



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

JUN 29 1999

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Joseph L. Powell
Project Manager
Valent U.S.A. Corporation
1333 N California Blvd. Suite 600
Walnut Creek, CA 94596-8025

Dear Mr. Powell:

Subject: Additional Uses
Orthene 97 Pellets
EPA Reg. No. 59639-91
Your Labeling Submitted March 30, 1999
Corrected Data Matrix Submitted May 26, 1999

The labeling amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, As Amended (FIFRA), is acceptable, provided that you:

Submit one copy of your final printed label incorporating the following corrections before you release the product for shipment.

1. On page 5, modify the statement prohibiting application of the product through any type of irrigation system to reflect the fact that the label bears directions for use as a sprinkler irrigation application to cranberries.

2. On page 15, in the directions for use on non-crop areas-wasteland, delete the use restrictions cited below which imply use on animal grazing areas such as pasture and rangeland. Retain the general restriction which appears in the directions for use in the non-crop areas; i.e. Do not graze or feed vegetation cut from treated areas.

- a. Do not apply when lactating dairy cattle are present
- b. Do not graze or feed grass or grass hay to dairy animals.
- c. Remove meat animals from treated areas at least one day before slaughter if they were present at application or grazed treated areas within 21 days of application.

d. 21 days to harvest for hay

3. The directions for use on the listed food/feed crops that include directions to repeat as necessary must be clarified in light of the added required maximum seasonal application rates. This may be done by limiting the number of repeat applications for the specific crop to correspond with the maximum seasonal application rate for that crop.

For example, the maximum seasonal application rate for celery is 2 1/8 pounds of product per acre per season. The directions for use specify a single application of up to 1.0 pound of product per acre and instruct the user to repeat as necessary at 3 to 10 day spray intervals. At the 1.0 pound application rate, however, only one repeat application may be made.

4. Reinstate the following use restriction to the commercially treated cottonseed use directions:

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

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product bearing the amended label constitutes acceptance of this condition.

A stamped copy of the label is enclosed for your records.

Sincerely,



Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)



ACCEPTED
with COMMENTS
in EPA Letter Book

JUN 29 1991

Under the Federal Insecticide,
Fungicide, and Fumigant Act
as amended, the pesticide
registered under EPA Reg. No.
59639-91

ORTHENE® 97 Pellets

(SOLUBLE INSECTICIDE)

Active Ingredient	By Wt.
* Acephate (O,S-Dimethyl acetylphosphoramidothioate)	97%
Inert Ingredient	3%
* ORTHENE®, Acephate	
Mfg. in accordance with	
U.S. Pat. No. 5,464,623; Pat. Pending	

KEEP OUT OF REACH OF CHILDREN
CAUTION
SEE NEXT PAGE FOR ADDITIONAL
PRECAUTIONARY STATEMENTS

NET WEIGHT 1 POUND

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Causes eye irritation. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Wash hands thoroughly after handling. Do not allow children or pets to come into contact with treated areas until sprays have dried.

STATEMENT OF PRACTICAL TREATMENT: Acephate is an organophosphate, cholinesterase inhibitor.

If swallowed: Drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of the throat with finger. If possible contact a physician, Poison Control Center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center.

If in eyes: Wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor.

If on skin: Wash skin with plenty of soap and water.

If inhaled: Remove person from exposure area.

NOTE TO PHYSICIAN: Emergency information - call 1-800-892-0099. Acephate is cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine but should not be used alone.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

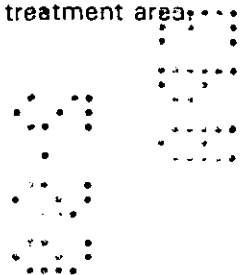
Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately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

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

ENVIRONMENTAL HAZARDS

This pesticide is toxic to 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. Cover or soil-incorporate spills.

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.



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, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

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 farm, forests, or greenhouses. For other uses, including golf courses and other non-agricultural areas, do not enter treated areas without protective clothing 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.

**DISCLAIMER, CONDITIONS OF SALE,
LIMITED WARRANTY
AND LIMITATION OF LIABILITY**

IMPORTANT: Read the entire Label including this Disclaimer, Limited Warranty and Limitation of Liability before using this product. If the terms are not acceptable, return the unopened product within 15 days of purchase.

RISKS OF USING THIS PRODUCT

It is impossible to eliminate all risks associated with the use of this product. Such risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, moisture conditions, irrigation practices, presence of other materials, cultural practices or the manner of use or application, all of which are factors beyond the control of Valent. **All such risks shall be assumed by the Buyer.** Valent shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on the label. User assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

LIMITED WARRANTY

Valent warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product described above.

