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.

Yuma® 4E

Insecticide

For control of listed insects infesting certain field, fruit, nut, and vegetable crops.

Active Ingredient:
chlorpyrifos: O,O-diethyl-O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate.....44.9%
Other Ingredients.....55.1%
Total 100.0%

Contains 4 lb 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 the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for additional precautionary information including Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

EPA Reg. No. 62719-220-1381

EPA Est. _____

Distributed by
Winfield Solutions, LLC
P.O. Box 64589
St. Paul. MN 55164-0589

Net Contents __

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WINFIELD™

AgriSOLUTIONS™

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

Table of Contents

Precautionary Statements

Hazard to Humans and Domestic Animals

WARNING

May Be Fatal If Swallowed • Harmful If Absorbed Through Skin • Causes Moderate Eye Irritation

Avoid contact with skin, eyes or clothing.

Personal Protective Equipment (PPE)

Materials that are chemical-resistant to this product are barrier laminate and viton $\geq$ 14 mils.

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

- Long-sleeved shirt and long pants
- Shoes and socks

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

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant apron when mixing or loading or exposed to the concentrate
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- 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 manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

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

- Wear the personal protective equipment required above for mixers/loaders
- Wear protective eyewear if the system operates under pressure, and
- Be provided and have immediately available for use in an emergency, such as 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 WPS for agricultural pesticides [40 CFR 170.240(d)(6).

Use of human flaggers is prohibited. Mechanical flagging equipment must be used.

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

User Safety Recommendations

Users should:

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

First Aid

Organophosphate

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

Note to physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

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 from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters 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.
Read all Directions for Use carefully before applying.

This product cannot be reformulated or repackaged into other end-use products.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

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

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

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

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

PPE required for early entry into treated areas that is permitted under the Worker Protection Standard and involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves made out of any waterproof material
- Chemical-resistant footware plus socks
- 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 and disposal.

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

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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 1/4 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. 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 a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:
Container Handling: Nonrefillable container. Do not reuse or refill this container.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. Turn the container over onto its other 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. **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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

Yuma® 4E insecticide is an emulsifiable concentrate for use in listed crops. This product resists washoff once it is dry. Target pests and application rates are provided in the accompanying tables.

Use Precautions and Restrictions

Insect control may be reduced at low spray volumes under high temperature and wind conditions.

Some reduction in insect control may occur under unusually cool conditions.

Flood irrigation: To avoid contamination of irrigation tail waters, do not flood irrigate within 24 hours following a soil surface or foliar application of Yuma 4E.

Do not aerially apply this product in Mississippi.

Insecticide Resistance Management (IRM)
Yuma 4E contains a Group 1B insecticide. Insect/mite biotypes with acquired resistance to Group 1B may eventually dominate the insect/mite population if Group 1B insecticides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Yuma 4E or other Group 1B insecticides.

To delay development of insecticide resistance:
- Avoid consecutive use of insecticides with the same mode of action (same insecticide group) on the same insect species.
- Use tank mixtures or premix products containing insecticides with different modes of action (different insecticide groups) provided the products are registered for the intended use.
- Base insecticide use upon comprehensive Integrated Pest Management (IPM) programs.
- Monitor treated insect populations in the field for loss of effectiveness.

- Contact your local extension specialist, certified crop advisor, and or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact 800-258-3033.

Spray Drift Management
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 sites, woodlands, pastures, rangelands, or animals.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making the decision to apply this product.

Observe the following precautions when spraying Yuma 4E adjacent to permanent bodies of water such as rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries, and commercial fish ponds.

The following treatment setbacks or buffer zones must be utilized for applications around the above-listed aquatic areas with the following application equipment:

Application Method	Required Setback (Buffer Zone) (feet)
ground boom	25
chemigation	25
orchard airblast	50
aerial (fixed wing or helicopter)	150

Making applications when wind is blowing away from sensitive areas is the most effective way to reduce the potential for adverse effects.

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.

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[1]	10	10
>2 – 3	medium	100[1]	10	10
>3 - 4	medium or coarse	NA[2]	25	10
>4	medium or coarse	NA	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.
[2]NA is not allowed.

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 the setback area. Exception: Vehicles and persons riding bicycles that are passing through the setback area on public or private roadways are permitted.

Follow these spray drift **best management practices** to avoid off-target drift movement from applications.

Aerial Application

- The boom width must not exceed 75% of the wingspan or 90% of the rotor blade.
- Nozzles must always point backward, parallel with the air stream, and never be pointed downward more than 45 degrees.
- Nozzles must produce a medium or coarser droplet size (255 to 340 microns volume median diameter) per ASABE Standard 572 under application conditions. Airspeed, pressure, and nozzle angle can all effect droplet size. See manufacturer's catalog or USDA/NAAA Applicator's Guide for spray size quality ratings.
- Applications must not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.
- Use upwind swath displacement and apply only when wind speed is 3 to 10 mph as measured by an anemometer. Do not apply product when wind speed exceeds 10 mph.
- If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

Aerial Drift Reduction Advisory
This section is advisory in nature and does not supercede the mandatory label requirements.

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent adverse effects from drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the best practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Do not make applications at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Increase swath adjustment distance with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not apply below 1.5 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Do not make applications during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: Apply the pesticide only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Ground Boom Application
The following mandatory spray drift **best management practices** are required to reduce the likelihood of off-target drift movement from ground applications.

- Choose only nozzles and pressures that produce a medium or coarse droplet size (255 to 400 microns volume median diameter) per ASABE Standard 572. See manufacturer's catalog or USDA/NAAA Applicator's Guide for spray size quality ratings.
- Apply with nozzle height no more than 4 feet above the ground or crop canopy.
- Do not apply product when wind speed exceeds 10 mph as measured by an anemometer.

Orchard Airblast Application
The following mandatory spray drift **best management practices** are required to reduce the likelihood of off-target drift movement from airblast applications.

- Direct nozzles so spray is not projected above the canopies.
- Apply only when wind speed is 3 to 10 mph at the application site as measured by an anemometer outside of the orchard/vineyard on the upwind side.
- Outward pointing nozzles must be shut off when turning corners at row ends.

The applicator should take into account the following **best management practices** to reduce off-site spray drift. This section is advisory and does not supercede mandatory label requirements.

- Number of nozzles, nozzle orientation and spray volume, air speed and wind direction are key factors in adjusting airblast spray delivery to match the height and density of the crop canopy. Adjust airblast equipment to provide uniform coverage while minimizing the amount of spray movement over-the-top or completely through the crop canopy.
    - High air volumes deliver spray more efficiently than air at high speed. Reducing forward travel speed decreases the air speed necessary to deliver the spray to the top of the crop canopy.
    - Use air guides along with the number and orientation of spray nozzles to achieve the desired spray coverage and directional control.

- The following steps should be taken to minimize drift and the amount of non-target spray:
    - Orient nozzles and adjust air speed/volume/direction to force the spray through the crop canopy but not allow drift past the canopy.
    - Shut off spray delivery when passing gaps in crop canopy within rows.
    - Spray the outside rows of orchards from outside in, directing the spray into the orchard and shutting off nozzles on the side of the sprayer away from the orchard.
    - When treating smaller trees, vines or bushes, shut off top nozzles to minimize over-the-top spray movement.

Application Directions

Broadcast Foliar Application
Apply with conventional power-operated spray equipment using nozzles and spray pressures specified for insecticides. Apply Yuma 4E in a spray volume of not less than 2 gallons per acre (gpa) for aerial application equipment (fixed wing or helicopter) or not less than 10 gpa for ground equipment, unless otherwise specified. Increase spray volume to ensure adequate coverage with increased density and height of crop canopy.

Ground Application: Orient the boom and nozzles so that uniform coverage is obtained. The swath width should not be wider than the boom. Follow nozzle manufacturer's recommendations for insecticide nozzles with respect to nozzle type, pressure, and spacing.

