

5481-8978

4/16/2014

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



OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

APR 16 2014

Kelly Rahn  
Amvac  
4695 MacArthur Court, Suite 1200  
Newport Beach, CA 92660

Subject: Fast Track Amendment to revise cotton section and other minor corrections  
Orthene 97 Pellets  
EPA Registration No. 5481-8978

Dear Ms. Rahn:

The labeling referred to above submitted in connection with the Federal Insecticide, Fungicide and Rodenticide Act, as amended is acceptable.

A stamped copy of the labeling is enclosed for your records. Please submit one final printed copy of the labeling before releasing the product for shipment. If you have any questions regarding this label, please contact Autumn Metzger at (703) 305-5314 or Metzger.autumn@epa.gov.

Sincerely,

A handwritten signature in cursive script that reads "Venus Eagle".

Venus Eagle  
Product Manager 01  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

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[Sub Label A – For All Uses Except Commercially Treated Cottonseed, Pages 1 – 38]

[Sub Label B – For Commercially Treated Cottonseed, Pages 39 – 43]

ACCEPTED  
APR 16 2014

[Sub Label A]

Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:

**ORTHENE<sup>®</sup> 97** EPA. Reg. No: 5481-8978  
(Soluble Insecticide)

Active Ingredient	By Weight
*Acephate.....	97.4 %
Inert Ingredients.....	2.6 %
Total.....	100.0 %
*O,S-Dimethyl acetylphosphoramidothioate	

U.S. Patent. No. 6,013,272

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>Acephate is an organophosphate, cholinesterase inhibitor.</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>EMERGENCY INFORMATION</b>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p> <p>FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:</p> <p>For Medical Emergencies phone:.....1-888-681-4261</p> <p>For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC.....1-800-424-9300</p> <p>For Product Use Information phone : AMVAC.....1-888-462-6822</p>	

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**NOTE TO PHYSICIAN**

This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal, 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA Reg. No. 5481-8978

Net Contents : \_\_ Pounds

EPA Est. No.



4100 E. Washington Blvd.  
Los Angeles, CA 90023 U.S.A  
1-888-462-6822

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS & DOMESTIC ANIMALS**

**CAUTION**

Harmful if swallowed.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product butyl rubber, nitrile rubber, or neoprene. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

**Mixers, Loaders, Applicators and Other Handlers must wear:** Long sleeved shirt and long pants, chemical-resistant gloves and shoes plus socks.

**In addition, all Mixers and Loaders and all Applicators using low pressure hand wand application equipment must wear:** A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approved number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter. **See Engineering Controls for additional requirements.**

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

The use of human flaggers is prohibited.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATION**

**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.

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning

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equipment or disposing of equipment washwaters. Cover or soil-incorporate spills.

OS:

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permitted and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

This product and its degradate are highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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 worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

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

- coveralls
- chemical resistant gloves made of any waterproof material
- shoes plus socks

#### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are **NOT** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

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

[Worker Protection exclusionary statement for use only with Cotton Seed Treatment use.]

Not for use on agricultural establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at, or immediately before, planting.

#### **TANK MIXES**

**NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.**

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Read and follow the entire label of each product to be used in the tank mix with this product.

**USE RESTRICTIONS**

- For use on turf, use limited to sod farms and golf courses, except when applying to mound or spot treatment for fire ant and harvester ant control.
- Do not apply with low pressure handwand except for control of fire ants as a mound treatment and when used on ornamental trees, shrubs and floral plants grown for non-agricultural or non-commercial use.
- Not for indoor residential use.
- For greenhouse use, use is limited to commercial greenhouses for use on ornamental, floral and foliage plants and tobacco (floatbed application).

**CHEMIGATION**  
Apply to Cranberries only by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or this crop using any other type of irrigation system.

**MIXING INSTRUCTIONS**

Thoroughly clean all sprayer components prior to mixing. Add approximately 1/2 of the required amount of water to the spray tank and begin agitation. Add the required amount of ORTHENE 97 insecticide and mix thoroughly. Then add other tank mix partners or foliar feed additives and the remaining water. Maintain agitation during filling and spraying to ensure a uniform spray mixture.

For application equipment which has minimal agitation, such as tobacco transplant water equipment, proper attention to mixing the ORTHENE 97 product should be given. With tobacco transplant water applications, the ORTHENE 97 product should be premixed in water to form a slurry prior to putting the product into the transplant water applicator. If premixing is not done, then adequate time should be allowed for the product to dissolve in the transplant water prior to beginning application.

**SPRAY DRIFT MANAGEMENT**

A variety of factors including weather conditions, (e.g., wind directions, wind speed, temperature, relative humidity) and method of application (e.g. ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator and grower must evaluate all factors and make appropriate adjustments when applying this product.

- All aerial, ground and air-assisted/airblast application equipment must be properly maintained and calibrated using water as carrier. *[This sentence to be used for products NOT containing "NON-CROP AREAS – Wasteland": Do not apply this product as an ultralow (ULV) spray, or in any carrier other than water. [This sentence to be used for products containing "NON-CROP AREAS – Wasteland: Do not apply this product as an ultralow (ULV) spray, or in any carrier other than water, except as specified in the instructions for "NON-CROP AREAS – Wasteland".]*
- Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
- Do not apply at wind speeds greater than 10 mph at the application site.
- Make applications when wind velocity favors on-target product deposition (approximately 3 to 10 mph).
- Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage.
- For aerial applications, do not apply at heights greater than 10 feet (consistent with flight safety).
- For airblast applications, direct spray above foliage and turn off outward pointing nozzles at row ends and outer rows. Apply only when wind speed is 3 to 10 mph at the application site as measured by an anemometer outside of the treated area on the upwind side.
- For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or rotor diameter. The boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3 to 10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or

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VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground. nozzle:

- For ground boom applications apply with nozzle height no more than 4 feet above the ground or crop canopy and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.
- Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.
- The applicator also must use all other measures necessary to control drift.

**BEANS AND LIMA BEANS - Dry Forms , Succulent Forms (Except Green Beans, Which Includes String Beans, Snap Beans and Wax Beans) and Succulent Green Beans Grown Only for Seed.**

**USE RESTRICTIONS:**

- Do not feed treated vines to livestock.
- Do not apply more than 2 1/8 lbs./A (2 lbs. ai) ORTHENE 97 per crop cycle.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

RESTRICTIONS: Use on succulent green beans as a food crop is prohibited (includes string beans, snap beans and wax beans). Succulent green bean use is permitted ONLY if grown for seed.

**RESTRICTIONS FOR SUCCULENT GREEN BEANS GROWN FOR SEED:**

- Do not feed crop residues to livestock or allow animals to graze treated areas.
- Do not apply to succulent green beans grown for fresh market or processing.
- No portion of the succulent green bean plant may be used or distributed for food or feed purposes.
- Seeds grown from succulent green beans shall bear a tag or container label which forbids use of the seed for human consumption or animal feed.
- Seed grown from succulent green beans may not be distributed for human consumption or animal feed.