DISCLAIMER OF ALL OTHER WARRANTIES

VALENT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

LIMITATION OF LIABILITY

In no event shall Valent or Seller be liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THIS PRODUCT.**

NO AMENDMENTS

Valent and Seller offer this product, and Buyer and User accept it, subject to the foregoing Disclaimer, Conditions of Sale, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

PROMPT NOTICE OF CLAIM

Valent must have prompt notice as soon as Buyer or User has reason to believe they may have a claim (not to exceed twenty-one days from date of application) so that an immediate inspection of the affected property and growing crops can be made. Unless Buyer and Users shall promptly notify Valent of any claims, they shall be barred from obtaining any remedy.

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.

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

GENERAL INFORMATION

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DIRECTIONS

Do not apply this product through any type of irrigation system.

General 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 Pellets 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 Pellets product should be given. With tobacco transplant water applications the Orthene 97 Pellets 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.

BEANS AND LIMA BEANS - Dry and Succulent Forms

TABLE 1. Beans and Lima Beans - Dry and Succulent Forms - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 20 to 100 gals./A of spray By Air: Minimum of 2 gals./A of spray	Fleahoppers Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear. Repeat at 7 to 10 day spray intervals as necessary to maintain control.	14 (snapbeans - succulent or dry beans)
	Aphids (excluding Black Bean Aphid) Bean Leaf Beetle Bean Leafroller Cabbage Looper Cutworms 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 for severe insect infestations.	0 (lima beans - succulent form)
	Armyworms (excluding Beet Armyworm) Corn Earworm European Corn Borer	3/4 to 1.0 lb (12 to 16 Oz.)		
USE PRECAUTIONS: Do not feed treated vines to livestock. Do not apply more than 2 1/8 lbs./A (2 lbs. ai) per season				

CELERY

TABLE 2. Celery - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR 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 lbs. (8 to 16 oz.)	Apply when eggs or insects first appear. Repeat at 3 to 10 day spray intervals as necessary to maintain control.	21
	Cabbage Looper Fall Armyworms	1.0 lbs (16 oz.)		
USE PRECAUTIONS: 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) per season.				

COLE CROPS

BRUSSELS SPROUTS & CAULIFLOWER

TABLE 3. Cole Crops - Brussels Sprouts & Cauliflower - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR 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 lbs. (8 to 16 Oz.)	Use the high rate when heavy infestations of aphids are present. Apply when eggs or insects first appear. Repeat application as necessary to maintain control.	14
	Cabbage Looper Diamondback Moth Larvae Imported Cabbage Worm	1.0 lbs. (16 oz.)	Diamondback Moth Larvae-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.	
USE PRECAUTIONS: Do not apply more than 2 1/8 lbs./A (2 lbs. ai) per season to Brussels Sprouts and Cauliflower. Do not feed trimmings to livestock or allow animals to graze in treated areas.				

COMMERCIALY TREATED COTTONSEED

COMMERCIALY TREATED COTTONSEED

TABLE 4. COMMERCIALY TREATED COTTONSEED - Recommendations for Use

PESTS CONTROLLED	AMOUNT PER 100 LBS COTTONSEED	EFFICACY	REMARKS
Cotton Aphids Thrips	6.4 oz. (4/10 lb.)	Gives effective reduction of thrips and cotton aphids for up to three weeks after planting	ORTHENE 97 Pellets contain a water-soluble systemic insecticide which helps to reduce injury to cotton seedlings by several insects. ORTHENE 97 Pellets can be mixed in the slurry tank with most of the fungicide seed treatments in common use. ORTHENE 97 Pellets can also be applied as a separate treatment using enough water to give adequate coverage of the seed. ORTHENE 97 Pellets dissolve quickly in water with a minimum of agitation.
Black (Greasy) Cutworm	6.4 oz. (4/10 lb.)	Gives effective reduction of Black (Greasy) Cutworm from planting through the 3 rd to 4 th leaf stage of development. When planting into fields where large cutworms are present (5 th instar and larger) economic damage may occur	
<p>USE PRECAUTIONS: When using formulations that do not contain dye, compliance with 21 CFR Chapter 1, Section 2.5 requires that all seed treated with a pesticide must be colored to distinguish from, and prevent subsequent inadvertant use as, food for man or feed for animals.</p> <p>Treated seed must not be used for, or mixed with, food or animal feed, or processed for oil. Seed treated with ORTHENE 97 Pellets may be considered adulterated under state and federal laws if sold or shipped as food or feedstuffs. Seed commercially treated with ORTHENE 97 Pellets must be labelled as follows: "TREATED SEED DO NOT USE FOR FOOD, FEED OR OIL."</p> <p>Observe all precautions and limitations on labelling of all products used in mixtures.</p>			

COTTON

GENERAL USE PRECAUTIONS

Do not use treated seed for food or feed purposes or process for oil.