Broadcast Soil Application
Apply with conventional power-operated spray equipment that will apply the product uniformly to the soil surface. Use nozzles that produce medium or coarse droplets (235 to 400 microns). Unless otherwise indicated, a spray volume of 10 gpa or more is needed. For band application, use proportionally less spray volume.

Aerial Application
Use a minimum spray volume of 2 gpa. Mark swaths by mechanical flagging, permanent markers or use of GPS equipment.

Chemigation Application
Apply Yuma 4E through properly equipped chemigation systems for insect control in alfalfa, almond (orchard floors only), citrus (orchard floors only), corn (field and sweet), cotton, cranberry, peppermint, sorghum, soybeans, spearmint, sugarbeet, orchard floors (pecan and walnut only), and wheat, or other crops as specified in supplemental labeling. Do not apply this product by chemigation unless specified in crop-specific directions in this label or supplemental labeling. Do not apply to labeled crops through any other type of irrigation system.

Note: Unless otherwise indicated in specific use directions, the application rates for chemigation are the same as those specified for broadcast application.

Directions for Sprinkler Chemigation: Apply this product only through the following sprinkler irrigation systems: 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. Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Chemigation Equipment Preparation: The following use directions must be followed when Yuma 4E is applied through sprinkler irrigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injection system with soap or a cleaning agent and water. Determine the amount of Yuma 4E needed to cover the desired acreage. Mix according to instructions in the Mixing Directions section and bring mixture to desired volume. Maintain continuous agitation during mixing and throughout the application period.

Chemigation Equipment Calibration: In order to calibrate the irrigation system and injector to apply the mixture containing Yuma 4E, determine the following: 1) Calculate the number of acres irrigated by the system; 2) Calculate the amount of product required and premix; 3) Determine the irrigation rate and determine the number of minutes for the system to cover the intended treatment areas; 4) Calculate the total gallons of insectide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes (minus time to flush out) to cover the treatment area. This value equals the gallons per minute output that the injector or eductor must deliver. Convert the gallons per minute to milliliters or ounces per minute if needed. 5) Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the timed output of the injector pump be checked at least twice before operation, and the system monitored during operation.

Chemigation Equipment Requirements:

- The system must contain an air gap, an approved backflow prevention device, a functional check valve, vacuum relief valve (including inspection port), and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. Refer to the American Society of Agricultural Engineer's Engineering Practice 409 for more information or state specific regulations.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- To ensure uniform mixing of the insecticide into the water line, inject the mixture through a nozzle placed in the fertilizer injection port or just ahead of an elbow or tee in the irrigation line so that the turbulence will assist in mixing. The injection point must be located after all back-flow prevention devices on the water line.
- The tank holding the insecticide mixture must be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injector point.

Chemigation Operation: Start the water pump and irrigation system, and let the system achieve the desired pressure and speed before starting the injector. Check for leaks and uniformity and make repairs before any chemigation takes place. Start the injector system and calibrate according to manufacturer's specifications. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, flush and clean the entire irrigation and injector system prior to shutting down the system.

Chemigation Precautions:

- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, contact state extension service specialists, equipment manufacturers, or other experts.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall operate the system and make necessary adjustments should the need arise and continuously monitor the injection.

Chemication Restrictions:

- Do not add crop oil when Yuma 4E is applied by chemigation.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing valve to prevent the flow of fluid back toward the injection.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application if they irrigate non-target areas.
- Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells, or adjoining crops.
- Do not enter treated areas during the reentry interval specified in the Agricultural Use Requirements section of this label unless required PPE is worn.
- Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Mixing Directions

Yuma 4E - Alone

To prepare the spray, add a portion of the required amount of water to the spray tank and, with the spray tank agitator operating, add Yuma 4E. Complete filling the tank with the balance of water needed. Maintain sufficient agitation during both mixing and application to ensure uniformity of the spray mixture.

Yuma 4E – Tank Mix

Yuma 4E is compatible with insecticides, miticides, and fungicides and non-pressure fertilizer solutions except for alkaline materials, such as bordeaux mixture and lime. Conduct a small jar compatibility test prior to tank mixing. Prepare tank mixtures in the same manner as directed above for use of Yuma 4E alone. When tank mixing Yuma 4E with herbicides, add wettable powders first, flowables second, and emulsifiable concentrates last. For best results when a fertilizer solution is involved, use a fertilizer pesticide compatibility agent such as Unite or Complex. Maintain constant agitation during both mixing and application to ensure uniformity of the spray mixture. Do not allow spray mixtures to stand overnight.

Tank Mix Compatibility Test: Test compatibility of the intended tank mixture before adding Yuma 4E to the spray or mix tank. Add proportional amounts of each tank mix ingredient to a clear glass pint, or quart jar with a lid, cap it, invert the jar several times. Observe the mixture for approximately ½ hour. If the mixture balls-up, forms flakes, sludges, jells, oily films or layers, or other precipitates that do not readily redisperse, it is an incompatible mixture that must not be used.

Uses

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 application (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: Yuma 4E may be applied through sprinkler irrigation systems to control listed foliar pests. Use specified broadcast application rates. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
corn rootworm adults (spotted cucumber beetle) grasshoppers leafhoppers	0.5 – 1
alfalfa blotch leaf miner alfalfa caterpillar alfalfa weevil larvae and adults armyworms blue alfalfa aphid cowpea aphid cutworms Egyptian alfalfa weevil larvae and adults (1) pea aphid plant bugs spittlebugs spotted alfalfa aphid (suppression) (not for use in California)	1 - 2
alfalfa webworm	1.5

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **In California:** For Egyptian alfalfa weevil control, apply the specified dosage in a minimum of 5 gpa of water when larvae are actively feeding.

Specific Use Precautions:

- Do not tank mix Yuma 4E with other pesticides, surfactants, or fertilizer formulations unless prior 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 Yuma 4E. 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 your Agricultural Extension Service.
- To avoid contamination of irrigation tail waters, do not flood irrigate within 24 hours following an application of Yuma 4E.

Specific Use Restrictions:
- **Preharvest Interval:** Do not cut or graze treated alfalfa within 7 days after application of 1/2 pint of Yuma 4E per acre, within 14 days after application of 1 pint per acre, or within 21 days after application of rates above 1 pint per acre.
- Do not make more than four applications of Yuma 4E or other product containing chlorpyrifos per season or apply any product containing chlorpyrifos more than once per alfalfa cutting.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.

Apple Tree Trunk
(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 unless PPE required for early entry is worn.

Apply as a post-bloom application to the lower 4 feet of the apple tree trunk for borer control in states east of the Rockies only (except Mississippi). Mix with water and apply directly to trunk from a distance of no more than 4 feet using low volume handgun or shielded spray equipment. Do not allow spray to contact foliage or fruit.

Target Pests	Yuma 4E (quart/100 gal)
American plum borer apple bark borer broad necked root borer dogwood borer flatheaded appletree borer roundheaded apple tree borer tilehorned prionus	1.5

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 28 days before harvest.
- Do not make more than one application of Yuma 4E to the apple tree trunk per year as either a prebloom or post-bloom application.
- This product may not be used if a prebloom application if any other product containing chlorpyrifos has been made during the year.
- Do not allow meat or dairy animals to graze in treated orchards.
- Treat only the lower 4 feet of the apple tree trunk.
- Do not apply when wind speed is greater than 10 mph.

Asparagus
(For use only in Arizona, California, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oregon, South Dakota, Washington, and Wisconsin)

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 foliar spray. Use sufficient volume of finished spray to ensure thorough coverage of crop foliage. **Note:** Yuma 4E may be applied aerially or with ground equipment for control of armyworms and grasshoppers.

Pests	Yuma 4E (pint/acre)
armyworms (1) asparagus aphids (1) asparagus beetles (1) cutworms (2) grasshoppers (1) symphylans (3)	2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Armyworms, asparagus beetles, asparagus aphids**, and **grasshoppers:** Apply during the fern stage when field counts or crop injury indicates that damaging pest populations are developing or present.
2. **Cutworms**: For best results, apply when the soil is moist and worms are active on or near the soil surface.
3. **Symphylans**: Apply at least two weeks before harvest for optimum control.