**TABLE 1. BEANS AND LIMA BEANS - Dry forms , succulent forms (except green beans, which includes string beans, snap beans and wax beans) and succulent green beans grown only for seed.-**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 20 to 100 gals./A of spray.  <b>By Air:</b> Minimum of 2 gals./A of spray.	Fleahoppers Grasshopper	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	14 (dry beans)
	Aphid (excluding Black Bean Aphid) Bean Leaf Beetle Bean Leafroller Cabbage Looper Cutworm Green Cloverworm Leafhoppers Mexican Bean Beetle Plantbugs (Lygus) Soybean Looper Thrips Whitefly (except Sweetpotato or Silverleaf Whitefly)	1/2 to 1.0 lb. (8 to 16 oz.)	Use higher rates within the specified rate range for severe insect infestations.	1 (lima beans - succulent form)

NC	Armyworm (excluding Beet Armyworm) -Corn Earworm European Corn Borer	3/4 to 1.0 lb. (12 to 16 Oz.)		
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**CELERY**

**USE RESTRICTIONS**

- All celery must be trimmed (tops removed) before shipment for use.
- Do not use trimmed tops for food or feed.
- Do not apply more than 2 1/8 lbs./A (2 lbs. ai) ORTHENE 97 per crop cycle.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

**TABLE 2. CELERY -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 50 to 100 gals./A of spray.  By Air: Minimum of 5 gals./A of spray.	Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Apply when eggs or insects first appear.	21
	Cabbage Looper Fall Armyworm	1.0 lb. (16 oz.)		

**COLE CROPS – Brussels Sprouts and Cauliflower**

**USE RESTRICTIONS**

- Do not apply more than 2 1/8 lbs. ORTHENE 97 (2 lbs. ai) /A per crop cycle.
- Do not feed trimmings to livestock or allow animals to graze in treated areas.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

**TABLE 3. COLE CROPS - Brussels Sprouts and Cauliflower -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 25 to 150 gals./A of spray.  By Air: Minimum of 5 gals./A of spray.	Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Use the high rate when heavy infestations of Aphid are present. Apply when eggs or insects first appear.  <b>Diamondback Moth Larvae:</b> This insect has demonstrated an ability to develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current recommended control practices for this insect.	14
	Cabbage Looper Diamondback Moth Larvae Imported Cabbage Worm	1.0 lb. (16 oz.)		

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**COTTON**

**USE RESTRICTIONS**

- Do not feed treated forage or gin trash to livestock.
- Do not allow animals to graze on treated areas.
- Do not apply more than 4 1/8 lbs ORTHENE 97 (4 lbs. ai) /A per crop cycle. This includes the use of ORTHENE in commercial seed treatment, in furrow spray, and foliar applications.
- For Foliar treatment repeat applications, use a minimum spray interval of 7 days.
- For In-furrow treatments, make only one application per season.

**For Aerial Application:**

- Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.
- Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.

**TABLE 5. COTTON -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
<b>IN FURROW</b>  <b>By Ground:</b> 3 to 5 gals./A of spray.	Aphid (excluding Cotton Aphid in AZ & CA) Black (Greasy) Cutworm (except CA) Thrips (including Western Flower Thrips)	1/2 to 1.0 lb. (8 to 16 oz.)  <b>For the Blacklands of Texas use 1.0 lb./A ORTHENE 97.</b>	Use flat fan nozzles for in furrow application. Align nozzles to ensure good spray deposition into the seed furrow. Cone type nozzles are not recommended since unacceptable spray deposition may occur.  Securely fasten spray system tubing to furrow opener and check frequently to ensure proper positioning and operation.  ORTHENE 97 can be mixed with fungicides that are sprayed in furrow for disease control.	21
<b>FOLIAR</b>  <b>By Ground:</b> 10 to 25	Thrips (including Western Flower Thrips)	2.5 oz. to 3.0 oz.	Apply when eggs or insects first appear.	21



<p>gals./A of spray.</p> <p><b>By Air:</b> 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ &amp; CA).</p> <p><b>For Aerial Application</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>	Plantbugs (Lygus)	<p>1/4 to 1.0 lb. (4 to 16 oz.)</p> <p>3/4 to 1.0 lb. (AZ &amp; CA)</p>	<p>Apply when eggs or insects first appear.</p> <p>Use highest rate for Lygus adults that have migrated into cotton.</p>	21
	<b>FOLIAR</b>	Fleahopper	1/4 lb. (4 oz.)	Apply when eggs or insects first appear.
<p><b>By Ground:</b> 10 to 25 gals./A of spray.</p> <p><b>By Air:</b> 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ &amp; CA).</p> <p><b>For Aerial Application</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>	Cotton Aphid (excluding AZ & CA)	1/2 to 1.0 lb. (8 to 16 oz.)	This insect may develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current control recommendations.	21
	Whitefly (excluding Sweetpotato Whitefly/Silverleaf Whitefly)	1/2 to 1.0 lb. (8 to 16 oz.)		21
	Armyworm (excluding Beet Armyworm) Cabbage Looper	1.0 lb. (16 oz.)	Apply when eggs first appear.	21
	Bollworm Tobacco Budworm Adults Larvae	<p>1/2 to 1.0 lb. (8 to 16 oz.) (East of Rockies)</p> <p>1.0 lb. (AZ &amp; CA)</p>	<p>Early Season: Use 1/2 lb. product /A for light infestation.</p> <p>Mid and Late Season: Use 3/4 to 1.0 lbs./A for moderate to severe infestations.</p> <p>Apply when eggs first appear.</p> <p>Moths of budworm larvae are controlled by direct contact with spray. Moth kill is most likely to occur when late evening applications are made.</p> <p>DEADHATCH: Control of emerging larvae by consumption of treated egg casings.</p>	21
	Eggs/DEADHATCH®	1/4 to 1/2 lb.		21
	Stinkbugs	3/4 lb. (12 oz.)	Apply when eggs first appear.	21

<sup>1</sup> For Foliar treatment repeat applications, use a minimum spray interval of 7 days

TABLE 5. COTTON - continued

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 10 to 25 gals./A of spray.  <b>By Air:</b> 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA).  <b>For Aerial Application</b> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>	Pink Bollworm (AZ & CA)	1.0 lb. (16 oz.)	Apply when insects first appear.	21
	Cutworm	3/4 lb. (12 oz.)	Ground application is recommended.  Aerial applications are less effective, but may be used.  Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.  Apply when insects first appear or damage is first noted.	21

<sup>1</sup> For Foliar treatment repeat applications, use a minimum spray interval of 7 days

**RESISTANCE MANAGEMENT**

Cotton pest control programs should employ a properly designed resistance management strategy. Such resistance management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

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**COTTON TANK MIXES**

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**USE RESTRICTIONS:**

- Do not feed treated forage or gin trash to livestock.
- Do not allow livestock to graze on treated areas.
- Do not apply more than 4 1/8 lbs ORTHENE 97 (4 lbs. ai) /A per crop cycle. This includes the use of ORTHENE 97 in commercial seed treatment, in-furrow spray and foliar applications.
- For repeat applications, use a minimum spray interval 7 days.

**For Aerial Application:**

- Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.
- Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.

Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

**TABLE 6. COTTON TANK MIXES -**

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APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 + TANK MIX PARTNER PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
<p><b>FOLIAR</b></p> <p><b>By Ground:</b> 10 to 25 gals./A spray.</p> <p><b>By Air:</b> 3 to 10 gals./A of spray (minimum 5 gals./A in CA).</p> <p><b>For Aerial Application</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>	Sweetpotato Whitefly (Silverleaf Whitefly)	ORTHENE 97 + DANITOL® 2.4 EC	1/2 to 1 lb. (8 to 16 oz) + 8 to 16 fl. oz.	<p>Follow all applicable directions, restrictions and precautions on the EPA registered label for Danitol 2.4 EC Spray.</p> <p>Use a minimum application rate of 10 2/3 fl. oz./A Danitol (0.2 lb. ai./A) in CA and AZ.</p>	21
<p><b>FOLIAR</b></p> <p><b>By Ground:</b> 10 to 25 gals./A spray.</p> <p><b>By Air:</b> 3 to 10 gals./A of spray (minimum 5 gals./A in CA).</p> <p><b>For Aerial Application</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>	Armyworm (excluding Beet Armyworm) Bollworm Cabbage Looper Cotton Aphid Cutworm Fleahopper Grasshopper Pink Bollworm Plantbugs (Lygus, Mirids) Salt Marsh Caterpillar Thrips (Including Western Flower Thrips) Tobacco Budworm Whitefly (Excluding Sweetpotato/Silverleaf Whitefly)	ORTHENE 97 + LORSBAN® 4E	1/4 to 1.0 lb. (4 to 16 oz.) + 1 to 2 pts.	<p>Follow all applicable directions, restrictions and precautions on the EPA registered label for LORSBAN 4 E.</p> <p>Cutworm: Use 3/4 lb./A of ORTHENE 97.</p> <p>By Ground: Ground application is recommended.</p> <p>Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.</p> <p>By Air: Aerial applications are less effective, but may be used.</p> <p>Apply when insects first appear or when damage is first noted.</p>	21

<sup>1</sup>For repeat applications, use a minimum spray interval of 7

**RESISTANCE MANAGEMENT**

Cotton pest control programs, especially those for control of Silverleaf Whitefly populations, should employ a properly designed resistance management strategy. Such resistance management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.



APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 + TANK MIX PARTNER PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
<b>FOLIAR</b> <b>By Ground:</b> 10 to 25 gals./A spray. <b>By Air:</b> 3 to 5 gals./A spray (minimum 5 gals./A in CA). See aerial remarks for Cutworm. <b>For Aerial Application</b> <ul style="list-style-type: none"> <li>Do not apply more than 1 lb./A ORTHENE 97 per application to cotton grown in AZ and CA.</li> <li>Do not apply more than 3/4 lb./A ORTHENE 97 per application to cotton grown in all other states except AZ and CA.</li> </ul>		ASANA® XL*	Refer to the ASANA XL approved label for use instructions.		21
		BAYTHROID® 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.		21
		CAPTURE® 2 EC	Refer to the CAPTURE 2 EC approved label for use instructions.		21
		KARATE® 1 E (except CA)	Refer to the KARATE 1 E approved label for use instructions.		21
		SCOUT X-TRA® (except CA)	Refer to the SCOUT X-TRA approved label for use instructions.		28

<sup>1</sup>For repeat applications, use a minimum spray interval of 7 days.

**RESISTANCE MANAGEMENT**

Cotton pest control programs, especially those for control of Silverleaf Whitefly populations, should employ a properly designed resistance management strategy. Such resistance management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

**CRANBERRY**

- Limit to one application per growing season.
- Do not apply more than 1.0 lb. ORTHENE 97 (1.0 lb. ai) per season.
- Do not apply from start of bloom until all berries set.

**TABLE 8. CRANBERRY –**

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
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14/44

<p><b>FOLIAR</b></p> <p><b>By Ground or Sprinkler:</b> Sufficient water to give thorough coverage.</p> <p><b>By Air:</b> Minimum of 2 gals./A of spray.</p>	<p>Cranberry Blossom Worm Cranberry Cutworm Gypsy Moth False Armyworm Fireworm Spanworm Sparganothis</p>	<p>1.0 lb. (16 oz.)</p>	<p><b>SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:</b></p> <p>This product may only be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.</p> <p>Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.</p> <p>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</p>	<p>90</p>
<p><b>FOLIAR</b></p> <p><b>By Sprinkler:</b> Sufficient water to give thorough coverage.</p> <p><b>By Air:</b> Minimum of 2 gals./A of spray.</p>	<p>Cranberry Blossom Worm Cranberry Cutworm Gypsy Moth False Armyworm Fireworm Spanworm Sparganothis</p>	<p>1.0 lb. (16 oz.)</p>	<p><b>RESTRICTION:</b> Use limited to MA, NJ, OR, WA and WI.</p> <p><b>SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:</b></p> <p>This product may only be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.</p> <p>Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.</p> <p>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</p>	<p>75</p>

**Chemigation:** Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed solenoid operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

**Solid Set System:** Apply specified dosage for the entire length of the irrigation period, or for a 30 to 60 minute period at the end of a regular irrigation set, or as a 30 to 60 minute injection as a separate application not associated with a regular irrigation. Allow time for all lines to flush the pesticide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining pesticide, a dye indicator may be injected into the lines to mark the end of the application period. See **NOTE**.

**Center Pivot Systems:** Inject the specified dosage per acre continuously for one complete revolution of the system. See **NOTE**.

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NOTE: Constant agitation must be maintained in the chemical supply tank during the entire period of insecticide application. Inject the product with a positive displacement pump into the main line ahead of a right turn to ensure adequate mixing.

Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness.

**HEAD LETTUCE - Crisphead Type Only**

**USE RESTRICTIONS**

- Do not apply more than 2 1/8 lbs./A (2 lbs. ai) ORTHENE 97 per crop cycle.
- Do not feed trimmings to livestock or allow animals to graze on treated areas.
- AZ & CA, (desert areas): Do not apply after first head begins to form in crops which germinate from mid-September through November.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb./A.

**TABLE 9. HEAD LETTUCE - Crisphead Type Only -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 10 to 60 gals./A of spray broadcast.  By Air: Minimum of 5 gals./A of spray.	Aster Leafhopper Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Applications may be made in spring, summer and early fall in all areas; winter applications may be made in AZ, CA, FL and TX; and late fall applications may be made in AZ.	21
	Armyworm (excluding Beet Armyworm) Cabbage Looper	1.0 lb. (16 oz.)		

**MINT - Peppermint and Spearmint**

**USE RESTRICTIONS**

- Do not apply more than 2 1/8 lbs./A (2 lbs. ai) ORTHENE 97 per crop cycle.
- Do not graze treated areas.
- Do not feed spent mint hay to animals.

**TABLE 10. MINT - Peppermint and Spearmint -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 20 to 100 gals./A of spray.  By Air: 5 to 10 gals./A of spray.	Alfalfa Looper Aphid Cutworm	1.0 lb. (16 oz.)	Apply when eggs or insects first appear.  Maximum number of applications per year is 2. The minimum application interval is 7 days.	14

<p><b>FOLIAR</b></p> <p>By Ground: 40 to 100 gals./A of spray.</p>	<p>Strawberry Root Weevil Adult Black Vine Weevil Adult</p>	<p>1.0 lb. (16 oz.)</p>	<p><b>Strawberry Root and Black Vine Weevil:</b></p> <p>For control, apply in water in a minimum of 40 gals. spray per acre by ground. Good spray coverage and canopy spray penetration is critical for control. Increase spray volume and pressure with tall or dense mint canopy.</p> <p>Apply after adult emergence is complete but prior to egg laying. Apply at dusk or during the night on a warm still evening.</p> <p>Make one repeat application, at a minimum of a 7 day interval, if necessary to maintain control.</p>	<p>14</p>
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**NON-BEARING CITRUS - In Agricultural Settings  
(Newly Planted Groves)**

**USE RESTRICTIONS**

- Do not graze treated areas.
- DO NOT HARVEST citrus for one year (365 days) after treatment.