Do not feed gin trash to livestock.

Do not allow animals to graze on treated areas.

Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD 15 Granular and foliar applications.

TABLE 5. Cotton - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
IN FURROW By Ground: 3 to 5 gals./A of spray.	Aphids* Black (Greasy) Cutworm (Except CA) Thrips * Excluding Cotton Aphids in AZ & CA	1/2 to 1.0 lbs. (8 to 16 oz) NOTE: For the Blacklands of Texas use 1.0 lbs./A ORTHENE 97 PELLETS.	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 PELLETS can be mixed with fungicides that are sprayed in-furrow for disease control.	
	FOLIAR By Ground: 10 to 25 gals./A of spray. By Air: 3 to 10 gals/A of spray (minimum of 5 gals./A in AZ & CA)	Thrips	2.5 oz. to 3.0 oz.	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.
	Plantbugs (Lygus)	1/4 to 1.0 lbs. (4 to 16 oz.) 3/4 to 1.0 lbs. (AZ & CA)	Apply when eggs or insects first appear. Use highest rate for Lygus adults that have migrated into cotton. Repeat application as necessary to maintain control.	21
	Fleahopper	1/4 lb. (4 oz.)	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.	21
	Cotton Aphid (excluding AZ & CA)	1/2 to 1.0 lbs. (8 to 16 oz.)	This insect may develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current control recommendations. Repeat application as necessary to maintain control.	21

TABLE 5. Cotton - Recommendations for Use (Continued)

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground: 10 to 25 gals./A of spray.</p> <p>By Air: 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA)</p>	<p>Whitefly (excluding Sweetpotato Whitefly/Silverleaf Whitefly)</p>	<p>1/2 to 1.0 lbs. (8 to 16 oz.)</p>	<p>Repeat application as necessary to maintain control.</p>	<p>21</p>
	<p>Armyworms (excluding Beet Armyworm) Cabbage Looper</p>	<p>1.0 lbs. (16 oz.)</p>	<p>Apply when eggs appear and repeat at 3 to 7 day spray intervals.</p>	<p>21</p>
	<p>Bollworm Tobacco Budworm Adults Larvae Eggs (DEADHATCH®)</p>	<p>1/2 to 1.0 lbs. (8 to 16 oz.) (East of Rockies)</p> <p>1.0 lbs. (16 oz.) (AZ & CA)</p>	<p>Early Season: Use 1/2 lb. /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 appear and repeat at 3 to 7 day spray intervals.</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>	<p>21</p>
	<p>Stinkbugs</p>	<p>3/4 lb. (12 oz.)</p>	<p>Apply when eggs appear and repeat at 3 to 7 day spray intervals.</p>	<p>21</p>
	<p>Pink Bollworm (AZ & CA)</p>	<p>1.0 lbs. (16 oz.)</p>	<p>Apply when insects appear and repeat at 5 to 7 day spray intervals.</p>	<p>21</p>
	<p>Cutworms</p>	<p>3/4 lb. (12 oz.)</p>	<p>Ground application is recommended.</p> <p>Aerial applications are less effective, but may be used.</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>Apply when insects first appear or damage is first noted and repeat application as necessary to maintain control.</p>	<p>21</p>

COTTON TANK MIXES

GENERAL USE PRECAUTIONS:

Do not feed gin trash or treated forage to livestock.

Do not allow livestock to graze on treated areas.

Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD 15 Granular and foliar applications.

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 - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 PELLETS AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 PELLETS + TANK MIX PARTNER PER ACRE	REMARKS
FOLIAR By Ground: 10 to 25 gals./A spray. By Air: 3 to 10 gals./A of spray (minimum 5 gals./A in CA).	Sweetpotato Whitefly (Silverleaf Whitefly)	ORTHENE 97 + DANITOL® 2.4 EC	1/2 lb. (8 oz.) + 8 to 16 fl. oz.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for Danitol 2.4 EC Spray. Use a minimum application rate of 10 2/3 fl. oz./acre DANITOL (0.2 lb. ai./acre) in CA and AZ.
	Armyworms (excluding Beet Armyworm) Bollworm Cabbage Looper Cotton Aphid Cutworms Fleahopper Grasshoppers Pink Bollworm Plantbugs (Lygus, Mirids) Salt Marsh Caterpillar Thrips Tobacco Budworm Whitefly (Excluding Sweetpotato/Silverleaf Whitefly)	ORTHENE 97 + LORSBAN® 4E	1/4 to 1.0 lbs. (4 to 16 oz.) + 1 to 2 pts.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for LORSBAN® 4 E. Cutworms: Use 3/4 lb./A of ORTHENE 97. By Ground: Ground application is recommended. Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant. By Air: Aerial applications are less effective, but may be used. Apply when insects first appear or when damage is first noted and repeat application as necessary to maintain control.