Specific Use Restrictions:

- **Preharvest interval:** Do not apply within 1 day before harvest.
- Do not make more than one preharvest application per season.
- Do not make more than two postharvest applications during the fern stage.
- Maximum single application rate preharvest or postharvest is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.

Brassica (Cole) Leafy Vegetables[1] 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.

[1]*Brassica* (cole) leafy vegetables including broccoli, broccoli raab, Brussels sprout, cabbage, cauliflower, cavalo broccolo, Chinese broccoli, Chinese cabbage, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens

Specific Use Restriction: If a preplant incorporation application for direct seeded or transplanted crops is made, **do not** apply this product as an at-plant or post plant soil application. If an at-plant or post plant soil application is made, **do not** apply this product as a preplant incorporation application for direct seeded or transplanted crops.

Preplant Incorporation Application for Direct Seeded or Transplanted Crops

Apply Yuma 4E as a broadcast spray to the soil surface using power-operated ground spray equipment. Use a total spray volume of 10 gpa or more. On the day of treatment, incorporate Yuma 4E into the top 2 to 4 inches of soil using a disc, field cultivator, or equivalent equipment.

Crop	Target Pests	Yuma 4E (pints/acre)
cauliflower	billbugs	4
broccoli Brussels sprout cabbage cavolo broccolo Chinese broccoli Chinese cabbage collards kale kohlrabi mizuna mustard greens mustard spinach rape greens turnip	cutworms grubs root maggot symphylans wireworms	4.5
radish		5.5
rutabaga		4.5

Specific Use Precautions:
Insecticides, including Yuma 4E, may contribute to the stress of plants under certain environmental conditions. This stress may reduce plant stand or interfere with normal plant development. Herbicides used preplant incorporated may interact with insecticides and enhance this stress.

At-Plant or Post Plant Soil Application
Apply as indicated in Pest-Specific Use Directions. Use a higher rate in the rate range when there is increased pest pressure.

Crop	Target Pests	Yuma 4E (fl oz/1000 ft of row)
cauliflower	root maggot (1)	1.6 – 2.4
broccoli broccoli raab Brussels sprout cabbage cavalo broccoli Chinese broccoli Chinese cabbage collards kale kohlrabi mizuna mustard greens mustard spinach rape greens turnip		1.6 – 2.75
broccoli cabbage	root aphid (2)	1.2 (2.4 for double row plantings)
radish	root maggot (3)	1
rutabaga	root maggot (1)	1.6 – 3.2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Root maggot:**
   - **Direct seeded crops [broccoli, broccoli raab, Brussels sprout, cabbage, cauliflower, cavolo broccolo, Chinese broccoli, Chinese cabbage, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens, rutabaga, turnip]:** Apply the specified dosage in a water-based spray as a 4-inch wide band over the row at planting time. Place band behind the planter shoe and in front of the press wheel to achieve shallow incorporation. Use a minimum of 40 gpa total spray volume.
   - **Transplanted crops [broccoli, broccoli raab, Brussels sprout, cabbage, cauliflower, cavalo broccolo, Chinese broccoli, Chinese cabbage, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens, turnip]:** Apply Yuma 4E as a water-based spray directed to the base of the plants immediately after setting. Use a minimum of 40 gpa total spray. Do not add any additional adjuvants, surfactants or spreader stickers. Do not apply as a foliage application.
2. **Root aphid (broccoli, cabbage):** Apply Yuma 4E in water or with liquid fertilizer injected as a sidedress on each side of the row after plants are established. See Mixing Directions section for Mixing Instructions for Liquid Fertilizer. Avoid mechanical damage to crop roots. Use a minimum of 15 gpa of total spray volume.
3. **Root maggot (radish):** Apply the specified dosage as a water-based drench in the seed furrows with the seed at planting time. Use a minimum of 40 gpa of total drench.

Specific Use Restrictions for Preplant Incorporation and At-Plant or Post Plant Soil Applications:

- **Soil applications (all labeled crops):**
  - ◊ **Preharvest Interval:** Do not apply within 30 days before harvest.
  - ◊ Do not foliarly apply any chlorpyrifos product labeled for foliar application (e.g., Lorsban® 50W) within 10 days of a soil application of Yuma 4E.
  - ◊ Do not aerially apply this product in Mississippi.
- **Cauliflower:** Do not apply more than 2 pints of Yuma 4E to cauliflower planted in 40-inch rows. Use proportional amounts for other row spacings, but do not exceed 4 pints of Yuma 4E per acre. The maximum single application rate for cauliflower is 1.2 oz ai chlorpyrifos (2.4 fl oz of Yuma 4E) per 1000 ft of row.
- **Broccoli, broccoli raab, Brussels sprout, cabbage, cauliflower, cavalo broccoli, Chinese broccoli, Chinese cabbage, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens, turnip:** Do not apply more than 2.6 pints of Yuma 4E per acre when planted in 40-inch rows. Do not apply more than 4.5 pints of Yuma 4E per acre to these crops when in 20-inch rows (or two rows per bed). Use proportional amounts for other row spacings, but do not exceed 4.5 pints of Yuma 4E per acre.
- **Radish:** Do not apply more than 5.5 pints of Yuma 4E per acre. The maximum single application rate for radish is 0.5 oz ai chlorpyrifos (1 fl oz of Yuma 4E) per 1000 ft of row.
- **Rutabaga:** Do not apply more than 4.5 pints of Yuma 4E per acre. The maximum single application rate for rutabaga is 1.6 oz ai chlorpyrifos (3.2 fl oz of Yuma 4E) per 1000 ft of row. Do not use rutabaga tops for food or feed purposes.

Foliar Application [*Brassica* (Cole) Leafy Vegetables Only]

Apply with conventional power-operated spray equipment in 20 to 150 gpa of water. For aerial applications, apply in a minimum of 5 gpa of water. Use a higher rate in the rate range when there is increased pest pressure. Consult your state agricultural experiment station, extension service specialist, or integrated pest control advisor for proper time to treat in your area.

Target Pests	Yuma 4E (pint/acre)
armyworms cabbage aphid cutworms imported cabbage worm striped flea beetle (adult)	1 – 2

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 21 days before harvest.
- Do not make more than three applications of any product containing chlorpyrifos per crop.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not aerially apply this product in Mississippi.

Christmas Trees (Plantations)
(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.

Unless otherwise indicated, apply as a foliar spray using power-operated ground equipment. Thorough coverage of foliage is essential. Use a minimum 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.

Target Pests		Yuma 4E
ants (4) aphids adelgids (cooley) (eastern spruce gall) Douglas fir needle midge European pine sawfly European pine shoot moth grasshoppers gypsy moth mites (1) (European red spider) (two spotted spider)	pales weevil (adult) pine needle midge pine spittlebug plant bugs scale (2) (black pine) (pine needle) (pine tortoise) (spruce bud) (striped pine) spittlebugs spruce budworm spruce needleminer	1 quart/acre
pales weevil (3)		3 quarts/100 gal

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:
1. **Spider Mites:** When large numbers of 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. **Scale:** For **control** apply when scale crawlers are active.
3. Apply as a cut stump drench.
4. Excludes ants of significant public health importance, such as fire ants, harvester ants, carpenter ants, and pharaoh ants.

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 Yuma 4E 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, treat a small block of plants and observe them 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 Yuma 4E under commercial growing conditions.

Specific Use Restrictions:
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per season.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 7 days of the first application.
- Do not allow meat or dairy animals to graze in treated areas.

Citrus Fruits[1]

(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.

[1]Citrus fruits including calamondin, chironja, citrus citron, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarin (tangerine), pummelo, satsuma mandarin, sour orange, sweet orange, tangelo, tangor

Apply as a concentrate or dilute spray using conventional, power-operated spray equipment. Use a higher rate in the 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 Yuma 4E 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 specified by your State Agricultural Experiment Station, certified Pest Control Advisor, or Extension Service Specialist. To avoid excessive ridging, do not apply Yuma 4E to citrus from December 1 up to the initiation of bloom (5% visible bloom).

