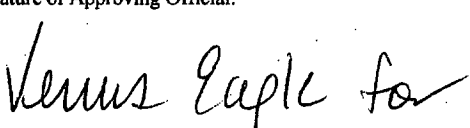
	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> <b>Office of Pesticide Programs</b> <b>Registration Division (7505P)</b> <b>Ariel Rios Building</b> <b>1200 Pennsylvania Ave., NW</b> <b>Washington, D.C. 20460</b>	EPA Reg. Number: <b>59639-33</b>	Date of Issuance: <b>JUN 20 2007</b>
	<b>NOTICE OF PESTICIDE:</b> _ Registration <input checked="" type="checkbox"/> Reregistration (under FIFRA, as amended)	Term of Issuance:	
		Name of Pesticide Product: <b>Orthene 90S</b>	
Name and Address of Registrant (include ZIP Code): <b>Valent U.S.A. Corporation</b> <b>1600 Riviera Avenue, Suite 200</b> <b>PO Box 8025</b> <b>Walnut Creek, CA94596</b>			
<b>Note:</b> Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.			
<p>On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>Based on your response to the Reregistration Eligibility Decision (RED) for Acephate, EPA has reregistered the product listed above. This action is taken under the authority of section 4(g)(2)(C) of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Reregistration under this section does not eliminate the need for continual reassessment of pesticides. EPA may require submission of data at any time to maintain the registration of your product.</p> <p>Generic data requirements that have been identified in the RED as confirmatory data for the active ingredient contained in the subject product will continue to be tracked and assessed in the Agency's continual reassessment of pesticides.</p> <p>The labeling for the subject product submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable provided you submit one (1) copy of the final printed label incorporating the following corrections before you release the product for shipment. Products shipped after 12 months from the date of this Notice must bear the new revised label. A stamped copy of the label for each of the two package types is enclosed for your records.</p> <p><b>Water-soluble Package Label</b></p> <p>1. Remove the PPE for the hopper box seed treatment use (page 4). This use, which is a dry application of the subject product, appears only on the conventional packaged product label.</p>			
Signature of Approving Official: 		Date: <b>JUN 20 2007</b>	

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2. Correct the text in the second sentence of the Engineering Controls section (page 5) from “\_\_ and must be provided and must have immediately available for use in an emergency \_\_” to read as follows: “\_\_ must be provided, must have immediately available and must use in an emergency \_\_”

3. Add the text “and tobacco (float bed application)” to the third bullet under General Use Restrictions (page 10) so that it reads as follows: For greenhouse use, use is limited to commercial greenhouses for use on ornamental, floral, and foliage plants and tobacco (float bed application).

4. Make the corrections cited below to the Spray Drift Management labeling section (page 10). Please refer to item number 11 of our letter dated December 31, 2006.

a. Remove the first three sentences and the last sentence of the first paragraph so that the paragraph reads as specified in item number 11 of our letter dated December 31, 2006.

b. Remove the statement “Applications more than 10ft. above the crop canopy should be avoided” as the more appropriate statement appears above it; i.e. “for aerial applications, do not apply at heights greater than 10 feet (consistent with flight safety).”

5. Revise the advisory statement on page 17 pertaining to the label of the cotton tank mixed product ( “Users should comply \_\_ ”) to one that is mandatory in nature such as that appearing at the top of the tank mix table; i.e. Always read and follow all label directions \_\_\_\_.” The advisory statement was corrected as specified in our previous letter (item number 13.c.) for use of the Danitol product but not for use of the Lorsban product.

6. As specified in our previous letter of December 31, 2006, only the mound treatment for fire ants and harvester ants is supported by the efficacy data. Consequently, any general ant mound claim must be qualified to exclude all other health and structural ant pests (carpenter and pharaoh ants). Thus, the ant mound claim for tobacco (page 31) must be revised to read as follows: ants (except carpenter and pharaoh).

7. Qualify the added acephate RED-specified minimum spray interval restriction (3 days and 7 days) so that it does not appear to conflict with the longer spray intervals (14 days and 4-week) appearing on the label for certain listed trees and shrubs (pages 33 and 34); i.e. because longer spray intervals are specified for all other listed trees and shrubs, the added minimum spray interval restriction would actually only apply to the Douglas fir and would only be as a 3- day interval (due to the 0.5 lb/acre maximum application label rate).

8. Specify the maximum application rate for the container grown nursery stock on a per acre basis not to exceed the acephate RED maximum application rate of 0.75 lb ai/acre for cut flowers and 1 lb ai per acre for all other listed ornamental plants.

9. Make the changes cited below to the cut flower table (page 39).

a. Remove the statement “Do not exceed 17.6 oz of product per acre”

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(equivalent to 15.84 oz ai) appearing in the "recommended application" column as it conflicts with both the maximum label rate (0.56 lbs product; 0.5 lb ai ) as well as the maximum rate allowed for cut flowers in the RED (0.75 lb ai/acre)

b. The restrictions added to the table ("Do not apply more than 8.9 oz (0.56 lb/A) of Orthene 90 S [insecticide in a water soluble bag] per 100 gals of water per application.", "Do not exceed 0.75 lb/A Orthene 90S [insecticide in a water soluble bag] per season." and "Do not make more than one (1) application per crop season." conflict with one another and also with the statement "Multiple applications may cause slight tip burn \_\_" and must be revised. If you are voluntarily limiting the applications at the label rate of 0.56 lb/acre to one per season, remove the second and last statements ("Do not exceed 0.75 lb/A Orthene 90S [insecticide in a water soluble bag] per season." and "Multiple applications may cause slight tip burn \_\_").