**TABLE 11. NON-BEARING CITRUS -**

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PER ACRE	REMARKS
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<b>FOLIAR</b>  <b>By Ground:</b> 100 to 200 gals./A of spray	†Aphid Grasshopper Katydid Mealybug Orangedog Plantbug Thrips Whiteflies (except Sweetpotato/Silverleaf)	1/2 lb. (8 oz.)	For repeat applications, use a minimum spray interval of 7 days.
	Citrus Blackfly*	1/2 to 3/4 lb. (8 to 12 oz.)	Apply when eggs or insects first appear.  Use the high rate when a heavy infestation is present.  For repeat applications use a minimum spray interval of 7 days.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants)	3/4 lb. (12 oz.)	For repeat applications, use a minimum spray interval of 7 days.
Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.			
<b>SOIL MOUND TREATMENT</b>  <b>DRENCH METHOD</b>	Ants (excluding carpenter and pharaoh)*	3/4 oz./5 gals.	Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.  For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.

\* Not registered in CA for control of Citrus Blackfly and Harvester Ants.

**NON-CROP AREAS**

**Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits**

**USE RESTRICTIONS**

- Do not graze or feed vegetation cut from treated areas.

**TABLE 12. NON-CROP AREAS – Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS
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18/44

<b>FOLIAR</b>  <b>By Ground:</b> 10 to 20 gals./A of spray.  <b>By Air:</b> 1 to 5 gals./A of spray (minimum of 5 gals./A in CA).	Grasshopper	1/4 lb. (4 oz.)	For early to mid-season application.  Use the higher volumes when spraying dense foliage.  An approved drift retardant may be added to aid in controlling drift and reducing evaporation of aerial sprays.
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**NON-CROP AREAS - Wasteland**

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**USE RESTRICTIONS**

- Do not make more than one application ORTHENE 97 per season.
- Do not graze or feed vegetation cut from treated areas.

**TABLE 13. NON-CROP AREAS - Wasteland -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS
<b>FOLIAR</b>  <b>By Ground:</b> 10 to 20 gals./A of spray.  <b>By Air:</b> 1/2 gal./A of spray (minimum of 5 gals./A in CA).	Black Grass Bugs Grasshopper Mormon Crickets	1.5 oz. to 2 oz.	Use the higher volumes when spraying dense foliage.  An approved drift retardant may be added to aid in controlling drift and reducing evaporation of aerial sprays.

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**PEANUTS**

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**USE RESTRICTIONS**

- Do not feed treated forage or hay to livestock.
- Do not allow animals to graze on treated areas.
- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 on peanuts as a foliar spray in addition to the peanut planterbox seed treatment use.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

**TABLE 14. PEANUTS -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
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19/44

<b>FOLIAR</b>  <b>By Ground:</b> 10 to 50 gals./A of spray.  <b>By Air:</b> 5 to 10 gals./A of spray.	Grasshopper	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	14 (of digging)
	Thrips	3/8 to 3/4 lb. (6 to 12 oz.)	ORTHENE can be tank mixed with registered at cracking and early post-emergence peanut herbicides, provided those products do not prohibit tank mixes, provided the most restrictive of label limitations and precautions are observed, and provided no label dosage rates are exceeded.	
	Corn Earworm Fall Armyworm Leafhoppers Loopers Velvetbean Caterpillar	3/4 to 1.0 lb. (12 to 16 oz.)	To determine physical compatibility, pour the recommended proportions of each chemical with the same proportion of water as will be present in the chemical supply tank into a suitable container, mix thoroughly and allow to stand for 5 minutes. If the combination remains mixed, or can be remixed readily, the mixture is considered physically compatible. When mixing wettable powder or dry flowable formulations, add and disperse these first, then add liquid pesticides. Conduct another compatibility test at concentrations, which will be present in the irrigation lines. If there is any separation, which cannot be remixed readily, VALENT recommends that the combination not be used.  Combinations should be kept agitated and should be applied immediately. Do not allow combinations to sit for prolonged periods in the chemical supply tank or irrigation lines.	

20/44

**PEPPERS – Bell**

**USE RESTRICTIONS**

- Do not apply more than 2 1/8 lbs./A (2 lbs. ai) ORTHENE 97 per crop cycle.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

TABLE 15. PEPPERS - Bell –

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 25 to 150 gals./A of spray.  By Air: Minimum of 3 gals./A of spray (minimum of 5 gals./A in CA).	Grasshopper	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	• 7
	Cabbage Looper Green Peach Aphid Tobacco Hornworm	1/2 to 1.0 lb. (8 to 16 oz.)		
	European Corn Borer	3/4 to 1.0 lb. (12 to 16 oz.)		

**PEPPERS – Non-Bell**

FOR USE IN MIDWESTERN, EASTERN STATES AND PUERTO RICO ONLY.

**USE RESTRICTIONS**

- Do not apply more than 1 lbs./A (1 lb. ai) ORTHENE 97 per crop cycle.

TABLE 16. PEPPERS - Non-Bell -

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 40 to 150 gals./A of spray.	Aphid	1/2 lb. (8 oz.)	For repeat application use a minimum spray interval of 3 days.	7

2/1/44

**SOYBEANS**

**USE RESTRICTIONS**

- Do not graze or cut vines for hay or forage.
- Do not apply more than 1.5 lbs./A (1.5 lbs. ai/A) of ORTHENE 97 per season.
- Do not apply ORTHENE 97 within 14 days of harvest.
- For rates up 0.5 lb/A, at least 3 days must pass between applications of ORTHENE 97.
- For rates between 0.5 lb. product/A and 1.0 lbs./A, at least 7 days must pass between applications of ORTHENE 97.
- Always read and follow all label directions, restrictions and precautions when using any pesticide alone or in tank mix combinations. The most restrictive labeling applies when using a tank mix.

**TABLE 17. SOYBEANS -**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b> By Air: 5 to 10 gals./A of spray  By Ground: 10 to 50 gals./A of spray	Grasshopper Thrips	0.25 to 0.5 lb.	Repeat treatment as necessary to maintain control, but do not exceed a maximum of 1.5 lbs./A (1.5 lbs. ai/A) per season.	14
	Potato Leafhopper Stink Bugs	0.5 to 1 lb.		
	Armyworms (except Beet) Bean Leaf Beetle Cabbage Looper Green Cloverworm Mexican Bean Beetle Soybean Aphid Threecornered Alfalfa Hopper Velvetbean Caterpillar	0.75 to 1 lb.		

**TOBACCO (Except CA) - Transplant Water Application**

**USE RESTRICTIONS**

- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.

**TABLE 18. TOBACCO (Except CA) - Transplant Water Application -**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworm Flea Beetle Green Peach Aphid Potato Tuberworm Tobacco Aphid Tobacco Thrips	3/4 lb. (12 oz.)	Provides control of early season flea beetles, green peach Aphid, tobacco Aphid, and Cutworm for approximately 3 to 4 weeks after transplanting. For later season control of these insects, apply a foliar spray of ORTHENE 97.  Apply in a minimum of 100 gals. of transplant water per acre. ORTHENE 97 should be pre-mixed in water to form a slurry solution prior to adding to the transplant water tank.  Do not apply more than 3/4 lb. ORTHENE 97 per acre as a transplant water application as some phytotoxicity may occur.  Make transplant water applications using mechanical transplant equipment only. Using such equipment, the insecticide/water mixture is mechanically applied directly into the soil along with the transplanted plants.