Use of Spray Oils: To improve control of aphids, mealybugs, scale insects, and thrips, a petroleum spray oil specified for use on citrus trees may be added to spray mixtures at up to 1.8 gallons per 100 gallons of spray.

Target Pests		Yuma 4E (pint/acre)
aphids (including brown citrus aphid) glassywinged sharpshooter grasshoppers (1) katydids lepidopterous larvae such as: avocado leafroller, cutworms fruit tree leafroller orange dogs orange tortrix western tussock moth	mealybugs (see below for California and Arizona) scale insects, such as: black scale brown soft scale, California red scale (see below for California and Arizona) chaff scale Florida red scale long scale purple scale snow scale thrips (see below for California and Arizona)	2 - 7
citrus rust mites (2) (3)		4 - 7
citrus psylla (3) (4)		5
thrips suppression and mealybugs (California and Arizona, see restrictions)		6 - 12
California red scale (California and Arizona, see restrictions)		8 -12

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Lubber grasshoppers:** Effective control requires direct contact with spray when grasshoppers are small (less than 1 inch in length).
2. **Citrus rust mites**: use a spray concentration of at least 1 pint of Yuma 4E per 100 gallons.
3. In Los Angeles, Monterey, Orange, San Diego, San Luis Obispo, Santa Barbara, and Ventura Counties in California, Yuma 4E may be tank mixed with petroleum spray oils registered for control of mites in citrus. Follow all label directions and precautions for Yuma 4E and tank mix partners. Do not exceed 1.8% oil v/v or 1.8 gallons of oil per 100 gallons of spray. Use only on citrus species and varieties for which Yuma 4E is registered.
4. **Citrus psylla: For control,** add citrus oil at 2% v/v in a tank mix with Yuma 4E.

Specific Use Precautions:

- Observe local recommendations for tank mix combinations especially with regard to use of Yuma 4E with spray oil. Do not use penetrating surfactants in tank mixes with Yuma 4E. Consult with a county farm advisor, county agency, extension service personnel, agricultural commissioner, pest control advisor, or local representative for local recommendations.
- Do not apply when trees are stressed by drought or high temperatures.
- Yuma 4E is highly toxic to bees exposed to direct treatment and must not be applied when bees are actively visiting the area. During the citrus bloom period in California, apply from 1 hour after sunset until 2 hours before sunrise.
- Do not use Yuma 4E in combination with spray oil when temperatures are expected to exceed 95°F on the day of application or for several consecutive days thereafter.

Specific Use Restrictions:

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

Citrus[1] Orchard Floors

(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.

[1]Citrus fruits including calamondin, chironja, citrus citron, citrus hybrids, grapefruit, kumquat, lemon, lime, mandarin (tangerine), pummelo, satsuma mandarin, sour orange, sweet orange, tangelo, tangor

Apply as a ground broadcast spray directed to the orchard floor to control foraging ants (excluding fire, harvester, carpenter and pharaoh ants). Do not apply 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 Yuma 4E 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: Yuma 4E 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 Application section.

Note: Do not apply in tank mixture with Evik herbicide.

Target Pests	Yuma 4E (pint/acre)
ants (1)	1.5 – 2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:
1. Excludes ants of significant public health importance, such as fire ants, harvester ants, carpenter ants, and pharaoh ants.

Application with Dry Bulk Fertilizer: Most dry fertilizers can be used for impregnation with Yuma 4E. Apply Yuma 4E 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 Yuma 4E. 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). Position the spray nozzle within the mixer to provide uniform coverage of the tumbling mixture of fertilizer and Yuma 4E. Addition of water will cause Yuma 4E to uniformly adhere to the dry bulk fertilizer. Apply bulk fertilizers impregnated with Yuma 4E immediately, do **not store it**. Foliar applications of Yuma 4E may be made in addition to the orchard floor treatments.

Compliance with any and all federal and state laws and regulations relating to the Yuma 4E and fertilizer mixture is the responsibility of the person offering such mixture for sale or distribution.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 28 days before harvest.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per year (does not include foliar applications to citrus trees).
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 3 lb ai chlorpyrifos (3 quarts of Yuma 4E) per acre per year.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not allow meat or dairy animals to graze in treated areas.

Corn (Field, Sweet, 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 Preemergence 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: Yuma 4E 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 Yuma 4E.

Target Pests	Yuma 4E (pint/acre)
armyworms cutworms	1 - 2

Postemergence Application
Apply as a postemergence 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. Yuma 4E may be tank mixed with glyphosate products when application is to be made to glyphosate-tolerant corn.

Chemigation: Yuma 4E may be broadcast applied postemergence through sprinkler irrigation systems at specified application rates to control listed foliar pests. For best results, tank mix Yuma 4E with 2 pints of non-emulsifiable oil. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
grasshoppers	0.5 – 1
aphids armyworms chinch bugs (1) corn rootworm adults (2) cutworms (3) European corn borer (5) flea beetle adults (1) southern corn leaf beetle webworms (4) western bean cutworm	1 - 2
corn earworm southwestern corn borer (6)	1.5 - 2
billbugs (1) common stalk borer (9) corn rootworm larvae (7), (8) lesser cornstalk borer	2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Billbug, chinch bug**, or **flea beetle:** For best 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- to 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.
2. **Corn rootworm adults:** The specified dosage will control silk clipping.
3. **Cutworms:** It is preferable to apply Yuma 4E when soil is moist and worms are active on or near the soil surface. If ground is dry, cloddy, or crusted at time of treatment, 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.
4. **Webworm:** For control, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment is necessary.
5. **European corn borer:** For control, use 1.5 to 2 pints per acre when application is made with power-operated ground or aerial equipment or 1 to 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.

6. **Southwestern corn borer:**A second application may be applied 21 days later if needed due to reinfestation.
7. **Corn rootworm larvae:** For postemergence control, apply at cultivation. Direct the spray to both sides of the row at the base of the plants just ahead of the cultivator shovels. Cover the insecticide with soil around the brace roots. A cultivation application of Yuma 4E may be made in addition to an at-planting application of Lorsban® 15G.
8. Yuma 4E may also be applied through sprinkler irrigation systems at the rate of 2 pints per acre to control **corn rootworm larvae**. Time application to coincide with the appearance of the second instar larvae. Apply with enough water to wet the root zone to the depth control needed. If soils are wet, allow enough soil drying to occur such that an application using a minimum amount of water will not produce surface runoff. See Chemigation Application section.
9. Do not use Yuma 4E in combination with a burndown herbicide for control of common stalk borer. For **common stalk borer** control, treat approximately 11 days after application of glyphosate or after burndown with paraquat herbicide is complete (3 to 5 days).

Specific Use Restrictions:

- **Preharvest Interval:** Do not apply within 21 days before harvest of grain, ears, forage or fodder.
- Do not make more than three applications of any product containing chlorpyrifos per season, including the maximum allowed of two granular applications, at the 1 lb ai chlorpyrifos rate.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 3 lb ai chlorpyrifos (6 pints of Yuma 4E) per acre per season.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- If more than 1 lb ai granular chlorpyrifos per acre is applied at-plant (for a maximum of 1.3 lb ai per acre per season), only one additional application of a liquid product containing chlorpyrifos at 1 lb ai per acre is allowed per season, for a total of 2.3 lb ai chlorpyrifos per acre per season.
- Do not apply in tank mixes with Steadfast or Lightning herbicides.
- Do not aerially apply this product in Mississippi.

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 (see separate rate table for 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: Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Proper application methods are necessary to ensure thorough spray coverage and correct rate, and minimize off-target drift. Follow Application Directions for ground and aerial application and Spray Drift Management recommendations in Product Information section of this label.