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 organo-phosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

COTTON TANK MIXES WITH PYRETHROIDS

GENERAL USE PRECAUTIONS

Do not feed gin trash or treated forage to livestock.

Do not allow livestock to graze on treated areas.

Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD 15 Granular and foliar applications.

Synthetic Pyrethroids should be used within the guidelines of state and/or regional resistance management programs and recommendations.

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 7. Cotton Tank Mixes with Pyrethroids - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 PELLETS AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 PELLETS + TANK MIX PARTNER PER ACRE	REMARKS
FOLIAR By Ground: 10 to 25 gals./A spray. By Air: 3 to 5 gals./A spray (minimum 5 gals./A in CA). See aerial remarks for Cutworms.	Aphids Bollworm Cabbage Looper Cotton Leaf Perforator Cutworms Fall Armyworm Fleahoppers Pink Bollworm (AZ & CA) Plantbugs Stinkbugs Sweetpotato/Silverleaf Whitefly Thrips Tobacco Budworm Whitefly	ORTHENE 97 + one of the following:	1/2 to 1.0 lbs./A (8 to 16 oz.) + one of the following:	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.
		AMBUSH® 2 EC	Refer to the AMBUSH 2 EC approved label for use instructions.	Stinkbugs: Use 3/4 lb./A of ORTHENE 97.
		AMMO® 2.5 EC*	Refer to the AMMO 2.5 EC approved label for use instructions.	Cutworms: Use 3/4 lb./A of ORTHENE 97.
		ASANA® XL*	Refer to the ASANA XL approved label for use instructions.	By Ground: Ground application is recommended.
		BAYTHROID® 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.	Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.
		CAPTURE® 2 EC	Refer to the CAPTURE 2 EC approved label for use instructions.	By Air: 3 to 10 gals./A spray (minimum 5 gals./A in CA)
		KARATE® 1 E (Except CA)	Refer to the KARATE 1 E approved label for use instructions.	Aerial applications are less effective, but may be used.
		POUNCE® 3.2 EC*	Refer to the POUNCE 3.2 EC approved label for use instructions.	Apply when eggs or insects first appear or damage is first noted.
		SCOUT® X-TRA (Except CA)	Refer to the SCOUT X-TRA approved label for use instructions.	Repeat application as necessary to maintain control.

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 organo-phosphates, 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

TABLE 8. Cranberry - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground or Sprinkler: Sufficient water to give thorough coverage.</p> <p>By Air: Minimum of 2 gals./A of spray.</p> <p>USE PRECAUTION: Note: Limit to one application per growing season. Do not apply more than 1.0 lb. (1.0 lbs. ai) per season. Do not apply from start of bloom until all berries set.</p>	<p>Cranberry Blossom Worm Gypsy Moth False Armyworm Fireworms Spanworms Sparganothis</p>	<p>1.0 lbs. (16 oz.)</p>	<p>SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:</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>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.</p> <p>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.</p> <p>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.</p> <p>The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.</p> <p>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.</p> <p>The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.</p> <p>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.</p> <p>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.</p> <p>Do not apply when wind speed favors drift beyond the area intended for treatment.</p> <p>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.</p> <p>Center Pivot Systems: Inject the specified dosage per acre continuously for one complete revolution of the system. See NOTE.</p> <p>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.</p> <p>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.</p>				

HEAD LETTUCE - Crisphead Type Only

TABLE 9. Head Lettuce (Crisphead Type Only) - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 10 to 60 gals./A of spray broadcast. By Air: Minimum of 5 gals./A of spray	Aster Leathopper Green Peach Aphid	1/2 to 1.0 lbs. (8 to 16 oz.)	Repeat application as necessary to maintain control.	21 Spring, Summer and early Fall crops in all areas, Winter crops in Florida and Texas, late Fall crops in Arizona and Winter crops in Arizona and California.
	Armyworms (excluding Beet Armyworm) Cabbage Looper	1.0 lbs. (16 oz.)		

USE PRECAUTIONS:

Do not apply more than 2 1/8 lbs./A (2 lbs. ai) per season.
 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.