**TOBACCO (Except CA) – Foliar Application**

**USE RESTRICTIONS**

- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.

**TABLE 19. TOBACCO (Except CA) - Foliar Application -**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco (Flue-Cured, Air Cured, Dark Fire Cured)	Grasshopper	1/4 to 1/2 lb. (4 to 8 oz.)	Apply in 10 to 50 gals. water per acre with ground equipment or a minimum of 3 gals. per acre by air.	3
	Flea Beetle Green Peach Aphid Hornworm Tobacco Thrips	1/2 lb. (8 oz.)		
	Stinkbugs Tobacco Aphid Vegetable Weevils	1/2 to 3/4 lb. (8 to 12 oz.)		
	Budworm Cabbage Looper Cutworm Japanese Beetle	3/4 lb. (12 oz.)		

**TOBACCO (Except CA) – Plant Bed Application**

**USE PRECAUTIONS**

- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.

**TABLE 20. TOBACCO (Except CA) - Plant Bed Application -**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco Bed Treatment	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	3/4 lb. (12 oz.)	Apply to foliage at the equivalent of 3/4 Tbsp. in 1 gal. of water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage.  For repeat applications use a minimum spray interval of 7 days.

**TOBACCO (Except CA) – Greenhouse Application**

**USE RESTRICTIONS**

- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.

**TABLE 21. TOBACCO (Except CA) Greenhouse Application -**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	3/4 lb. (12 oz.)	Apply to foliage at the equivalent of 3/4 Tbsp. in 3 gals. water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage.  For repeat applications use a minimum spray interval of 7 days.  <b>Note:</b> Floatbed water should be disposed of in the transplanted field in either transplant water or foliar spray.

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**TOBACCO (Except CA) – Soil Application**

**USE RESTRICTIONS**

- Do not apply more than 4 1/8 lbs./A (4 lbs. ai) ORTHENE 97 per crop cycle. This includes the use of ORTHENE 97 in transplant water, plant bed, soil, float bed (greenhouse) and foliar applications.
- Treat maximum of 13 mounds per acre.
- Do not treat more than once per season.

**TABLE 22. TOBACCO (Except CA) - Soil Application -**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco	Ants (excluding carpenter, fire, harvester and pharaoh)	<b>Drench Method:</b> Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.	3

**SMALL VOLUME SPRAY EQUIPMENT**

**Preparation of ORTHENE 97 Spray Mix Using a Small Fluid Ounce Measuring Cup**

LABEL RATES ORTHENE 97 IN 100 GALS. OF WATER	EQUIVALENT ORTHENE 97 IN 25 GALS. OF WATER	EQUIVALENT ORTHENE 97 IN 1 GALS. OF WATER (TSP./GAL.)
1/4 lb.	1 oz.	1/3 tsp.
1/2 lb.	2 oz.	2/3 tsp.
3/4 lb.	3 oz.	1 tsp.
1 lb.	4 oz.	1 1/3 tsp.



25/44

**NON-BEARING CITRUS**

**USE RESTRICTIONS**

- Do not graze treated areas.
- **DO NOT HARVEST** citrus for one year (365 days) after treatment.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Non-bearing Citrus (including citrus nursery seedlings)	Aphid Grasshopper Katydid Mealybugs Orangedogs Plant Bugs (Lygus) Thrips Whiteflies	1/2 lb. (8 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.
	Citrus Blackfly*	1/2 to 3/4 lb. (8 to 12 oz.)	The high rate should be used when a heavy infestation of Citrus Blackfly is present. Begin applications when eggs or adults first appear. Apply on a 7 to 10 day interval or as needed to maintain control	Do not allow livestock to graze treated areas.  <b>DO NOT HARVEST</b> citrus for one year after treatment.
Non-bearing Citrus (including citrus nursery seedlings)	Ants (excluding carpenter, fire, harvester and pharaoh)*	Foliar Spray 3/4 lb. (12 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.
		<b>Drench Method:</b> Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.		For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.

\* Not registered in CA for control of Citrus Blackfly and Harvester Ants.

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**NURSERY STOCK**  
**Non-Bearing Deciduous Fruit Trees, Nut Trees and Vines**  
**In Nursery Fields or Non-Bearing Orchards**

**USE RESTRICTIONS**

- **Do Not Allow Livestock To Graze Treated Areas.**
- For application only to non-bearing trees and vines in nursery fields or in non-bearing orchards.
- Do not apply to interplants or single trees in a bearing orchard.
- Do not harvest any fruit from sprayed trees for one year (365 days) after application.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

PLANTS	PESTS CONTROLLED	AMOUNT OF ORTHENE 97 PER ACRE	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Nursery Stock (Non-bearing Deciduous Fruit Trees, Nut Trees, Vines) Almond Apricot Apple Cherry Grape Kiwi Pear Pistachio Plum Prune Walnut	Aphid Plant Bugs (Lygus) Thrips	1/2 to 1 lb. (8 to 16 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 in 50 to 200 gals. of water per acre by ground and not less than 5 gals. of water per acre by air.

**NON-CROP AREAS**  
**Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits**

**USE RESTRICTIONS**

- **Do not graze or feed vegetation cut from treated areas.**
- Do not treat mounds more than once per season
- Do not use on turf for control of grasshoppers.

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas (field borders, fencerows, roadsides, ditchbanks and borrow pits)	Grasshopper	1/4 lb. (4 oz.)	For early to mid-season application to Grasshopper in field borders, fencerows, roadsides, ditchbanks, and borrow pits. Apply in 1 to 5 gals. of water by air, or in 10 to 20 gals. of water with ground equipment. Use the higher volumes when spraying heavier foliage.

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Non-Crop Areas	Ants (excluding carpenter and pharaoh)	<b>Drench Method:</b> Mix 3/4 oz in 5 gals of water. Apply 1 gal of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.  Grass in treated area may be injured.
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**CONTAINER GROWN NURSERY STOCK**

**USE RESTRICTIONS**

- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Container Grown Nursery Stock (Arborvitae, Azalea, Camellia, Rhododendron, Roses, Viburnum, Yew)	Black Vine Weevil, Strawberry Root Weevil	3/4 lb. (12 oz.)	Application should be made by mid-September for greenhouse stock and by mid-October for outdoor stock. Consult your local county extension agent for information on the identification and control of root weevils on ornamentals.	Apply the specified amount of ORTHENE 97 per 100 gals. of solution so as to thoroughly drench the root system.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants)	3/4 lb. (12 oz.)	Apply as needed to control the pest.	