All States Except Arizona and California

Target Pests	Yuma 4E (pint/acre)
cotton fleahopper (1) plant bugs (1) (*Lygus, Mirids*)	0.37 - 1
grasshoppers thrips	0.5 - 1
cotton aphid fall armyworm yellowstriped armyworm	0.5 - 2
spider mites (2)	1
beet armyworm cotton bollworm (3) cutworms pink bollworm salt marsh caterpillar tobacco budworm (3)	1.5 - 2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. The 0.37 pint per acre rate will not provide a high degree of control but, compared to the 1 pint per acre rate, will minimize the damage from **plant bugs** and **cotton fleahoppers** and allow increased survival and build-up of beneficial insects to aid in the control of **bollworms** infesting cotton.
2. **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.
3. **Bollworms** and **budworms:** For best results, scout fields twice per week and apply when worms are 1/4-inch or less in length.

Arizona and California

Target Pests	Yuma 4E (pint/acre)
armyworms cotton aphid cotton fleahopper *Lygus* salt marsh caterpillar silverleaf whitefly (1) thrips	1 - 2
boll weevil cotton bollworm (2) cotton leaf perforator (suppression) cutworms pink bollworm spider mites (suppression) tobacco budworm (2)	2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Silverleaf whitefly:** Apply in tank mix combination with the specified rate of a pyrethroid insecticide labeled for control or suppression.
2. **Bollworms** and **budworms:** For best results, scout fields twice per week and apply when worms are 1/4 inch or less in length.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 14 days before harvest.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per crop season.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 3 lb ai chlorpyrifos (6 pints of Yuma 4E) per acre per season.
- Do not make a second application of Yuma 4E or other product 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.

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 no less than 15 gpa. Except for control of cranberry weevil, treat when field counts indicate damaging insect populations are developing or present.

Chemigation: Yuma 4E may be applied through sprinkler irrigation systems to control listed pests. Apply at specified broadcast application rates. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
brown spanworm cranberry fruitworm cranberry weevil (1) cutworms fireworms sparganothis fruitworms	3

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:
1. **Cranberry weevil:** For 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:
Apply only after the winter flood water has been removed. To avoid pesticide contamination of flood waters, do not apply when bogs are flooded.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 60 days before harvest.
- Do not make more than two applications of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 1.5 lb ai chlorpyrifos (3 pints of Yuma 4E) per acre.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.

Fig
(For use only in California)

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

Apply Yuma 4E 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 Yuma 4E into the top 3 inches of soil using suitable equipment.

Target Pest	Yuma 4E (quart/acre)
dried fruit beetle	2

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 217 days (7 months) before harvest.
- Make only one application per year of Yuma 4E or other product containing chlorpyrifos.
- Maximum single application rate is 2 lb ai chlorpyrifos (2 quarts of Yuma 4E) per acre.

Grape
(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
(For use only in areas east of the Continental Divide)
Apply Yuma 4E 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 foot circle) around the base of each vine.

Target Pest	Yuma 4E (pint/100 gal)
grape borer	4.5

Specific Use Precautions:
- Do not allow spray to contact fruit or foliage.
- Maximum single application rate for soil surface application is 2.25 lb ai chlorpyrifos (4.5 pints of Yuma 4E) per acre.

Prebloom Application
(For use only in areas east of the Continental Divide)
Apply as a spray drench ground application using a minimum spray volume of 25 gpa.

Target Pest	Yuma 4E (quart/acre)
climbing cutworm[1] grape mealybugs[2]	1

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:
1. **Cutworm:** For control, apply 1 quart of Yuma 4E per acre as a broadcast spray in a minimum spray volume of at least 50 gallons of water using power-operated ground spray equipment. Treat when cutworms first become active and when field counts indicate damaging insect populations are

developing or present. Do not apply after bloom stage of growth. Consult your state agricultural experiment station or extension service specialist concerning cutworm control practices in your area.

1. **Grape mealybug:** For control, apply 1 quart of Yuma 4E per acre in a minimum spray volume of at least 50 gallons of water per acre using power-operated ground spray equipment only prior to late budbreak. Applications after budbreak may result in transient leaf yellowing (Concords).

Specific Use Restrictions for Prebloom Application:
- Do not use in conjunction with soil surface application for grape borer control.
- Maximum single application rate for prebloom application to minimize phytotoxicity is 1 lb ai chlorpyrifos (1 quart of Yuma 4E) per acre.

Specific Use Restrictions for Soil Surface Application and Prebloom Application:
- **Preharvest Interval:** Do not apply within 35 days before harvest.
- Do not make more than one application of Yuma 4E or other product containing chlorpyrifos per season.
- Based upon available residue data, the use of Yuma 4E in grapes is restricted to areas east of the Continental Divide only. Do not use in the state of Mississippi.

Legume Vegetables (Succulent or Dried) Except Soybean[1]
(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.

[1]Legume vegetables including adzuki bean, bean, blackeyed pea, broad bean (dry and succulent), catjang, chickpea, Chinese longbean, cowpea, crowder pea, dwarf pea, edible pod pea, English pea, fava bean, field bean, field pea, garbanzo bean, garden pea, grain lupin, green pea, guar, hyacinth bean, jackbean, kidney bean, lablab bean, lentil, lima bean (dry and green), moth bean, mung bean, navy bean, pea, pigeon pea, pinto bean, rice bean, runner bean, snap bean, snow pea, southern pea, sugar snap pea, sweet lupin, tepary bean, urd bean, white lupin, white sweet lupin, yardlong bean

Preplant Broadcast Application
Apply Yuma 4E at a rate of 2 pints per acre to control seed maggots. Make a preplant broadcast application in a minimum of 10 gpa of spray to the soil surface using suitable ground equipment. To improve the activity against seed maggots, incorporat Yuma 4E into the top 1 to 3 inches of soil using suitable tillage equipment.

At Plant T-Band Application
Apply 1.8 fl oz of Yuma 4E per 1000 feet of row at 30-inch row spacing. Apply the spray in a 3- to 5-inch wide band over the row behind the planter shoe and in front of the press wheel to achieve shallow incorporation. Mix the specified dosage in a minimum of 10 gpa of spray and apply to the soil surface using suitable ground spray equipment. Equivalent rates of insecticide spray required per 100 feet of row for listed row spacings are given in the accompanying table. To improve the activity of Yuma 4E against seed maggots, incorporate Yuma 4E into the top 1/2 to 1-inch of soil using tines or chains or other suitable equipment.

Spray Volume Per Acre (Gallons)	fl oz of Spray Volume per 100 Feet of Row			
	30-inch	28-inch	24-inch	22-inch
10	7.3	6.9	5.9	5.4
15	11	10.3	8.8	8.1
20	14.7	13.7	11.8	10.8

Specific Use Precaution: Insecticides, including Yuma 4E, may contribute to the stress of the bean plant under certain environmental conditions. This stress may reduce plant stand or interfere with normal plant development. Herbicides used preplant incorporated may interact with insecticides and enhance this stress.

Specific Use Restrictions:
- Do not make more than one application of Yuma 4E per year.
- Do not apply more than 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply Yuma 4E at-plant if the field was treated with a preplant incorporated treatment of Yuma 4E.

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 32 fl oz of Yuma 4E per acre in a water-based spray as a 2- to 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 listed row spacings are given in the table below. Shallow incorporation is necessary. Place behind the planter shoe and in front of the presswheel. Phytotoxicity may occur if Yuma 4E is sprayed directly onto onion seeds. Do not mix Yuma 4E 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 a small area to determine plant tolerance and extent of injury if such occurs prior to initiating large scale applications.

Yuma 4E (32 fl oz/acre)	Row Spacing			
	6-inch	10-inch	12-inch	18-inch
fl oz/1000 ft of row	0.37	0.61	0.73	1.1

Specific Use Restrictions:
- Do not make more than one application per year.
- Maximum single application rate is 0.03 lb ai chlorpyrifos per 1000 feet of row.
- Do not aerially apply this product in Mississippi.

Postplant Soil Drench Application
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.

Target Pest	Yuma 4E (quart/acre)
onion maggot seedcorn maggot	1

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 60 days before harvest.
- Do not make more than two applications (at plant plus postplant) per year.
- Maximum single application rate is 1 lb ai chlorpyrifos (1 quart of Yuma 4E) per acre.
- Do not aerially apply this product in Mississippi.