MINT

PEPPERMINT AND SPEARMINT

TABLE 10. Mint - Peppermint and Spearmint - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 20 to 100 gals./A of spray By Air: 5 to 10 gals./A of spray	Alfalfa Looper Aphids Cutworms	1.0 lbs. (16 oz.)	Apply when eggs or insects first appear. Make one repeat application, if necessary, to maintain control.	14
FOLIAR By Ground: 40 to 100 gals./A of spray	Strawberry Root Weevil Adult Black Vine Weevil Adult	1.0 lbs. (16 oz.)	Strawberry Root and Black Vine Weevil: 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. Apply after adult emergence is complete but prior to egg laying. Apply at dusk or during the night on a warm still evening. Two applications 10-14 days apart may be necessary to reduce heavy infestations.	14

USE PRECAUTION:

Do not apply more than 2 1/8 lbs./A (2 lbs. ai) per season.
 Do not graze treated areas.

NON-BEARING CITRUS - RECOMMENDATIONS FOR USE IN AGRICULTURAL SETTINGS
(Newly Planted Groves)

GENERAL USE PRECAUTIONS
Do not graze treated areas.
DO NOT HARVEST citrus for one year after treatment.

TABLE 11. Non-Bearing Citrus - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS
FOLIAR By Ground: 100 to 200 gals./A of spray.	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plantbugs Thrips Whiteflies (except Sweetpotato/Silverleaf)	1/2 lb. (8 oz.)	Repeat application as necessary to maintain control.
	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. Repeat at 7 to 10 day spray intervals.
	Ants Including Imported Fire Ants and Harvester Ants	3/4 lb. (12 oz.)	Repeat application as necessary to maintain control.
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.			
SOIL MOUND TREATMENT DRENCH METHOD	Ants Including Imported Fire Ants and Harvester Ants	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 four (4) foot diameter circle around the mound. Repeat application as necessary to maintain control.

NON-CROP AREAS

FIELD BORDERS, FENCEROWS, ROADSIDES, DITCHBANKS, BORROW PITS

TABLE 12. Non-Crop Areas - Field borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS
FOLIAR By Ground: 10 to 20 gals./A of spray By Air: 1 to 5 gals./A of spray (minimum of 5 gals./A in CA)	Grasshoppers	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.
USE PRECAUTION: Do not graze or feed vegetation cut from treated areas.			

WASTELAND

TABLE 13. Non-Crop Areas - Wasteland - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground: 10 to 20 gals./A of spray</p> <p>By Air: ½ gal./A of spray (minimum of 5 gals./A in CA)</p>	<p>Black Grass Bugs Grasshoppers Mormon Crickets</p>	<p>1.5 oz. to 2 oz.</p>	<p>Use the higher volumes when spraying dense foliage.</p> <p>An approved drift retardant may be added to aid in controlling drift and reducing evaporation of aerial sprays.</p>	<p>21 for hay</p>

USE PRECAUTION:

Do not make more than one application per season.
 Do not graze or feed vegetation cut from treated areas.
 Do not apply when lactating dairy cattle are present
 Do not graze or feed grass or grass hay to dairy animals.
 Remove meat animals from treated areas at least one day before slaughter if they were present at application or grazed treated areas within 21 days after application.

PEANUTS

TABLE 14. Peanuts - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground: 10 to 50 gals./A of spray</p> <p>By Air: 5 to 10 gals./A of spray</p>	Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	<p>Apply when eggs or insects first appear.</p> <p>Repeat application as necessary to maintain control.</p> <p>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.</p>	14 (of digging)
	Thrips	3/8 to 3/4 lb. (6 to 12 oz.)	<p>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 five 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.</p>	
	<p>Corn Earworm Fall Armyworm Leafhoppers Loopers Velvetbean Caterpillar</p>	3/4 to 1.0 lbs. (12 to 16 oz.)	<p>Combinations should be kept agitated and should be applied immediately. Do not allow combinations to set for prolonged periods in the chemical supply tank or irrigation lines.</p>	
<p>USE PRECAUTIONS: 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) per season.</p>				

PEPPERS

BELL

TABLE 15. Peppers - Bell - Recommendations for Use

Do not apply more than 2 1/8 lbs./A (2 lbs. ai) per season.

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR 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)	Grasshoppers	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 lbs. (8 to 16 oz.)	Repeat as necessary to maintain insect-pest populations below economically damaging numbers.	
	European Corn Borer	3/4 to 1.0 lbs. (12 to 16 oz.)		