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**ORNAMENTAL TREES AND SHRUBS**

**USE RESTRICTIONS**

- Do not exceed 16 oz. of ORTHENE 97 per acre per application.
- Do not apply with a low pressure hand wand.
- For all trees except Flowering Crabapple and Douglas Fir must not be made more than once every 14 days. See "Further Use Instructions" for spray interval information regarding Flowering Crabapple and Douglas Fir.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Trees and Shrubs (except Flowering Crabapple)	Aphid Bagworm Birch Leafminer Lace Bug Leafroller Tent Caterpillar*	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer. The addition of a suitable sticker improves control of Gypsy Moth larvae.
	Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae* Webworms	1/2 lb. (8 oz.)	As the insects begin to appear.	<b>*Mist blower application:</b> Adjust rates to 1 lb. product per 100 gals. of water for Gypsy Moth control and 3/4 lb. product per 100 gals. of water for Tent Caterpillar control.
	Scales (Crawlers)	1/2 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	AMVAC not advise application be made to Huckleberry, Balm of Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum as it may result in phytotoxicity in these plants.  <b>Nursery crops:</b> Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.
	Ponderosa Pine Needle Miner	1/2 lb. (8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer as a full coverage spray .
	Grasshopper	1/2 lb. (8 oz.)	As the Grasshopper begin to appear.	

continued

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**ORNAMENTAL TREES AND SHRUBS** continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Trees and Shrubs (except Flowering Crabapple)	California Oakworm Cankerworm (Spring and Fall)	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	3/4 lb. (12 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent. Repeat applications will be required for subsequent generations.	
	Root Weevil Adults	3/4 lb. (12 oz.)	Apply when first feeding damage occurs. Repeat applications, at 4 week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of ORTHENE 97 in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bug Budworm Leafhopper Sawflies	3/4 lb. (12 oz.)	As the insects begin to appear.	
	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetle begin to appear. Repeat applications, at 2 week intervals, may be necessary.	Apply the specified amount of ORTHENE 97 in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Elm Leaf Beetle (larvae)	1 lb. (16 oz.)	As the larvae begin to appear. ORTHENE 97 will not prevent Elm Leaf Beetle eggs from hatching.	Apply the specified amount of ORTHENE 97 in 100 gals. of water with a hydraulic sprayer as a full coverage spray.

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ORNAMENTAL TREES AND SHRUBS continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Douglas Fir	Douglas Fir Needle Midge Douglas Fir Tussock Moth • •	1/2 lb. (8 oz.) (1/2 lb./A)	Application should be made no more than 2 weeks prior to bud burst. For additional pest management information, consult your County Extension Service.	Apply the specified amount of ORTHENE 97 in not less than 2 gals. of spray per acre by air or in 100 gals. of spray per acre by ground. Do not make more than 1 application per season.
Flowering Crabapples	Aphid Leafroller Tent Caterpillar	1/4 lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 97 in 100 gals. of water with a hydraulic sprayer.  Do not apply more often than 3 times in a growing season at a minimum 4 week interval.  <b>Caution:</b> Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.
Crepe Myrtle	Aphid	2 to 3 Level Tbsp. (0.6 to 0.9 oz.) per 1 Tbsp. of water.	As Aphid begin to appear.	Make a paint on slurry by mixing the specified amount of ORTHENE 97 with 1 Tbsp. of water. Remove the loose bark from the trunk areas to be treated. Completely paint a band around each trunk to a width twice its diameter. Application should be made to trunks within a zone 6 to 12 inches above the ground and below the point where branching begins. For multi-trunk plants be certain to treat all trunks. For either single or multi-trunk plants, application should be made as low as possible within the recommended treatment zone.

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**GOLF COURSE TURFGRASS**

**USE RESTRICTIONS**

- Do not allow livestock to graze treated areas.
- Do not feed treated grass to livestock.
- Do not apply to turfgrass by air.
- Do not apply more than 4 1/8 lbs. (4.0 lbs. ai/A) of ORTHENE 97 to Golf Courses per single application.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb/A.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 1000 SQ. FT.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Golf Course Turfgrass	Cutworm Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 0.9 oz. (1 to 2 1/2 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 97 per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Chinch Bug	0.9 to 1.5 oz. (2 1/2 to 4 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	
	Sod Webworm	0.4 to 0.8 oz. (1 to 2 lbs./A)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations.  Repeat application may be necessary. Do not repeat at more than 1 week intervals.	
	Leafhopper	0.8 oz. (2 lbs./A)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	

continued

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GOLF COURSE TURFGRASS continued

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 1000 SQ. FT.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Golf Course Turfgrass	Mole Cricket (except CA) Spittlebug (except CA)	0.8 to 1.4 oz. (2 to 3.9 lbs./A)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	Apply the specified amount of ORTHENE 97 per 1,000 sq. ft. Use 1 to 15 gals. of water per 1,000 sq. ft. to obtain good coverage.  Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.  The use of a lemon fragrance substance in the spray mix may enhance control by acting as a flushing agent and thus provide increased mole cricket contact with the ORTHENE 97. The following lemon scented products have been shown to be effective flushing agents: Lemon Joy, Lemon Palmolive, and Mighty Myrt Products Manufacture Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 tsp. per gal. of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.
	Greenbug ( <i>Schizaphis graminum</i> ) Grasshopper	0.4 oz. (1.0 lb./A)	Apply when insects or their damage first appears. Repeat as necessary. Application is not to be repeated at more than 1 week intervals.	Apply the specified amount of ORTHENE 97. Use 4 gals. of water per 1,000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.
	Black Turfgrass Ataenius (except CA)	1.1 to 1.5 oz. (3 to 4 lbs./A)	Apply when insects or their damage first appear.	Apply the specified Amount of ORTHENE 97 per 1,000 sq. ft. Use a minimum of 5 gals. of water per 1,000 sq. ft. Irrigate lightly after application (not more than 1/2 inch). Use the higher rate for severe infestations



**SOD FARM TURFGRASS**

**USE RESTRICTIONS**

- Do not allow livestock to graze treated areas.
- Do not feed treated grass to livestock.
- Do not apply to turfgrass by air.
- Do not apply more than 3.1 lbs./A (3.0 lbs. ai/A) ORTHENE 97 to Sod Farm Turfgrass in a single application.
- User must allow at least 3 days between last application and harvesting of sod.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 1000 SQ. FT.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Sod Farm Turfgrass	Cutworm Fall Armyworm Grasshopper Greenbug Leafhopper Sod Webworm Southern Armyworm Yellow Striped Armyworm	0.4 to 0.9 oz. (1 to 2 1/2 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 97 per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage. Do not apply more than 3.1 lbs./A in a single application.
	Chinch Bugs Mole Cricket (except CA) Spittlebug (except CA)	0.9 to 1.1 oz. (2 1/2 to 3 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of ORTHENE 97 per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage. Do not apply more than 3.1 lbs./A in a single application.
	Sod Webworm	0.4 to 0.8 oz. (1 to 2 lbs./A)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations.  Repeat application may be necessary. Do not repeat at more than 1 week intervals.	

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**MOUND TREATMENT OF FIRE ANTS AND HARVESTER ANTS IN TURFGRASS**

**USE RESTRICTIONS**

- DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.
- DO NOT FEED TREATED GRASS TO LIVESTOCK.
- PHI for sod farms is 3 days.
- Do not treat mounds more than once per season.

PLANT	PEST CONTROLLED	AMOUNT ORTHENE 97	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Turfgrass Residential, Recreational, and Commercial Turf	Imported Fire Ants and Harvester Ants	<b>Mound Treatment-</b>  <b>Drench Method:</b> Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.	Apply the specified amount of ORTHENE 97 as directed.  Grass in treated areas may be injured.

**OUTDOOR AND PERIMETER SPRAY**

**USE RESTRICTIONS**

- Not for use on residential turf grass.
- Do not apply with a low pressure hand wand.