Peanut

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 preplant 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.

Target Pests	Yuma 4E (pint/acre)
wireworms (suppression)	4

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 21 days before harvest.
- Do not make more than one preplant application of Yuma 4E per season.
- Maximum single application rate is 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre.
- The combined total of preplant and postplant applications of Yuma 4E, Lorsban® 15G or other product containing chlorpyrifos must not exceed 4 lb ai chlorpyrifos per acre per season.
- Do not feed treated peanut forage or hay to meat or dairy animals.
- Do not aerially apply this product in Mississippi.

Pear
(For use only in California, Oregon and Washington)

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.

Postharvest Application
Mix the specified dosage in 100 to 400 gpa of spray and apply using an airblast speed sprayer or other suitable ground equipment.

Target Pest	Yuma 4E (pint/acre)
codling moth	4

Specific Use Restrictions:
- Do not make more than one postharvest application (prior to dormancy) per year.
- Maximum single application rate is 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre.
- Do not harvest or use treated fruit for food or feed.
- Do not allow meat or dairy animals to graze in treated orchards.
- If unauthorized entry into a treated orchard cannot be prevented, then the orchard must be posted with appropriate signs according to the Worker Protection Standard while treated, unharvested fruit remains on the tree.

Peppermint and 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: Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
cutworm (1)	2 – 4
garden symphylans (2) mint root borer (3)	4

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

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 3/4 inch in length, use the 2 pint rate; otherwise, use a higher rate in the rate range.
2. **Garden symphylans:** Apply preplant to the soil surface. 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.
3. **Mint borer:** Apply postharvest 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:

- **Preharvest Interval:** Do not apply within 90 days before harvest.
- Make only one application of Yuma 4E or other product containing chlorpyrifos during the growing season.
- Do not make more than one preplant incorporated application in the spring.
- Make only one postharvest application of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre.
- Do not use in conjunction with a broadcast foliar application of Yuma 4E for cutworm control.

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 postemergence 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.

Chemigation: Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
sorghum midge (1)	0.5
grasshoppers yellow sugar cane aphid and other aphids	0.5 – 1
greenbug (2)	0.5 – 2
armyworms chinch bugs (3) cutworms lesser cornstalk borer (3)	1 – 2
webworms	1
European and southwestern corn borer	1.5 – 2
corn earworm	2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

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 in the rate range when pest populations are high.
3. **Chinch bugs** and **lesser cornstalk borer:** Apply as a directed spray toward the base of the plant using power-operated ground spray equipment with sufficient water to ensure coverage of an 8- to 12-inch band centered 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 Yuma 4E to drought stressed grain sorghum within three 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 yield-reducing chemical injury when treated at the higher application rates. Users should not apply more than 1 pint of Yuma 4E per acre to seed sorghum if the additional risk of crop injury is unacceptable.

Specific Use Restrictions:

- **Preharvest Interval:** Do not harvest for grain, forage, fodder, hay, or silage within 30 days after application of 1 pint of Yuma 4E per acre or within 60 days after application of rates above 1 pint per acre.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per use season.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 1.5 lb ai chlorpyrifos (3 pints of Yuma 4E) per acre per season.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not treat sweet varieties of sorghum.
- Do not aerially apply this product in Mississippi.

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 listed row spacing are given in the table below. For at-plant treatments, apply in a 4- to 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 postemergence rescue treatment, apply as a directed spray in a 9- to 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.

Target Pests	At-Plant Treatment (Broadcast, T-band or Band) (pint/acre)	Postemergence Rescue Treatment (Band Only) (pint/acre)
cutworms lesser cornstalk borer	1 – 2	1 – 2

Fluid Ounces of Spray Required Per 100 Feet of Row for Listed Row Spacings and Spray Volumes				
Volume of Spray Per Acre (gal)	36"	32"	28"	24"
10	8.8	7.9	6.9	5.9
15	13.2	11.8	10.3	8.8
20	17.6	15.7	13.7	11.8

Foliar Application
Apply as a postemergence 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. Apply when field counts indicate damaging pest populations are developing or present. Yuma 4E may be tank mixed with glyphosate products, such as Duramax or Durango DMA when application is to be made to glyphosate-tolerant soybeans. Use a higher rate in the rate range when there is increased pest pressure.

Chemigation: Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
grasshoppers green cloverworm spider mites (1) velvetbean caterpillar	0.5 – 1
armyworms bean leaf beetle corn earworm cutworms Mexican bean beetle potato leafhopper saltmarsh caterpillar and other woolly bears soybean aphid thistle caterpillar (painted lady butterfly)	1 - 2
European corn borer southern green stink bug	2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

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 one application after pod set.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 28 days before harvest.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per year
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 3 lb ai chlorpyrifos (6 pints of Yuma 4E) per acre per season.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 14 days of the first application.
- 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.

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 Application
Apply Yuma 4E in sufficient water to ensure uniform soil coverage and incorporate into the soil in the spring for protection of strawberries during the following year.

Target Pest	Yuma 4E (quart/acre)
garden symphylans grub	2

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.

Target Pest	Yuma 4E (quart/acre)
strawberry bud weevil	1

Postharvest Application
Apply as a directed spray to crown of strawberry plants immediately after harvest and after plants are topped. Repeat application, if required, 14 to 18 days later. Use a minimum spray volume of 100 gpa.

Target Pest	Yuma 4E (quart/acre)
strawberry crown moth	1

Specific Use Precautions:
- Do not tank mix Yuma 4E with pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination non-injurious under your current conditions of use.
- Phytotoxicity may occur when Yuma 4E is applied to strawberries under conditions of high temperature and drought stress.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 21 days before harvest.
- **Preplant Application:** Do not make more than one application of Yuma 4E or other product containing chlorpyrifos per year.
- **Foliar and Postharvest Applications:** Do not make more than two applications of Yuma 4E or other product containing chlorpyrifos per year.
- **Postharvest Application:** Do not sprinkle irrigate for one week following application.
- Maximum single application rate is 2 lb ai chlorpyrifos (2 quarts of Yuma 4E) per acre for preplant incorporation and 1 lb ai chlorpyrifos (1 quart of Yuma 4E) per acre for foliar and postharvest application.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first foliar application and within 14 days of postharvest application.
- **For prebloom use only.** Do not apply after berries start to form or when berries are present.

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 Preplant Incorporated)
To reduce feeding damage from early season insects such as cutworms, apply at planting or as a preplant treatment and incorporate to a depth of 1 to 2 inches. Do not apply as an in-furrow treatment. Apply 1

pint of Yuma 4E 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 Yuma 4E per 10,000 feet of row). For other row widths, adjust the spray volume per planted acre in proportion to the length of row actually treated.

Postemergence 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 gpa of finished spray when using aerial spray equipment or 10 to 30 gpa when using ground spray equipment. **Chemigation:** Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Banded Foliar Spray: Apply the specified rate within the band using a minimum of 7 gallons of spray volume in a 5- to 7-inch wide band centered over the row. Do not reduce the rate for band applications. Concentrate the full labeled dosage rate (see band rates in table below) in the treated zone. For best results, lightly incorporate band-applied treatments, either mechanically or with irrigation.

	Yuma 4E	
Target Pests	**Broadcast (pint/acre)**	**Band (pint/acre)**
grasshoppers (1)	0.5 - 1	-
leafminers spider mites	1	0.67
tarnished plant bug (*Lygus*)	1	-
aphids fall armyworm yellowstriped armyworm webworms	1 - 2	0.67 – 1.33
beet armyworm	1.5 - 2	1 – 1.33
cutworms flea beetle adults	2	1.33
sugarbeet root maggot adults (2), (5)	0.5 - 1	-
sugarbeet root maggot larvae (3), (5)	-	1.33 - 2
sugarbeet root maggot larvae (4), (5)	2	1.33 - 2

Numbers in parentheses (-) refer to “Pest-Specific Use Directions".