It is noted for the record, that the cut flower use pattern appearing on the subject label is more restrictive than specified in the acephate RED. The maximum single rate specified in the RED for cut flowers is 0.75 lb a.i./A per 100 gallons of water with a minimum spray interval of 3 days for rates up to and including 0.5 lb a.i. per acre and 7 days for rates over 0.5 lb a.i. per acre. There is no maximum seasonal rate.

10. The label contains text that appears to be mandatory and that needs to be revised to be advisory in nature. For example: The text "Do not apply to Chrysanthemums with open flowers" (pages 40), "Do not apply to Roses with open flowers" (page 42) and "Do not apply more often than once every 28 days to Chrysanthemums." (page 40) needs to be revised to read something like "Application to roses (Chrysanthemums) in flower may result in flower damage." or "Valent does not recommend that application be made to roses (Chrysanthemums) with open flowers." and "Application to Chrysanthemums more often than once every 28 days may result in phytotoxicity."

11. Remove the Small Volume Spray Equipment table (page 42) for the preparation of the product spray mix using a small fluid ounce measuring cup. Application rates in terms of teaspoons or quantities of product smaller than the net contents of an individual packet are not appropriate for use of a product required to be in water soluble containers. Such containers are not meant to be opened.

12. The label is lacking the additional equivalent tables similar to those appearing on the enclosed page 8 of your Orthene 75S label, EPA Reg. No. 59639-26. These are needed to reflect the use of the water soluble packets for all the ranges of application rates specified on the label.

13. Revise the container disposal paragraph so that it only contains statements pertaining to the water soluble packaging.

#### **Label Corrections for Both the Water-soluble Package and the Conventional Package**

1. Correct the warranty statements under "Prompt Notice of Claim" as specified below. Refer to the enclosed examples of warranty statements.

a. Add the phrase "to the extent consistent with applicable law allows such requirements" to the beginning of the sentence "Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or \_\_\_\_."

b. Add the phrase "to the extent consistent with applicable law" to the beginning of the sentence "If Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy."

2. Relocate the two statements relating to exposed seed (Environmental Hazards section) from their present location at the end of the effluent discharge paragraph so that they appear in a separate paragraph and in the second paragraph position of the section. Thus, the effluent discharge labeling language would become the third paragraph of the section. Also, note the correction in the second exposed seed statement from " \_\_ bodies water" to " \_\_ bodies of water".

3. Remove the term "recommended" occurring in the column headings of several use direction tables. A more appropriate heading would be "further use instructions".

4. The ant mound treatment claim "ants (including fire ants and harvester)" for non-crop areas (page 43 of the WSP and page 54 of the conventional label) must be revised to either 1) limit the ant claim to fire ants and harvester ants or 2) add the restriction "Do not use on turf" and change the claim to "ants (excluding carpenter and pharaoh)".

This revision is needed because the unqualified use site "non-crop" does not necessarily exclude all turf areas and, as stated in the acephate RED, use on turf is limited to golf course and sod farm turf and to fire and harvester ant mound treatment. Additionally, the available efficacy data for the mound treatment for the public health and structural ant species are only supportive of fire ant and harvester ant.

### **Conventional Packaged Product**

1. The ant mound claim for tobacco (page 54) must be revised to read as follows: ants (except carpenter and pharaoh).

2. Correct the text "liquid in-furrow" to "in-furrow" in the statement following the maximum seasonal rate for the cotton use table (page 52). As indicated in the acephate RED use table, Appendix A, the in-furrow use includes granular as well as liquid applications.

3. Add the following reentry statement cited below to the Non-Agricultural Requirements box as specified in the acephate RED: Do not enter or allow others to enter until dusts have settled.

4. Add the following statement to the User Safety Requirements box as the last sentence in the box as it appears on the label for the water soluble packaged product: As soon as possible, wash thoroughly and change into clean clothing.

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5. Remove the front Panel claim "Formulation for Eggs/DEADHATCH." There are no directions for Eggs/DEADHATCH on the label.

#### SLNs

Based on the registrant's response to the acephate IRED, EPA has reregistered the use of acephate for the Special Local Need (SLN) registrations associated with this parent product, subject to the label corrections for certain of the SLNs as specified below. A copy of the label for each of the SLNs is attached.

Submit one copy of the corrected label for those SLNs for which label corrections are needed for our file. When submitting each label to the State for their comment/approval, please request the State to forward a copy of the revised SLN label (including their additions, if any) to the Agency for official confirmation of their receipt and approval (since Agency approval of the States' notification is required to finalize the action).

#### AR890008 and OK890002

1. Add a 21-day preharvest interval.
2. Remove the portion of the table of equivalents for application rates greater than those specified on the label. For example, the AR890008 table of equivalents include application rates of 0.56, 0.83, 1.0 and 1.1 lbs/A whereas the maximum rate specified in the use directions is  $\frac{1}{2}$  lb/A.
3. Since the maximum application rate in the use directions is 0.5 lb/A, revise the statement "User must allow a minimum of 3 days between applications for 0.5 lb/A or less." to read as follows: "User must allow a minimum of 3 days between applications."

#### TX910003

1. Add a 21-day preharvest interval.
2. Remove the portion of the table of equivalents for application rates greater than those specified on the label.

#### TX940001

1. Add a 21-day preharvest interval.
2. Remove that portion of the equivalency table that is not reflective of the actual application rate specified in the use directions.
3. Since the only application rate in the use directions is greater than 0.5 lb a.i./A revise the statement "User must allow a minimum of 7 days between applications greater than 0.5 lb a.i./A to read as follows: "User must allow a minimum of 7 days between applications."

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**TX970011**

Remove the portion of the table of equivalents for application rates greater than those specified on the label.

**MS970010.**

No corrections are needed for this SLN.