LOCATION	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER GALLON	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Outdoor and Perimeter Area.	Wasps	1.2 oz.	Treat early or late in the day, as wasps are generally less active during these times.	Apply specified amount of ORTHENE 97 per each gallon of water used. Apply as a spot treatment to the nest, nest entrance, and surrounding areas where the wasps alight.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants) Cockroaches Crickets Earwigs Pillbugs	1.2 oz.	As the insects appear.	Apply specified amount of ORTHENE 97 per each gallon of water used.  Apply to a band of soil 6 to 10 ft. adjacent to the structure and to a height of 2 to 3 ft. on the foundation where pests may be active or may find entrance. Also apply as a residual spray or with a paint brush to surfaces of buildings, window frames, shutters, entryways, screens, eaves, patios, garages, carports, around garage areas and other areas where these pests congregate.

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**ORNAMENTAL PLANTS GROWN FOR CUT FLOWER PRODUCTION**

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**USE RESTRICTIONS**

- Do not apply more than 1/2 lb./A ORTHENE 97 per 100 gals. of water.
- Do not exceed 0.75 lb./A ORTHENE 97 for cut flowers.
- Do not exceed 12 ounces of product per acre.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.5 lbs ai/A and 7 days for application rates greater than 0.5 lbs ai/A.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Chrysanthemums Daisies Gladioli Roses	Aphid Lygus Thrips	1/2 lb. (8 oz.)	As insects begin to appear. Repeat applications may be necessary.	Apply the specified amount of ORTHENE 97 in 100 gals. of water with a hydraulic sprayer as a full coverage spray. Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.

**GREENHOUSE (Commercial only) AND OUTDOOR ORNAMENTAL PLANTS,  
FLORAL CROPS, GROUND COVERS AND FOLIAGE PLANT CROPS  
(Plants Not Produced for Cut Flowers)**

**USE RESTRICTIONS**

- Not for residential greenhouse use.
- Do not apply more than 12 oz. (0.75 lb.) of product per 100 gals. of water per acre.
- Do not apply with a low pressure hand wand.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- **Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**
- This product is sold by weight and package is full when packed and is inclined to settle.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Carnations Chrysanthemums	Aphid Thrips	1/2 lb. (8 oz.)	As Aphid begin to appear.  As thrips begin to appear or at the tight flower bud stage. Repeat applications may be necessary.	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Do not apply more often than once every 28 days to Carnations and Chrysanthemums.  <b>Caution:</b> Phytotoxicity has occurred on the following Chrysanthemum varieties: Albatross, Bonnie Jean, Dixie, Garland, Gem, Iceberg, Pride, Showoff, Statesman, Tally Ho, Westward Ho and Wild Honey.  Before treating large Chrysanthemum plantings, spray only a few plants and observe two weeks for varietal phytotoxicity. Application to Chrysanthemums in flower may result in flower damage.

continued

**GREENHOUSE (Commercial only) AND OUTDOOR ORNAMENTAL PLANTS, FLORAL CROPS, GROUND COVERS AND FOLIAGE PLANT CROPS - Plants Not Produced for Cut Flowers continued**

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 97 PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Floral Crops Dahlias Daisies Easter Lily Gladioli <i>Gypsophila</i> Pachysandra Pansy Peony Sedum Statice Strawflower Yarrow Zinnia Foliage Plants Anthuriums Cacti Orchids Poinsettia	Aphid	1/2 lb. (8 oz.)	As aphid begin to appear	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer as a full coverage spray. The addition of a wetting agent may be required on difficult to wet foliage.  <b>Caution:</b> Phytotoxicity has occurred on the following foliage plants: <i>Blechnum gibbum</i> , <i>Cissus Antarctica</i> , <i>Ficus triangularis</i> , <i>Fittonia verchaffeltii</i> , <i>Maranta leuconeura kerchoveana</i> , <i>Pachystachya lutea</i> , <i>Plectranthus australis</i> , <i>Polypodium aureus</i> , <i>Polystichum</i> , <i>Pteris ensiformis</i> , <i>Tolmiea menziesii</i> . Before treating large plantings spray only a few plants and observe 2 weeks for varietal phytotoxicity. Application of ORTHENE 97 on Poinsettias after bract formation may result in phytotoxicity on certain varieties.
	Mealybug Thrip Whitefly	1/2 lb. (8 oz.)	As the insects begin to appear. A repeat application, at a 2 week interval, may be necessary for control of mealybugs and whiteflies.	
	Scales (Crawlers)	1/2 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	
	Sweetpotato Whitefly (except CA)	1/4 lb. (4 oz.)  +  10 2/3 fl. oz. (0.2 lb. ai) TAME® 2.4 EC Spray	Apply when insects first appear. If a population is well established, make one application of the tank mix and follow 5 to 7 days later with TAME alone at 16 fl. oz./100 gals. See TAME label for instructions.	For sweetpotato whitefly control, apply the specified amount of ORTHENE 97 plus TAME 2.4 EC Spray as a tank mix at a volume necessary to obtain good coverage. Follow the TAME label for specific instructions on the alternation of TAME plus ORTHENE and TAME alone and the rotation instructions to avoid potential resistance.
Roses	Aphid Leafroller Thrip	1/2 to 3/4 lb. (8 to 12 oz.)	As leaf rollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of ORTHENE 97 in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Application to Roses in flower may result in flower damage.

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### STORAGE AND DISPOSAL

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

#### PESTICIDE STORAGE

Keep pesticide in original container.

Do not put concentrate or dilute into food or drink containers.

Store in cool, dry place. Protect from excessive heat.

Do not contaminate food or foodstuffs.

Do not store or transport near feed or food.

For help with any spill, leak, fire or exposure involving this material, call day or night 1-323-264-3910

**PESTICIDE DISPOSAL:** To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

#### CONTAINER DISPOSAL

Nonrefillable container. Do not reuse or refill this container. Completely empty canister into application equipment. Do not reuse container. Dispose of empty canister in a sanitary landfill or by incineration, or Offer for recycling, if available. If allowed by State and local authorities, by burning. If burned, stay out of smoke.

### LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

**THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW MANUFACTURER OR SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

AMVAC offers this product, and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC.

*Orthene* is a registered trademark of OMS Investments, Inc.  
AMMO® □ Reg. TM of FMC Corporation for cypermethrin insecticide.  
ASANA® □ Reg. TM of E. I. duPont de Nemours & Co., Inc. for esfenvalerate insecticide.  
BAYTHROID® □ Reg. TM of Bayer Corporation for cyfluthrin synthetic pyrethroid.  
CAPTURE® □ Reg. TM of FMC Corporation for bifenthrin insecticide miticide.  
DANITOL® □ Reg. TM of Sumitomo Chemical Company Ltd. for fenpropathrin insecticide-miticide.