Pest-Specific Use Directions:
1. **Grasshoppers:** The low rate will control small nymphs (1st through 3rd instar).
2. **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 upon local field trap monitoring.
3. **Sugarbeet root maggot larvae:** Use as primary treatment to control root maggot larvae. Base application timing upon local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.
4. **Sugarbeet root maggot larvae:** Use as a supplemental postemergence treatment following an at-plant insecticide application for control of root maggot larvae. Base application timing upon local field trap monitoring. Apply anytime from 7 days before until 3 days after peak adult emergence.
5. **Sugarbeet root maggot:** To prevent potential development of insecticide resistance producers are encouraged to take the following steps: (1) avoid making more than two applications of Yuma 4E per

season when adults are active; (2) if an organophosphate insecticide was applied at planting, make no more than one postemergence application of Yuma 4E when adults are active.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 30 days before harvest of beet roots and tops.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not apply more than 6 pints of Yuma 4E (3 lb ai chlorpyrifos) per acre per season.
- Do not make a second application of Yuma 4E or other product 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.
- To avoid unacceptable crop injury, do not tank mix Yuma 4E with Quadris or Headline 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.

Preplant 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.

Target Pests	Yuma 4E (pint/acre)
cutworms	2 - 4

Postemergence Broadcast Application
Apply as a postemergence 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. Use a higher rate in the rate range when there is increased pest pressure.

Target Pests	Yuma 4E (pint/acre)
grasshoppers	1
banded sunflower moth seed weevil (4) stem weevil (2) sunflower beetle larvae and adults (1) sunflower moth (3) woolly bears	1 – 1.5
cutworms	2
tarnished plant bug (*Lygus*) (5)	1 - 2

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

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 early 1% to 5% bloom stage.
4. **Seed weevil:** To control, apply when field counts indicate 10 to 12 adults per plant for oil crop varieties and 1 to 3 adults per plant on confectionery crop varieties.
5. **Tarnished plant bug (*Lygus*):** Use a higher rate in the rate range where populations are heavy. Apply at the onset of pollen spread or approximately 10% bloom (R-5 growth stage). For best protection, make a second application 10 days later. Use sufficient water to ensure thorough coverage of treated plants.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 42 days before harvest.
- Do not make more than three applications of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre for preplant incorporation and 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre for postemergence broadcast treatment.
- Do not apply more than 3 lb ai chlorpyrifos (6 pints of Yuma 4E) per acre per season.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not allow meat or dairy animals to graze in 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 preplant 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.

Target Pests	Yuma 4E (pint/acre)
Conderus (wireworm) sweet potato flea beetle *Systena* (flea beetle)	4

Specific Use Precaution:
- Yuma 4E will not control false wireworms, white fringe beetle or other grubs that attack sweet potatoes.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 125 days before harvest.
- Do not make more than one application of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre.
- Do not aerially apply this product 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 preplant 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 Yuma 4E onto existing beds, knock down beds to final shape for transplanting. Use of PTO-driven implements that will incorporate Yuma 4E to a depth of 4 inches.

Target Pests	Yuma 4E (pint/acre)
cutworms flea beetles mole crickets root maggots wireworms	2

To control the above listed pests and suppress populations of rootknot nematodes in all tobacco growing regions, use Yuma 4E in a tank mix with Nemacur 3 at the rate of 2 pints of Yuma 4E plus 4 quarts of Nemacur 3 nematicide per acre. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for Nemacur 3 used in combination with Yuma 4E. 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 there are high populations of *M. incognita*, apply Telone® II soil fumigant at the specified label rate.

Specific Use Restrictions:
- Do not make more than one application of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 1 lb ai chlorpyrifos (2 pints of Yuma 4E) per acre.
- Do not aerially apply this product in Mississippi.

Tree Fruits,[1] Almond, and Walnut (Dormant/Delayed Dormant Sprays)
(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 almond and walnut unless PPE required for early entry is worn.

[1]Apple, cherry, nectarine, peach, pear, plum, prune

Apply as a dormant or delayed dormant spray. While Yuma 4E may be used without oil, for best results, use oil 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 Yuma 4E per acre.

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

Use Precautions for Tree Fruits, Almond and Walnut:
- Cold or dry conditions may cause Yuma 4E 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 Yuma 4E.

Use Restrictions for Tree Fruits, Almond and Walnut:
- Make only one application of chlorpyrifos during the dormant season.
- For apple, do not make more than one application of Yuma 4E to the apple tree trunk per year as either a pre-bloom or post-bloom application
- Do not use more than a total of 2 lb ai chlorpyrifos (4 pints of Yuma 4E) per acre per season as a dormant/delayed dormant application.
- Do not allow meat or dairy animals to graze in treated orchards.

Almond, Cherry, Nectarine, Peach, Pear, Plum, Prune, Walnut

Target Pests	Yuma 4E (pint/acre)
American plum borer brown almond mite climbing cutworms European red mite greater peach tree borer lesser peach tree borer mealy plum aphid peach twig borer pear psylla adults San Jose scale	1.5 - 4

Specific Use Precautions for Almond, Cherry, Nectarine, Peach, Pear, Plum, Prune, Walnut:
- Avoid contact with foliage in sweet cherries as premature leaf drop may result.

Specific Use Restrictions for Almond, Cherry, Nectarine, Peach, Pear, Plum, Prune, Walnut:
- Do not make a soil or foliar application of Yuma 4E or other product containing chlorpyrifos within 10 days of a dormant/delayed dormant application of chlorpyrifos to the orchard.

Additional Restrictions Specific to California for Almond, Cherry, Nectarine, Peach, Pear, Plum, Prune, Walnut:
- Do not use more than 1% dormant oil and/or penetrating surfactants in almond orchards less than 4 years old.
- Use a minimum of 100 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 pears, plums, and prunes.
- In orchards with high overwintering 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, a petroleum spray oil in a tank mix with Yuma 4E.
- Do not apply on almonds in the following counties in California: Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo, and Yuba.

Apple

Target Pests	Yuma 4E (pint/acre)
climbing cutworms *Lygus* obliquebanded leafroller pandemis leafroller rosy apple aphid San Jose scale	1.5 - 4

Specific Use Restrictions for Apple:
- Only one application of any chlorpyrifos containing product can be made per year. The application can be either a prebloom dormant/delayed dormant spray to the canopy or the trunk, or a post-bloom application to the lower 4 feet of the trunk [for post-bloom application instructions and restrictions on apple, refer to Apple Tree Trunk section of the label].

Additional Restrictions Specific to California for Apple:
- Use a minimum of 100 gpa of total spray volume.
- Refer to the University of California pest management guide for apples.
- In orchards with high overwintering 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, a petroleum spray oil in a tank mix with Yuma 4E.

Tree Fruits[1] and Almond (Trunk Spray or Preplant Dip)
(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 almond unless PPE required for early entry is worn.

[1]Cherry, nectarine, peach, plum

Apply Yuma 4E to tree trunks and lower branches using a coarse, low-pressure spray to control pests listed in the following table. Use a higher rate in the rate range when there is increased pest pressure. Unless otherwise specified, a second application may be made after two weeks and a third application may be made after harvest. Avoid spray contact with foliage in sweet cherries as premature leaf drop may result. Consult your state agricultural experiment station or extension service specialist for proper application timing for your area.

Crops	Target Pests	Yuma 4E (quart/100 gal)
cherry	American plum borer greater peach tree borer lesser peach tree borer	1.5 – 3
almond peach nectarine plum	peach tree borers (1) (2)	3

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:
1. **Preplant Dip Application (Peaches and Nectarines Only).** For preplant control of **peachtree borer**, use Yuma 4E at the equivalent application rate of 3 quarts per 100 gallons of water. Dip trees several inches above the grafting bud scar and plant immediately, or allow them to dry before returning to storage. Do not allow peach trees to remain in contact with the dip solution.
2. **Peach tree borer:** For control in established trees, apply before newly hatched borers enter the tree. Use as a coarse, low-pressure trunk spray and thoroughly wet all bark areas from ground level to scaffold limbs. Do not allow spray to contact fruit. Consult written recommendations provided by your State agricultural experiment station or extension service specialist for proper time to treat in your area.