NON-BELL

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

TABLE 16. Peppers - Non-Bell - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 40 to 150 gals./A of spray	Aphids	1/2 lb. (8 oz.)	Repeat at 7 to 10 day spray intervals as necessary.	7

USE PRECAUTION:
Do not apply more than 1.0 lbs./A (1.0 lbs. ai) per season.

TOBACCO

TOBACCO TRANSPLANT WATER APPLICATION (EXCEPT CA)

TABLE 17. Tobacco Transplant Water Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworms Flea Beetle Green Peach Aphid Tobacco Aphid Tobacco Thrips	¼ lb. (12 oz.)	<p>Provides control of early season flea beetles, green peach aphids, tobacco aphids, and cutworms for approximately 3 to 4 weeks after transplanting. For later season control of these insects, apply a foliar spray of ORTHENE 97 Pellets.</p> <p>Apply in a minimum of 100 gals. of transplant water per acre. ORTHENE 97 Pellets should be pre-mixed in water to form a slurry solution prior to adding to the transplant water tank.</p> <p>Do not apply more than ¼ lb. ORTHENE 97 Pellets per acre as a transplant water application as some phytotoxicity may occur.</p> <p>Do not apply more than 4½ lbs./A (4 lbs. ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.</p>

TOBACCO FOLIAR APPLICATION (EXCEPT CA)

TABLE 18. Tobacco Foliar Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco (Flue-Cured, Air Cured, Dark Fire Cured)	Grasshoppers	¼ to ½ 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
	Green Peach Aphid Flea Beetle Hornworm Tobacco Thrips	½ lb. (8 oz.)	Apply on a 7 day schedule or as needed.	
	Tobacco Aphid Vegetable Weevils Stinkbugs	½ to ¾ lb. (8 to 12 oz.)	Do not apply more than 4½ lbs./A (4 lbs. ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.	
	Budworm Cabbage Looper Cutworm	¾ lb. (12 oz.)		

TOBACCO PLANT BED APPLICATION (EXCEPT CA)

TABLE 19. Tobacco Plant Bed Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco Bed Treatment	Flea Beetle Green Peach Aphid Tobacco Aphid Cutworm	$\frac{3}{4}$ lb. (12 oz.)	Apply to foliage at the equivalent of $\frac{3}{4}$ tablespoon in 1 gal. of water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage. Do not apply more than 4 $\frac{1}{2}$ lbs./A (4 lbs. ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.

TOBACCO GREENHOUSE APPLICATION (EXCEPT CA)

TABLE 20. Tobacco Greenhouse Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	$\frac{3}{4}$ lb. (12 oz.)	Apply to foliage at the equivalent of $\frac{3}{4}$ tablespoon in 3 gals. water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage. Note: Floatbed water should be disposed of in the transplanted field in either transplant water or foliar spray. Do not apply more than 4 $\frac{1}{2}$ lbs./A (4 lbs. ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.

TOBACCO SOIL APPLICATION (EXCEPT CA)

TABLE 21. Tobacco Soil Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco	Ants, Including Imported Fire Ants and Harvester Ants	Mound Treatment-Drench Method: Mix $\frac{3}{4}$ 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. Treat maximum of 13 mounds per acre. Do not treat more than once per season. Do not apply more than 4 $\frac{1}{2}$ lbs./A (4 lbs. ai) per season. This includes the use of Orthene in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.	3

SMALL VOLUME SPRAY EQUIPMENT

Preparation of ORTHENE Spray Mix Using a Small Fluid Ounce Measuring Cup		
Label Recommendation ORTHENE 97 Pellets in 100 Gallons of Water	Equivalent ORTHENE 97 Pellets in 25 Gallons of Water	Equivalent ORTHENE 97 Pellets in 1 Gallon of Water (tsp./Gal)
¼ lb.	1 oz.	½ tsp.
½ lb.	2 oz.	¾ tsp.
¾ lb.	3 oz.	1 tsp.
1 lb.	4 oz.	1 ½ tsp.

**NON-BEARING CITRUS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.**

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	TIME OF APPLICATION	RECOMMENDED APPLICATION
Non-bearing Citrus (including citrus nursery seedlings)	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plant Bugs (Lygus) Thrips Whiteflies	½ lb. (8 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 100 to 200 gallons 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	¼ to ¾ 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. DO NOT HARVEST citrus for one year after treatment.
Non-bearing Citrus (including citrus nursery seedlings)	Ants, including Imported Fire Ants and Harvester Ants	Foliar Spray ¾ lb. (12 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 100 to 200 gallons 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.
		Mound Treatment - Drench Method: Mix ¾ 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.		Do not allow livestock to graze treated areas. DO NOT HARVEST citrus for one year after treatment.