The Agency has completed the cumulative assessment for the organophosphate pesticides (OPs) and finalized the Interim Reregistration Eligibility Decisions (IREDs) for the OP pesticides. The assessment and supporting documents may be found on the Agency's web site at [www.epa.gov/pesticides/cumulative](http://www.epa.gov/pesticides/cumulative) and in the docket (EPA-HQ-OPP-2006-0618).

*Venus Eagle*

Meredith F. Laws, Chief  
Insecticide-Rodenticide Branch  
Registration Division (7504P)

Enclosures: Stamped label  
SLN labels  
Examples of warranty statements  
Page 8 from Orthene 75S label, EPA Reg. No. 59639-26

cc: State Pesticide Regulatory Agencies for the States;  
AR, OK, MS, and TX, (copy of Notice and SLN label)

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## WATER SOLUBLE PACKAGING

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### MULTIPLE PACKAGING

This bag contains multiple water soluble packets of *Orthene* 75 S Soluble Powder. Do not handle the packets with wet gloves or allow the packets to become wet prior to addition to spray tank. Do not break open packets. Refer to the Tables of Equivalents to calculate the number of packets to use. If all packets are not used, close and reseal outer container to protect remaining packet(s).

### SINGLE PACKAGING

This bag contains one water soluble packet of *Orthene* 75 S Soluble Powder. Do not handle the packet with wet gloves or allow the packet to become wet prior to addition to spray tank. Do not break open packet. Refer to the Tables of Equivalents to calculate the number of packets to use. Open outer bag by pulling perforated tearstrip and drop the unopened inner packet of *Orthene* 75 S Soluble Powder into spray tank.

### PREPARATION OF SPRAY SOLUTION

To prepare spray solution, drop the unopened packet(s) of *Orthene* 75 S Soluble Powder into a spray tank containing at least one half the total quantity of water required. Direct water at the floating packet(s) and continue to add water with the agitator running until the spray volume is reached. **Do not add any liquid fertilizers, micronutrients or adjuvants to the spray solution until after the packet and its contents have completely dissolved.** Water soluble packet(s) should completely dissolve in approximately five minutes. Dissolution rate may be slowed by cold water, lack of agitation or water containing high concentrations of boron or sulfur.

Enclave

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Table of Equivalents for 1/3 lb. Packet

Rates of ORTHENE 75 S per 100 Gals. of Water	Number of 1/3 lb. Packet(s) per 100 Gals. of Water
1/3 lb.	1
2/3 lb.	2
1 lb.	3
1 1/3 lbs.	4

Rates of ORTHENE 75 S		Treatment Area per 1/3 lb. Packet(s)	
Per Acre	Per 100 sq. ft.	Acres	sq. ft.
1 1/3 lbs.	0.5 oz.	0.25	11,000
2 2/3 lbs.	1.0 oz.	0.12	5,400
6 2/3 lbs.	2.5 oz.	0.05	2,200

Table of Equivalents for 2 lb. Packet

Rate of ORTHENE Turf, Tree & Ornamental WSP per 100 Gals. of Water	Number of Gallons of Water per 2 lb. Packet
1/3 lb.	600
2/3 lb.	300
1 lb.	200
1 1/3 lbs.	150

Rates of ORTHENE Turf, Tree & Ornamental WSP		Treatment Area per 2 lb. Packet	
Per Acre	Per 1,000 sq. ft.	Acres	sq. ft.
1 1/3 lbs.	0.5 oz.	1.50	64,000
2 2/3 lbs.	1.0 oz.	0.75	32,000
6 2/3 lbs.	2.5 oz.	0.30	12,800



## LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read this Limitation of Warranty and Liability Before Buying or Using This Product. If the Terms Are Not Acceptable, Return the Product at Once, Unopened, and the Purchase Price Will Be Refunded.

It is impossible to eliminate all risks associated with the use of this product. Such risks arise from weather conditions, soil factors, off-target movement, unconventional farming techniques, the presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of XXX. These risks can cause: ineffectiveness of the product; crop injury, or; injury to non-target crops or plants.

XXX does not agree to be an insurer of these risks beyond what is expressly warranted by this label. When you buy or use this product, you agree to accept these risks.

XXX warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purpose stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.

To the extent consistent with applicable law, XXX makes no other express or implied warranty of fitness or of merchantability or any other express or implied warranty.

To the extent consistent with applicable law, in no event shall XXX or seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. Buyer's or user's bargained-for expectation is crop protection. To the extent consistent with applicable law, the exclusive remedy of the user or buyer and the exclusive liability of XXX or seller, for any and all claims, losses, injuries or damages (including claims based on breach of warranty or contract, negligence, tort or strict liability), whether from failure to perform or injury to crops or other plants, and resulting from the use or handling of this product, shall be the return of the purchase price of the product, or at the election of XXX or seller, the replacement of the product.

To the extent consistent with applicable law allows such requirement, XXX or its Ag Retailer must have prompt notice of any claim so that an immediate inspection of buyer's or user's growing crops can be made. Buyer and all users shall promptly notify XXX or a XXX Ag Retailer of any claims, whether based on contract, negligence, strict liability, or other tort or otherwise be barred from any remedy.

This Limitation of Warranty and Liability may not be amended by any oral or written agreement.