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DEADHATCH® Reg. TM of Valent U.S.A. Corporation  
KARATE® Reg. TM of Signet for lambda-cyhalothrin insecticide.  
LORSBAN® □ Reg. TM of Dow AgroSciences LLC for chlorpyrifos insecticide.  
ORTHENE® □ Reg. TM of OMS Investments, Inc. for acephate insecticide.  
SCOUT® and SCOUT X-TRA® □ Reg. TM of Hoechst-Roussel Agri-Vet. Co. for tralomethrin pyrethroid insecticide.  
TAME® □ Reg. TM of Valent U.S.A. Corporation

Reg. TM  
TM of

AMVAC Chemical Corporation  
4100 E. Washington Boulevard  
Los Angeles, CA 90023 U.S.A.  
1-888-462-6822

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[Sub Label B]

# ORTHENE<sup>®</sup> 97

(Soluble Insecticide)

Active Ingredient	By Weight
* Acephate.....	97.4 %
Inert Ingredients.....	2.6 %
Total.....	100.0 %
*O,S-Dimethyl acetylphosphoramidothioate	

U.S. Patent. No. 6,013,272

## KEEP OUT OF REACH OF CHILDREN CAUTION

<b>FIRST AID</b>	
<b>Acephate is an organophosphate, cholinesterase inhibitor.</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>EMERGENCY INFORMATION</b>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p> <p>FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:</p> <p><b>For Medical Emergencies phone:</b>.....1-888-681-4261</p> <p>For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC.....1-800-424-9300</p> <p>For Product Use Information phone : AMVAC.....1-888-462-6822</p>	
<b>NOTE TO PHYSICIAN</b>	
<p>This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal, 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.</p>	

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA Reg. No. 5481-8978  
EPA Est. No.

Net Contents: \_\_\_ Pounds





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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS & DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product butyl rubber, nitrile rubber, or neoprene . If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

**Mixers, Loaders, Applicators and Other Handlers must wear:** Long sleeved shirt and long pants, chemical-resistant gloves and shoes plus socks.

**In addition, all Mixers and Loaders and all Applicators using low pressure hand wand application equipment must wear:** A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approved number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter. **See Engineering Controls for additional requirements.**

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

The use of human flaggers is prohibited.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### USER SAFETY RECOMMENDATION

##### 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.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Cover or soil-incorporate spills.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permitted and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

This product and its degradate are highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

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#### DIRECTIONS FOR USE

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It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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.

For seed treatment in commercial facilities only.

**COMMERCIALY TREATED COTTONSEED**

**USE RESTRICTIONS**

- When using formulations that do not contain dye, compliance with 21 CFR Chapter 1, Section 2.5 requires that all seed treated with pesticide must be colored to distinguish from, and prevent subsequent inadvertent use as, food for human, or feed for animals.
- Treated seed must not be used for, or mixed with, food or animal feed, or processed for oil. Seed treated with ORTHENE 97 may be considered adulterated under state and federal laws if sold or shipped as food or feedstuffs. Seed commercially treated with ORTHENE 97 must be labeled as follows: "TREATED SEED DO NOT USE FOR FOOD, FEED OR OIL."
- Observe all precautions and limitations on labeling of all products used in mixtures.
- Do not apply more than 4.0 lbs. ai/A per crop cycle. This includes all uses of acephate in commercial seed treatment, in-furrow spray and foliar applications.
- Excess treated seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticide remain in ethanol by-products that are used in agronomic practice.
- Store away from feeds and other foodstuffs.
- Wear long-sleeved shirt, long pants, and chemical-resistant gloves when handling treated seed.
- Dispose of seed packaging in accordance with local requirements.
- Exposed treated seed may be hazardous to birds and wildlife. Dispose of all excess treated seed and seed packaging by burial away from bodies of water. Cover or incorporate spilled treated seeds.
- Treated seeds must be planted into the soil at the depth of 1 inch or greater.

**TABLE 4. COMMERCIALY TREATED COTTONSEED –**

PESTS CONTROLLED	AMOUNT PER 100 LBS. COTTONSEED	EFFICACY	REMARKS
Cotton Aphid Thrips (including Western Flower Thrips)	6.4 oz. (0.4 lb.)	Gives effective reduction of Thrips and cotton Aphid for up to 3 weeks after planting.	ORTHENE 97 contains a water-soluble systemic insecticide which helps to reduce injury to cotton seedlings by several insects. ORTHENE 97 can be mixed in the slurry tank with most of the fungicide seed treatments in common use. ORTHENE 97 can also be applied as a separate treatment using enough water to give adequate coverage of the seed. ORTHENE 97 dissolves quickly in water with a minimum of agitation.
Black (Greasy) Cutworm	6.4 oz. (0.4 lb.)	Gives effective reduction of Black (Greasy) Cutworm from planting through the 3 <sup>rd</sup> to 4 <sup>th</sup> leaf stage of development. When planting into fields where large Cutworm are present (5 <sup>th</sup> instar and larger) economic damage may occur.	

**Seed Container Label Requirements**

Seed commercially treated with acephate insecticide must be labeled in compliance with all the requirements of the Federal Seed Act. Federal law requires that bags containing treated seeds shall be labeled with the following statements:

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- This seed has been treated with acephate insecticide.
- Do not use for food, feed or oil purposes.
- User is responsible for ensuring that the seed container label is in compliance with all of the requirements of the Federal Seed Act.

In addition, the EPA requires all bags containing treated seed must be labeled or tagged with the following information:

- This seed has been treated with Orthene 97, which contains x mg\* active ingredient (ai) per seed.  
\*to be filled in
- Do not apply more than 4.0 lbs. a.i./A per crop cycle. This includes all uses of acephate such as commercial seed treatments, in-furrow spray, and foliar applications.
- Excess treated seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticide remain in ethanol by-products that are used in agronomic practice.
- Store away from feeds and other foodstuffs.
- Wear long-sleeved shirt, long pants, and chemical-resistant gloves when handling treated seed.
- Dispose of seed packaging in accordance with local requirements.
- Exposed treated seed may be hazardous to birds and wildlife. Dispose of all excess treated seed and seed packaging by burial away from bodies of water. Cover or incorporate spilled treated seeds.
- Treated seeds must be planted into the soil at the depth of 1 inch or greater.

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE**

Keep pesticide in original container.

Do not put concentrate or dilute into food or drink containers.

Store in cool, dry place. Protect from excessive heat.

Do not contaminate food or foodstuffs.

Do not store or transport near feed or food.

For help with any spill, leak, fire or exposure involving this material, call day or night **1-323-264-3910**

**PESTICIDE DISPOSAL:** To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**CONTAINER DISPOSAL**

Nonrefillable container. Do not reuse or refill this container. Completely empty canister into application equipment. Do not reuse container. Dispose of empty canister in a sanitary landfill or by incineration, or Offer for recycling, if available. If allowed by State and local authorities, by burning. If burned, stay out of smoke.

**LIMITED WARRANTY AND DISCLAIMER**

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

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- ASANA® □ Reg. TM of E. I. duPont de Nemours & Co., Inc. for esfenvalerate insecticide.
- BAYTHROID® □ Reg. TM of Bayer Corporation for cyfluthrin synthetic pyrethroid.
- CAPTURE® □ Reg. TM of FMC Corporation for bifenthrin insecticide miticide.
- DANITOL® □ Reg. TM of Sumitomo Chemical Company Ltd. for fenpropathrin insecticide-miticide.
- DEADHATCH® Reg. TM of Valent U.S.A. Corporation
- KARATE® Reg. TM of Signet for lambda-cyhalothrin insecticide.
- LORSBAN® □ Reg. TM of Dow AgroSciences LLC for chlorpyrifos insecticide.
- ORTHENE® □ Reg. TM of OMS Investments, Inc. for acephate insecticide.
- SCOUT® and SCOUT X-TRA® □ Reg. TM of Hoechst-Roussel Agri-Vet. Co. for tralomethrin pyrethroid insecticide.
- TAME® □ Reg. TM of Valent U.S.A. Corporation

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