**NURSERY STOCK
NON-BEARING DECIDUOUS FRUIT TREES, NUT TREES AND VINES
IN NURSERY FIELDS OR NON-BEARING ORCHARDS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.**

PLANTS	INSECTS	AMOUNT OF ORTHENE 97 PELLETS PER ACRE	TIME OF APPLICATION	RECOMMENDED APPLICATION
Nursery Stock (Non-bearing Deciduous Fruit Trees, Nut Trees, Vines) Almond Apricot Apple Cherry Grape Kiwi Pear Pistachio Plum Prune Walnut	Aphids Plant Bugs (Lygus) Thrips	½ to 1 lb. (8 to 16 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 50 to 200 gallons of water per acre by ground and not less than 5 gallons of water per acre by air.

USE PRECAUTIONS: 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 after application.

SPECIALTY USES - NON CROP AREAS

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas (field borders, fencerows, roadsides, ditchbanks and borrow pits)	Grasshoppers	¼ lb. (4 oz.)	For early to mid-season application to grasshoppers 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. Do not graze or feed vegetation cut from treated areas.
Non-Crop Areas	Ants, including Imported Fire Ants and Harvester Ants	Mound Treatment - Drench Method: Mix ¾ 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. Grass in treated area may be injured. Do not treat mound more than once per season.

SPECIALTY USES - CONTAINER GROWN NURSERY STOCK

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Container Grown Nursery Stock (Arborvitae, Azalea, Camellia, Rhododendron, Roses, Viburnum, Yew)	Black Vine Weevil Strawberry Root Weevil	¾ 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 Pellets per 100 gals. of solution so as to thoroughly drench the root system.
	Ants, including Imported Fire Ants and Harvester Ants	¾ lb. (12 oz.)	Apply as needed to control the pest.	

TREES AND SHRUBS

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Trees and Shrubs (Except Flowering Crabapple, see below)	Aphids Bagworms Birch Leafminer Tent Caterpillars* Lace Bugs Leafrollers	¼ lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer. The addition of a suitable sticker improves control of Gypsy Moth larvae. *Mist blower application. Adjust rates to 1 lb. per 100 gals. water for Gypsy Moth control and ¾ lb. per 100 gals. water for Tent Caterpillar control.
	Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae* Webworms	½ lb. (8 oz.)	As the insects begin to appear.	Do not apply to Huckleberry, Balm of Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum.
	Scales (Crawlers)	½ 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.	Nursery crops. Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.
	Ponderosa Pine Needle Miner	½ lb. (8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray .
	Grasshoppers	½ lb. (8 oz.)	As the grasshoppers begin to appear.	
	California Oakworm Cankerworms (Spring and Fall)	¼ to ½ 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 Pellets in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	¾ 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	¾ lb. (12 oz.)	Apply when first feeding damage occurs. Repeat applications, at four week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bugs Budworms Leafhoppers Sawflies	¾ lb. (12 oz.)	As the insects begin to appear.	
	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetles begin to appear. Repeat applications, at 2 week intervals, may be necessary.	

TREES AND SHRUBS (Continued)

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Trees and Shrubs (Except Flowering Crabapple, see below)	Elm Leaf Beetle (larvae)	1 lb. (16 oz.)	As the larvae begin to appear. ORTHENE will not prevent Elm Leaf Beetle eggs from hatching.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
Douglas Fir (Christmas Trees)	Douglas Fir Needle Midge	½ lb. (8 oz.) (½ lb. per acre)	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 Pellets in not less than 2 gals. of spray per acre by air or in 100 gals. of spray per acre by ground.
Flowering Crabapples	Aphids Leafrollers Tent Caterpillars	¼ lb. (4 oz.)	As the insects begin to appear.	<p>Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer.</p> <p>Do not apply more often than 3 times in a growing season at a 4 week interval.</p> <p>Caution: Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.</p>
Crape Myrtle	Aphids	2 to 3 Level Tbs. (0.6 to 0.9 oz.) per 1 Tbs. of water.	As aphids begin to appear.	<p>Make a paint-on slurry by mixing the specified amount of ORTHENE 97 Pellets with 1 tablespoon 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.</p>

**COMMERCIAL TURFGRASS, LAWNS, AND OTHER RECREATIONAL TURFGRASS AREAS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.**

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass (Residential & Commercial)	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 0.9 oz. (1 to 2½ lbs. per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Cutworm	0.9 to 1.8 oz. (2½ to 5 lbs. per acre)		
	Chinch Bugs	0.9 to 1.8 oz. (2½ to 5 lbs. per acre)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.
	Fleas	0.9 to 1.8 oz. (2½ to 5 lbs. per acre)	Apply as needed for knockdown (7 to 10 days) only of existing adult populations.	
	Sod Webworm (Crambus spp.)	0.4 to 0.8 oz. (1 to 2 lbs. per acre)	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	¾ oz. (2 lbs. per acre)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	