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ACCEPTED  
with COMMENTS  
in EPA Letter Dated:  
JUN 20 2007  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
As amended, for the pesticide  
Registered under EPA Reg. No.  
59639-33

# ORTHENE<sup>®</sup> 90 S

[MASTER LABEL]

Sub-Label 1 - ORTHENE<sup>®</sup> 90 S [Insecticide in a Water-Soluble Packet]

Sub-Label 2 - ORTHENE<sup>®</sup> 90 S [Soluble Powder Insecticide for Hopper Box and Ant Treatment Uses]

Active Ingredient	By Wt.
*Acephate.....	90%
Other Ingredients.....	10%
Total .....	100%

\*O,S-Dimethyl acetylphosphoramidothioate

KEEP OUT OF REACH OF CHILDREN

## CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

Formulation for Eggs/DEADHATCH<sup>®</sup>

NET WEIGHT

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[Sub-label 1]

**Orthene 90 S**  
**[INSECTICIDE IN A WATER-SOLUBLE PACKET]**



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# ORTHENE® 90 S

[INSECTICIDE IN A WATER-SOLUBLE PACKET]

Active Ingredient	By Wt.
*Acephate.....	90%
Other Ingredients.....	10%
Total .....	100%

\*O,S-Dimethyl acetylphosphoramidothioate

KEEP OUT OF REACH OF CHILDREN

## CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

Formulation for Eggs/DEADHATCH®

NET WEIGHT \_\_\_\_\_

Contains \_\_\_\_\_ WSP Packets

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## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS & DOMESTIC ANIMALS**

## **CAUTION**

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin and clothing.

### **FIRST AID**

**Acephate is an organophosphate, cholinesterase inhibitor.**

- If swallowed:**
- Call a poison control center or doctor immediately for treatment advice.
  - Have person sip a glass of water if able to swallow.
  - Do not induce vomiting unless told to do so by the poison control center or doctor.
  - Do not give anything by mouth to an unconscious person.
- If in eyes:**
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
  - Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
  - Call a poison control center or doctor for treatment advice.
- If on skin or clothing:**
- Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.
  - Call a poison control center or doctor for treatment advice.
- If inhaled:**
- Move person to fresh air.
  - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
  - Call a poison control center or doctor for further treatment advice.

### **HOT LINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

### **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.

### **PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some materials that are chemical-resistant to this product are listed below. 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 such as Butyl rubber  $\geq$  14 mils, Nitrile rubber  $\geq$  14 mils or Neoprene  $\geq$  14 mils and socks plus shoes.

**In addition, 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.

**In addition, Mixers and Loaders supporting hopper box seed treatments must wear:** a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter.

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

**See Engineering Controls for additional requirements.**

**ENGINEERING CONTROLS:**

Water soluble packets when used correctly qualify as a closed mixing/loading system under the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(4)]. Mixers and Loaders using water soluble packets must wear: the personal protective equipment required above for Mixers/Loaders and be provided and must have immediately available for use in an emergency, such as a broken package, spill or equipment breakdown the following PPE: coveralls, chemical-resistant footwear and a NIOSH approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter.

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.

**USER SAFETY REQUIREMENTS**

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) permit 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. Exposed seed may be hazardous to birds and other wildlife. Dispose of all excess seed and seed packaging by burial away from bodies water.

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 actively 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.

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### **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 and 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.

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**DISCLAIMER, RISKS OF USING THIS PRODUCT,  
LIMITED WARRANTY  
AND LIMITATION OF LIABILITY**

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

**RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These 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 of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer 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 only 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 as described above. EXCEPT AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

**LIMITATION OF LIABILITY**

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE 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 THE PRODUCT.

**PROMPT NOTICE OF CLAIM**

Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

If Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

**NO AMENDMENTS**

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

**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.



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## WATER SOLUBLE PACKAGING

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### MULTIPLE PACKAGING

This bag contains multiple water soluble packets of ORTHENE 90 S. Do not handle the packets with wet gloves or allow the packets to become wet prior to addition to spray tank. Do not break open packets. Refer to the Tables of Equivalents to calculate the number of packets to use. If all packets are not used, close and reseal outer bag to protect remaining packet(s).

### SINGLE PACKAGING

This packet contains one water soluble packet of ORTHENE 90 S. Do not handle the packet with wet gloves or allow the packet to become wet prior to addition to spray tank. Do not break open packets. Refer to the Tables of Equivalents to calculate the number of packets to use. Open outer bag by pulling perforated tearstrip and drop the unopened inner packet of ORTHENE 90 S into spray tank.

### PREPARATION OF SPRAY SOLUTION

To prepare spray solution, drop the unopened packet(s) of ORTHENE 90 S into a spray tank containing at least one-half the total quantity of water required. Direct water at the floating packet(s) and continue to add water with the agitator running until the spray volume is reached. **Do not add any liquid fertilizers, micronutrients or adjuvants to the spray solution until after the packet and its contents have completely dissolved.** Water soluble packet(s) should completely dissolve in approximately five minutes. Dissolution rate may be slowed by cold water, lack of agitation or water containing high concentrations of boron or sulfur.

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## TABLE OF EQUIVALENTS

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Rates of ORTHENE 90 S Per Acre	Acres Treated by a 2.5 lb. WSP Packet
2.5 oz.	16
3.2 oz.	12.5
3.25 oz.	12.3
0.25 lb.	10
0.28 lb.	8.9
0.5 lb.	5
0.56 lb.	4.5
0.8 lb.	3.1
1.0 lb.	2.5
1.1 lb.	2.3

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## GENERAL INFORMATION

ORTHENE 90 S a soluble powder is an insecticide for control of pests on selected agricultural crops and in certain non-crop areas. The active ingredient in ORTHENE 90 S is acephate, a water-soluble insecticide readily absorbed by plant roots and foliage to give systemic control of feeding insects. Insect pests are generally controlled more effectively by ORTHENE 90 S through ingestion than by contact. Application of ORTHENE 90 S to maintain control should be repeated only as directed.

[The following paragraph is for ornamental use labels only.]

To ensure that ORTHENE 90 S, a soluble powder, is compatible with the variety or cultivar of the listed ornamental crops under your specific conditions, test the product on a limited scale and observe for phytotoxicity over two weeks before making large scale applications. The large number of existing ornamental varieties and cultivars coupled with the constant introduction of new variants precludes specific testing of each type. It is impossible to field test this product in every locale where sold or in all of the combinations created by differences including those in soil or media type, pH, moisture of fertility, environment conditions such as temperature, lighting or degree days and horticultural practice including planting dates, control of other pests, timing of various horticultural practice and the manner of use and application of this product.