Specific Use Restrictions:
- **Preharvest Interval:** Do not apply within 14 days before harvest of almonds, nectarines, peaches and plums, or within 21 days before harvest of cherries.
- Do not make more than one chlorpyrifos application per year in nectarines and peaches and no more than three chlorpyrifos applications per year in cherries.
- Do not allow meat or dairy animals to graze in treated orchards.

Tree Nuts[1] (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.

[1]Almond, filbert, pecan, walnut

Apply Yuma 4E 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 Yuma 4E 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. Consult your State agricultural experiment station, certified pest control advisor, or extension service specialist for specific use information in your area.

Crops	Target Pests		Yuma 4E (pint/acre)
almond	leaf footed plant bug navel orangeworm	peach twig borer San Jose scale	4
filbert	eye-spotted bud moth filbert aphid filbert leafroller filbert worm	obliquebanded leafroller omnivorous leaftier winter moth	3 – 4
pecan	blackmargined aphid (1) spittlebugs (2)	yellow pecan aphid (1)	1 – 4
	fall webworm	pecan nut casebearer	1.5 – 4
	black pecan aphid hickory shuckworm (3) *Phylloxera* spp.(4)	pecan leaf scorch mite (suppression) (5)	2 – 4
walnut	codling moth walnut husk fly	walnut scale	4

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. **Yellow pecan aphid** and **blackmargined aphid:** For control, apply in tank mix combination with the specified rate of a pyrethroid insecticide labeled for control or suppression of these aphids.
2. **Spittlebug:** For control, use a dosage of 2 to 4 pint per acre for concentrate sprays.
3. **Hickory shuckworm:** For best results, make two applications, 10 to 14 days apart.
4. ***Phylloxera* spp.:** For best control, make two applications at a 10-day interval using a minimum of 1 pint of Yuma 4E per acre starting at bud swell.
5. **Pecan leaf scorch mite:** For suppression, use a preventative program.

Specific Use Precautions:

- Yuma 4E is highly toxic to bees exposed to direct treatment and should 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 Yuma 4E.

Specific Use Restrictions:

- **Preharvest Interval:** Do not apply within 14 days before harvest of almonds, filberts and walnuts, or 28 days before harvest of pecans.
- Do not make more than three total applications per season of Yuma 4E or other product containing chlorpyrifos to almonds, pecans and filberts and no more than two applications per season on walnuts.

- Do not apply more than a total of 4 lb ai chlorpyrifos (8 pints of Yuma 4E) per acre per season as a foliar spray.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not allow meat or dairy animals to graze in treated orchards.
- Do not use on almond, filbert or walnut in Mississippi.
- Do not aerially apply this product in Mississippi.

Tree Nut[1] Orchard Floors

(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.

[1]Almond, pecan, walnut

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 (excluding fire, harvester, carpenter, and pharaoh ants) becomes evident in the orchard. Since worker ants (excluding fire, harvester, carpenter, and pharaoh 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: Yuma 4E 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 Application section.

Orchard Floor	Target Pests	Yuma 4E (pint/acre)
pecan	ants (1)	4
almond walnut		4 – 8

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

Pest-Specific Use Directions:

1. Excludes ants of significant public health importance such as fire ants, harvester ants, carpenter ants, and pharaoh ants.

Eliminate weed growth that would prevent uniform coverage of the orchard floor by mowing or herbicide treatment. Foliar applications of Yuma 4E 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 Yuma 4E.

Specific Use Restrictions:

- **Preharvest Interval:** Do not apply within 14 days before harvest.
- Do not make more than two applications of Yuma 4E or other product containing chlorpyrifos per season to the orchard floor. If the 8 pint per acre rate is used, a second application is not allowed.
- Do not apply more than 4 lb ai chlorpyrifos (8 pints of Yuma 4E) per acre per season to the orchard floor.
- Do not make a second application of Yuma 4E or other product containing chlorpyrifos within 10 days of the first application.
- Do not allow meat or dairy animals to graze in treated orchards.

Turfgrass
(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.

Dilute Yuma 4E in water and apply to turfgrass grown for sod using suitable application equipment. For best results, turfgrass should be moist at time of treatment.

Pests		Amount of Yuma 4E per fl oz/1000 sq ft	Amount of Yuma 4E per quart/acre
ants (1) armyworms beet fall yellowstriped centipedes chiggers chinch bugs crickets cutworms deer ticks earwigs European crane fly larvae fiery skipper fleas gnats grasshoppers	greenbug aphids green June beetle grubs leafhoppers Lucerne moth millipedes mites Bermudagrass stunt clover winter grain mosquitoes pillbugs springtails sod webworms (lawn moths) (2) sowbugs ticks	0.75	1
billbug adults (3) bluegrass Denver hunting		0.75 – 1.5	1 - 2
annual bluegrass weevil (*Hyperodes*) (4) black turfgrass ataenius adults (5) mole crickets (6)		1.5	2
white grubs (7) black turfgrass ataenius European chafer Japanese beetle larvae northern and southern masked chafers		1.5 - 3	2 - 4

Numbers in parentheses (-) refer to Specific Use Directions below.

Specific Use Directions:

1. Excludes ants of significant public health importance such as fire ants, harvester ants, carpenter ants, and pharaoh ants.
2. **Sod webworms:** Delay watering or mowing of the treated area for 12 to 24 hours after treatment.
3. **Billbugs:** Spray early in the season just prior to or coinciding with first appearance of adults as recommended by your local Agricultural Extension Service Specialist.
4. **Annual bluegrass weevil:** To control, spray suspected problem areas in mid-April and again in mid-May, or as recommended by your local Agricultural Extension Service Specialist.
5. **Black turfgrass ataenius adults:** Spray early in the season as recommended by your local Agricultural Extension Service Specialist. A repeat application may be needed 1 to 2 weeks later.
6. **Mole crickets:** To control, in turfgrass, apply Yuma 4E through high-pressure injection or other suitable subsurface placement application equipment. Depending upon the application equipment used, follow the manufacturer's directions for calibration and the volume of spray per acre needed to

provide control or as recommended by your local Agricultural Extension Service Specialist. For best results, apply when young nymphs are active.

7. **White grubs:** Spray when grubs are young and actively feeding near the soil surface, usually during late July and August, or as recommended by your local Agricultural Extension Service Specialist. For best results, soil should be moist prior to treatment. **For best results, immediately after spraying, irrigate the treated area with 1/2 to 1 inch of water to wash the insecticide into the thatch and underlying soil.**

Wheat

(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)

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.

Foliar Application

Apply using aerial (fixed wing or helicopter) or power-operated ground spray equipment. Mix the required dosage with water and apply in a minimum of 2 to 5 gpa finished spray volume for aerial equipment or 15 gpa for ground spray equipment. Apply when field counts indicate damaging pest populations are developing or present.

Chemigation: Yuma 4E may be applied through sprinkler irrigation systems at specified broadcast application rates to control listed foliar pests. See Chemigation Application section.

Target Pests	Yuma 4E (pint/acre)
aphids (1) English grain aphid greenbug Russian wheat aphid brown wheat mite grasshoppers	0.5 - 1
army cutworms (2) armyworms (3) cereal leaf beetle (4) cutworms (suppression) (2) wheat midge (5)	1

Numbers in parentheses (-) refer to Pest-Specific Use Directions.

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 1/2 inch long.
3. Expect suppression under conditions of heavy pest populations or large worms.
4. Target application when eggs are near hatching and larvae is emerging as monitored by plant inspection.
5. **Wheat midge:** For control, treat when 75% of the wheat heads have emerged from the boot and when midge adults are found in the crop (1 midge per 4 to 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:

- **Preharvest Interval:** Do not apply within 14 days before harvest for forage and hay and within 28 days before harvest for grain and straw.

- Do not make more than two applications of Yuma 4E or other product containing chlorpyrifos per season.
- Maximum single application rate is 0.5 lb ai chlorpyrifos (1 pint of Yuma 4E) 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.

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