COMMERCIAL TURFGRASS, LAWNS, AND OTHER RECREATIONAL TURFGRASS AREAS (Cont.)
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass (Residential & Commercial)	Mole Crickets (Except CA) Spittlebug (Except CA)	0.8 to 1.4 oz. (2 to 3.9 lbs. per acre)	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.	<p>Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.</p> <p>Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.</p> <p>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 Pellets. 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 teaspoons per gallon of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.</p>
	Greenbug (Schizaphis graminum) Grasshoppers	0.4 oz. (1.0 lbs. per acre)	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 Pellets. 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)	0.9 to 1.4 oz (3.1 to 3.9 lbs. per acre)	Apply when insects or their damage first appear.	Apply the specified Amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 5 gallons water per 1000 sq. ft. Irrigate lightly after application (not more than 1/2 inch). Use the higher rate for severe infestations.
Dichondra	Cutworm Flea Beetle Southern Armyworm Yellow Striped Armyworm	0.8 to 1.4 oz. (2 to 3.9 lbs. per acre)	As the insects appear. Repeat at 2 week intervals as necessary.	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 15 gals. of water per 1,000 sq. ft. to obtain good coverage.

MOUND TREATMENT OF FIRE ANTS IN TURFGRASS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass	Ants, including Imported Fire Ants and Harvester Ants	Mound Treatment-Drench Method: Mix ¾ 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.	Apply the specified amount of ORTHENE 97 Pellets as directed. Grass in treated areas may be injured. Do not treat mound more than once per season.

OUTDOOR AND PERIMETER SPRAY

LOCATION	INSECTS	AMOUNT ORTHENE 97 PELLETS PER GALLON	TIME OF APPLICATION	RECOMMENDED APPLICATION
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 Pellets per each gallon of water used. Apply as a spot treatment to the nest, nest entrance, and surrounding areas where the wasps alight.
	Ants, including Imported Fire Ants and Harvester Ants Crickets Cockroaches Earwigs Pillbugs	1.2 oz.	As the insects appear.	Apply specified amount of ORTHENE 97 Pellets per each gallon of water used. Apply to a band of soil 6 to 10 feet adjacent to the structure and to a height of 2 to 3 feet 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.

OUTDOOR FLORAL CROPS AND GROUND COVERS

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Chrysanthemums Dahlias Daisies Easter Lily Gladioli Gypsophila Pachysandra Pansy Peony Roses Sedum Statice Strawflower Yarrow Zinnia	Aphids Thrips Lygus	½ lb. (8 oz.)	As insects begin to appear. Repeat applications may be necessary.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. 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.
Boston Ivy Roses	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetles begin to appear. Repeat applications at 2 week intervals may be necessary.	

GREENHOUSE FLORAL AND FOLIAGE PLANT CROPS

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Roses	Leafrollers	½ to ¾ lb. (8 to 12 oz.)	As leafrollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
Foliage Plants, Anthuriums, Cacti, Orchids, Poinsettia	Aphids	½ lb. (8 oz.)	As aphids begin to appear.	Apply the specified amount of ORTHENE 97 Pellets 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.
	Mealybugs, Thrips, Whiteflies	½ 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.	Caution: Phytotoxicity has occurred on the following foliage plants: Bletchum gibbum, Cissus antarctica, Ficus triangularis, Fittonia verschaffeltii, Maranta leuconeura kerchoveana, Pachystachya lutea, Plectranthus australis, Polypodium aureus, Polystichum, Pteris ensiformis, Tolmiea menziesii. Before treating large plantings spray only a few plants and observe two weeks for varietal phytotoxicity. Application of ORTHENE 97 Pellets on Poinsettias after bract formation may result in phytotoxicity on certain varieties.
	Scales (Crawlers)	½ 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.	
	Sweet Potato Whiteflies (Except CA)	¼ lb. (4 oz.) plus TAME 2.4 EC Spray 10 ⅔ fl. oz. (0.2 lb. ai)	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.	
Carnations, Chrysanthemums, Roses	Aphids, Thrips	½ lb. (4 oz.)	As aphids 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 Pellets 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. Caution: 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. Do not apply to Chrysanthemums and Roses with open flowers.

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.

STORAGE AND DISPOSAL

PROHIBITIONS

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

Open dumping is prohibited.

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 1-800-892-0099.

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

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

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