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR INSECT CONTROL, CROP INJURY AND/OR ILLEGAL RESIDUES.**

### GENERAL 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.

### 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.**

### SPRAY DRIFT MANAGEMENT

Do not apply this product in a manner that allows spray to drift and cause adverse effects to humans, animals or other non-target sites. Avoiding spray drift at the application site is the responsibility of the applicator. Applicators should evaluate conditions existing at the time of application and make appropriate adjustments to reduce drift. A variety of factors including weather conditions, (e.g., wind direction, 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. Observe the following recommendations to minimize drift:

- 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 use 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.

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- Make applications when wind velocity favors on-target product deposition (approximately 3 to 10 mph).
  - For aerial applications, do not apply at heights greater than 10 ft. (consistent with flight safety).
  - Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage. Applications more than 10 ft. above the crop canopy should be avoided.
  - For airblast applications, direct spray above foliage and turn off outward pointing nozzles at row ends and outer rows.
  - 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.
  - For ground applications, do not apply at heights greater than 4 ft.

## BEANS AND LIMA BEANS - Dry and Succulent Forms

### GENERAL USE PRECAUTIONS

- Do not feed treated vines to livestock.
- Do not apply more than 2.2 lbs./A (2 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per crop cycle.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 1 BEANS AND LIMA BEANS - Dry and Succulent Forms - Directions for Use**

APPLICATION METHODS	PESTS CONTROLLED	RATES OF ORTHENE 90 S 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 Grasshoppers	0.28 to 0.56 lb. (4.48 to 8.96 oz.)	Apply when eggs or insects first appear. Use higher rates for severe insect infestations.	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)	0.56 to 1.1 lbs. (8.96 to 17.6 oz.)		1 (lima beans - succulent form)
	Armyworms (excluding Beet Armyworm) Corn Earworm European Corn Borer	0.8 to 1.1 lbs. (12.8 to 17.6 oz.)		

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## CELERY

### GENERAL 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 2.2 lbs./A (2 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per crop cycle.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 2 CELERY - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 50 to 100 gals./A of spray  <b>By Air:</b> Minimum of 5 gals./A of spray	Green Peach Aphid	0.56 to 1.1 lbs. (8.96 to 17.6 oz.)	Apply when eggs or insects first appear.	21
	Cabbage Looper Fall Armyworms	1.1 lbs. (17.6 oz.)		

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## COLE CROPS - Brussels Sprouts and Cauliflower

### GENERAL USE PRECAUTIONS

- Do not apply more than 2.2 lbs./A (2 lb. ai) ORTHENE 90 S [Insecticide in a Water Soluble Packet] 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 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 3 COLE CROPS - Brussels Sprouts and Cauliflower - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 25 to 150 gals./A of spray  <b>By Air:</b> Minimum of 5 gals./A of spray	Green Peach Aphid	0.56 to 1.1 lbs. (8.96 to 17.6 oz.)	Use the high rate when heavy infestations of aphids are present.	14
	Cabbage Looper Diamondback Moth Larvae Imported Cabbage Worm	1.1 lbs. (17.6 oz.)	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.	

## COTTON

### GENERAL USE PRECAUTIONS

- Do not use treated seed for food or feed purposes or process for oil.
- Do not feed treated forage or gin trash to livestock.
- Do not allow animals to graze on treated areas.
- Do not apply more than 4.4 lbs./A (4 lbs. ai) ORTHENE 90 S [Insecticide in a Water Soluble Packet] per crop cycle. This includes all foliar spray, in-furrow application and seed treatment uses.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

### For Aerial Application:

- Do not apply more than 1.1 lbs./A ORTHENE 90 S per application to cotton grown in AZ and CA.
- Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton grown in all other states except AZ and CA.

**TABLE 4 COTTON - Directions for Use**

APPLICATION METHODS	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
<b>IN FURROW</b>  <b>By Ground:</b> 3 to 5 gals./A of spray.  <b>AT-PLANTING APPLICATION</b>	Aphids* Black (Greasy) Cutworm (except CA) Thrips (including Western Flower Thrips)	0.56 to 1.1 lb.	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 90 S can be mixed with fungicides that are sprayed in-furrow for disease control.	At-Planting Application
	*Excluding Cotton Aphids in AZ & CA.	<b>NOTE: For the Blacklands of Texas use 1.1 lb./A ORTHENE 90 S.</b>		
<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) <sup>2</sup>	Thrips (including Western Flower Thrips)	3.2 oz.	Apply when eggs or insects first appear.	21
	Plantbugs (Lygus)	0.28 to 1.1 lb.	Apply when eggs or insects first appear.	21
		0.56 to 1.1 lb. (AZ & CA)	Use highest rate for Lygus adults that have migrated into cotton.	
	Fleahopper	0.28 lb.	Apply when eggs or insects first appear.	21
	Cotton Aphids (excluding AZ and CA)	0.56 to 1.1 lb.	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)	0.56 to 1.1 lb.		21
	Armyworms (excluding Beet Armyworm)  Cabbage Looper	1.1 lb.	Apply when eggs first appear.	21

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TABLE 4 COTTON - Directions for Use continued

APPLICATION METHODS	PESTS CONTROLLED	RATES OF ORTHENE 90 S 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) <sup>2</sup>	Bollworm Tobacco Budworm Adults Larvae  Eggs/DEADHATCH®	0.56 to 1.1 lb. (East of Rockies)  1.1 lb. (AZ & CA)  0.28 to 0.56 lb.	Early Season: Use 0.56 lb./A for light infestation.  Mid and Late Season: Use 0.8 to 1.1 lb./A for moderate to severe infestations.  Apply when eggs first appear.  Moths of budworm larvae are controlled by direct contact with spray. Moth kill is most likely to occur when late evening applications are made.  DEADHATCH: Control of emerging larvae by consumption of treated egg casings.	21
	Stinkbugs	0.8 lb.	Apply when eggs first appear.	21
	Pink Bollworm (AZ & CA)	1.1 lb.	Apply when insects first appear.	21
	Cutworms	0.8 lb.	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 repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

<sup>2</sup>For Aerial Application: Do not apply more than 1.1 lb./A ORTHENE 90 S per application to cotton grown in AZ and CA. Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton grown all other states except AZ and CA.

