatment.

PESTS	VESPER	
	FL. OZ/1000 SQ. FT.	PINT/ACRE
Armyworms Chinch bugs Cutworms Pillbugs Sod Webworms <sup>1</sup> Turfgrass weevils Mole crickets <sup>2</sup>	0.5 – 0.75	1.5 – 2

**SPECIFIC USE DIRECTIONS:**

1. For **SOD WEBWORMS**, watering or mowing of the treated area should be delayed for 12 to 24 hours after treatment.
2. To control **MOLE CRICKETS** in turfgrass, apply VESPER through high-pressure injection or other suitable subsurface placement application equipment. Depending on the application equipment used, follow the manufacturers' recommendation for calibration and the volume of spray per acre needed to provide control or as recommended by your Agricultural Extension Service Specialist. For best results, apply when young nymphs are active.

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