#### 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.



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**COMMERCIALLY TREATED COTTONSEED**  
**(FOR USE BY COMMERCIAL SEED TREATERS ONLY)**

**GENERAL USE PRECAUTIONS**

- This formulation does not contain a dye. Compliance with the Federal Seed Act and 21 CFR Chapter 1, Section 2.5 requires that all seed treated with this product must be colored to distinguish from, and prevent subsequent inadvertent use as, food for humans 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 90 S [Insecticide in a Water Soluble Packet] may be considered adulterated under state and federal laws if sold or shipped as food or feedstuffs. Seed commercially treated with ORTHENE 90 S 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.
- ORTHENE 90 S contains a water soluble systemic insecticide which helps to reduce injury to cotton seedlings by several insects.

**TABLE 5 COMMERICALLY TREATED COTTONSEED – Directions for Use**

PESTS CONTROLLED	AMOUNT PER 100 LBS. COTTONSEED	EFFICACY	ADDITIONAL USE INSTRUCTIONS
Cotton Aphids Thrips	7.1 oz.	Gives effective reduction of Thrips and Cotton Aphids for up to three weeks after planting.	ORTHENE 90 S can be mixed in the slurry tank with most of the fungicide seed treatments in common use. ORTHENE 90 S can also be applied as a separate treatment using enough water to give adequate coverage of the seed. ORTHENE 90 S dissolves quickly in water with a minimum of agitation.
Black (Greasy) Cutworm	7.1 oz.	Gives effective reduction of Black (Greasy) Cutworm from planting through the 3rd to 4th leaf stage of development.  When planting into fields where large cutworms are present (5th instar and larger) economic damage may occur.	

## 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 4.4 lbs./A (4 lbs. ai) ORTHENE 90 S [Insecticide in a Water Soluble Packet] per crop cycle. This includes all foliar spray, in-furrow application and seed treatment uses.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

### For Aerial Application:

- Do not apply more than 1.1 lbs./A ORTHENE 90 S per application to cotton grown in AZ and CA.
- Do not apply more than 0.83 lb./A ORTHENE 90 S 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 - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 90 S AND TANK MIX PARTNER	AMOUNT OF ORTHENE 90 S + 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 10 gals./A of spray (minimum 5 gals./A in AZ & CA) <sup>2</sup> .	Sweetpotato Whitefly (Silverleaf Whitefly)	ORTHENE 90 S + DANITOL 2.4 EC Spray	0.56 to 1.1 lb. + 10 2/3 to 16 fl. oz.	Always read and follow all label directions, restrictions and precautions on the EPA registered label for Danitol 2.4 EC Spray.	21
	Armyworms (excluding Beet Armyworm) Bollworm Cabbage Looper Cotton Aphid Cutworms Fleahopper Grasshoppers Pink Bollworm Plantbugs (Lygus, Mirids) Salt Marsh Caterpillar Thrips (including Western Flower Thrips) Tobacco Budworm Whitefly (excluding Sweetpotato/Silverleaf Whitefly)	ORTHENE 90 S + LORSBAN® 4E	0.28 to 1.1 lbs. + 1 to 2 pts.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for LORSBAN® 4 E.  <b>Cutworms:</b> Use of 0.8 lb./A ORTHENE 90 S  <b>By Ground:</b> 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.  <b>By Air:</b> Aerial applications are less effective, but may be used.  Apply when insects first appear or when damage is first noted.	21

<sup>1</sup>For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

<sup>2</sup>For Aerial Application: Do not apply more than 1.1 lb./A ORTHENE 90 S per application to cotton grown in AZ and CA. Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton grown in all other states except AZ and CA.

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### **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.

## 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 4.4 lbs./A (4 lbs. ai) Orthene 90 S [insecticide in a Water Soluble Packet] per crop cycle. This includes all foliar spray, in-furrow application and seed treatment uses.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

### For Aerial Application:

- Do not apply more than 1.1 lbs./A ORTHENE 90 S per application to cotton grown in AZ and CA.
- Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton grow all other states except in AZ and CA.

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 – Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 90 S AND TANK MIX PARTNER	AMOUNT OF ORTHENE 90 S + 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 AZ & CA). <sup>2</sup> See remarks for Cutworms.	Aphids Bollworm Cabbage Looper Cotton Leaf Perforator Cutworms Fall Armyworm Fleahoppers Pink Bollworm (AZ & CA) Plantbugs Stinkbugs Sweetpotato/Silverleaf Whitefly Thrips (including Western Flower Thrips) Tobacco Budworm Whitefly	ORTHENE 90 S + one of the following:	0.56 to 1.1 lb. + one of the following:	Apply when eggs or insects first appear.	21
		AMMO <sup>®</sup> 2.5 EC*	Refer to the AMMO 2.5 EC approved label for use instructions.	<b>Stinkbugs:</b> Use 0.8 lb./A of ORTHENE 90 S	21
		ASANA <sup>®</sup> XL*	Refer to the ASANA XL approved label for use instructions.	<b>*Cutworms:</b> Use 0.8 lb./A of ORTHENE 90 S	21
		BAYTHROID <sup>®</sup> 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.	<b>By Ground:</b> Ground application is recommended.	21
		CAPTURE <sup>®</sup> 2 EC	Refer to the CAPTURE 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.	21
		KARATE <sup>®</sup> 1 E (Except CA)	Refer to the KARATE 1 E approved label for use instructions.		21

<sup>1</sup>For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

<sup>2</sup>For Aerial Application: Do not apply more than 1.1 lb./A ORTHENE 90 S per application to cotton grown in AZ and CA. Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton all other states except AZ and CA.

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**TABLE 7 COTTON TANK MIXES WITH PYRETHROIDS - Directions for Use continued**

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 90 S AND TANK MIX PARTNER	AMOUNT OF ORTHENE 90 S + TANK MIX PARTNER PER ACRE	REMARKS <sup>1</sup>	DAYS TO HARVEST
		SCOUT X-TRA <sup>®</sup> (Except CA)	Refer to the SCOUT X-TRA approved label for use instructions.	By Air: 3 to 10 gals./A spray (minimum 5 gals./A in CA)  Aerial applications are less effective, but may be used.  Apply when eggs or insects first appear or damage is first noted.	28

<sup>1</sup>For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

<sup>2</sup>For Aerial Application: Do not apply more than 1.1 lb./A ORTHENE 90 S per application to cotton grown in AZ and CA. Do not apply more than 0.83 lb./A ORTHENE 90 S per application to cotton in all other states except AZ and CA.

## 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.

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## CRANBERRY

### GENERAL USE PRECAUTIONS

- Limit to one application per growing season.
- Do not apply more than 1.1 lbs./A (1 lb. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per season.
- Do not apply from start of bloom until all berries are set.

**TABLE 8 CRANBERRY - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground or Sprinkler:</b> Sufficient water to give thorough coverage  <b>By Air:</b> Minimum of 2 gals./A of spray	Cranberry Blossom Worm Cranberry Cutworm Gypsy Moth False Armyworm Fireworm Spanworm Sparganothis	1.1 lbs. (17.6 oz.)	<b>SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:</b> 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.  Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.  If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.	90

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**.

**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.**

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## HEAD LETTUCE - Crisphead Type Only

### GENERAL USE PRECAUTIONS

- Do not apply more than 2.2 lbs./A (2 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] 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 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 9 HEAD LETTUCE - Crisphead Type Only - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 10 to 60 gals./A of spray broadcast.  <b>By Air:</b> Minimum of 5 gals./A of spray	Aster Leafhopper Green Peach Aphid	0.56 to 1.1 lbs. (8.96 to 17.6 oz.)		21
	Armyworms (excluding Beet Armyworm) Cabbage Looper	1.1 lbs. (17.6 oz.)		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.

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## MINT – Peppermint and Spearmint

### GENERAL USE PRECAUTION

- Do not apply more than 2.2 lbs./A (2 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per crop cycle.
- Do not graze treated areas.
- Do not feed spent mint hay to animals.

**TABLE 10 MINT - Peppermint and Spearmint - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 20 to 100 gals./A of spray  <b>By Air:</b> 5 to 10 gals./A of spray	Alfalfa Looper Aphids Cutworms	1.1 lbs. (17.6 oz.)	Apply when eggs or insects first appear.  Make one repeat application, at a minimum of a 7 day interval, if necessary, to maintain control.	14
<b>FOLIAR</b>  <b>By Ground:</b> 40 to 100 gals./A of spray	Strawberry Root Weevil Adult Black Vine Weevil Adult	1.1 lbs. (17.6 oz.)	<b>Strawberry Root and Black Vine Weevil:</b> 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. Make one repeat application, at a minimum of 7 day interval, if necessary to maintain control.	14



## NON-BEARING CITRUS

### GENERAL USE PRECAUTIONS

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

**TABLE 11 NON-BEARING CITRUS - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS
<b>FOLIAR</b>  <b>By Ground:</b> 100 to 200 gals./A of spray.	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plantbugs Thrips Whiteflies (except Sweetpotato/Silverleaf Whiteflies)	0.56 lb. (8.96 oz.)	For repeat applications use a minimum spray interval of 7 days.
	Citrus Blackfly*	0.56 to 0.8 lb. (8.96 to 12.8 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 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants)	0.8 lb. (12.8 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 Including Imported Fire Ants and Harvester Ants*	0.8 oz./5 gals.	Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 ft. 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 register in CA for control of Citrus Blackfly and Harvester Ant.

## NON-CROP AREAS

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

#### GENERAL USE PRECAUTIONS

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

**TABLE 12 NON-CROP AREAS - Field borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits**  
Directions for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS
<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)	Grasshoppers	0.28 lb. (4.48 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.

## NON-CROP AREAS - Wasteland

#### GENERAL USE PRECAUTIONS

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

**TABLE 13 NON-CROP AREAS - Wasteland - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S 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 Grasshoppers Mormon Crickets	1.6 to 2.2 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.

## PEANUTS

### GENERAL 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 4.4 lbs./A (4.0 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per crop cycle. This includes the use of ORTHENE 90 S 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 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 14 PEANUTS - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<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	Grasshoppers	0.28 to 0.56 lb. (4.48 to 8.96 oz.)	<p>Apply when eggs or insects first appear.</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	0.4 to 0.8 lb. (6.4 to 12.8 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 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.</p>	
	Corn Earworm Fall Armyworm Leafhoppers Loopers Velvetbean Caterpillar	0.8 to 1.1 lbs. (12.8 to 17.6 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>	

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## PEPPERS - Bell

### GENERAL USE PRECAUTIONS

- Do not apply more than 2.2 lbs./A (2 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Bag] per crop cycle.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

**TABLE 15 PEPPERS - Bell - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  <b>By Ground:</b> 25 to 150 gals./A of spray  <b>By Air:</b> Minimum of 3 gals./A of spray (minimum of 5 gals./A in CA)	Grasshoppers	0.28 to 0.56 lb. (4.48 to 8.96 oz.)	Apply when eggs or insects first appear.	7
	Cabbage Looper Green Peach Aphid Tobacco Hornworm	0.56 to 1.1 lbs. (8.96 to 17.6 oz.)		
	European Corn Borer	0.8 to 1.1 lbs. (12.8 to 17.6 oz.)		

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**PEPPERS – Non-Bell**

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

- Do not apply more than 1.1 lbs./A (1 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Bag] per crop cycle.
- For repeat applications use a minimum spray interval of 3 days.

**TABLE 16 PEPPERS - Non-Bell - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b>  By Ground: 40 to 150 gals./A of spray	Aphids	0.56 lb. (8.96 oz.)		7

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## SOYBEANS

### GENERAL USE PRECAUTIONS

- Do not graze or cut vines for hay or forage.
- Do not apply more than 1.66 lbs./A (1.5 lbs. ai/A) of ORTHENE 90 S per season.
- Do not apply ORTHENE 90 S within 14 days of harvest.
- For rates up to 0.56 lb./A, at least 3 days must pass between applications of ORTHENE 90 S
- For rates between 0.56 lb./A and 1.1 lbs./A, at least 7 days must pass between applications of ORTHENE 90 S.
- 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.

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FOLIAR</b> <b>By Air:</b> 5 to 10 gals./A of spray  <b>By Ground:</b> 10 to 50 gals./A of spray	Grasshopper Thrips	0.28 to 0.56 lb.	Repeat treatment as necessary to maintain control, but do not exceed a maximum of 1.66 lbs./A (1.5 lbs. ai/A) per season.	14
	Potato Leafhopper Stink Bugs	0.56 to 1.1 lbs.		
	Armyworms (except Beet) Bean Leaf Beetle Cabbage Looper Green Cloverworm Mexican Bean Beetle Soybean Aphid Threecornered Alfalfa Hopper Velvetbean Caterpillar	0.83 to 1.1 lbs.		

## TOBACCO (Except CA)

### GENERAL USE PRECAUTIONS

- Do not apply more than 4.4 lbs./A (4 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] per crop cycle. This includes the use of ORTHENE 90 S in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.
- 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.

**TABLE 17 TOBACCO (Except CA) - Directions for Use**

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>FLOATBED</b>  <b>FOLIAGE:</b> Apply at the equivalent of 1 Tbsp. in 3 gals. water per every 1,000 sq. ft. of bed.	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	0.8 lb. (12.8 oz.)	Apply evenly to ensure thorough coverage.  <b>NOTE:</b> Floatbed water should be disposed of in the transplanted field as transplanter water or foliar spray.  For repeat applications, use a minimum spray interval of 7 days.	
<b>PLANT BED</b>  <b>FOLIAGE:</b> Apply at the equivalent of 1 Tbsp. in 1 gal. of water per every 1,000 sq. ft. of bed.	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	0.8 lb. (12.8 oz.)	Apply evenly to ensure thorough coverage.  For repeat applications, use a minimum spray interval of 7 days.	
<b>TRANSPLANT</b>  Apply in a minimum of 100 gals. of transplant water per acre.	Cutworms Flea Beetle Green Peach Aphid Potato Tuberworm Tobacco Aphid Tobacco Thrips	0.8 lb. (12.8 oz.)	Provides control for approximately 3 to 4 weeks after transplanting.  For control late in the season, apply foliar sprays of ORTHENE 90 S.	
<b>USE PRECAUTIONS:</b> Do not apply more than 0.8 lb./A ORTHENE 90 S as a transplant-water application as some phytotoxicity may occur.				
<b>FOLIAR</b>  <b>By Ground:</b> 10 to 50 gals./A of spray  <b>By Air:</b> Minimum of 3 gals./A of spray	Grasshoppers  Flea Beetle Green Peach Aphid Hornworm Tobacco Thrips  Stinkbugs Tobacco Aphid Vegetable Weevils  Budworm Cabbage Looper Cutworm Japanese Beetle	0.28 to 0.56 lb. (4.48 to 8.96 oz.)  0.56 lb. (8.96 oz.)  0.56 to 0.8 lb. (8.96 to 12.8 oz.)  0.8 lb. (12.8 oz.)	For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.	3

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TABLE 17 TOBACCO (Except CA) - Directions for Use continued

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
<b>SOIL MOUND TREATMENT</b>				
<b>DRENCH METHOD</b>	Ants (including Imported Fire Ants and Harvester Ants)	0.8 oz./5 gals.	<p>Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 ft. diameter circle around the mound.</p> <p>Apply in the early morning or late afternoon, when the ants are most active, for best results.</p> <p>Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.</p>	3
<b>USE PRECAUTIONS:</b> Treat a maximum of 13 mounds per acre. Do not treat more than once per crop cycle.				



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## CONTAINER GROWN NURSERY STOCK

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 90 S 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	0.8 lb. (12.8 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 90 S per 100 gals. of solution so as to thoroughly drench the root system.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants)	0.8 lb. (12.8 oz.)	Apply as needed to control the pest.	For repeat applications use a minimum spray interval of 7 days.

## ORNAMENTAL TREES AND SHRUBS

### GENERAL USE PRECAUTIONS

- Do not exceed 17.6 oz./A of ORTHENE 90 S [insecticide in a Water Soluble Packet] per 100 gals. water per application.
- For foliar applications, do not apply with a low pressure handwand.
- Foliar applications for all trees except flowering Crabapples and Douglas Fir must not be made more than once every 14 days. See "Recommended Application" for spray interval information regarding flowering Crabapples.
- For repeat applications use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 90 S 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	0.28 lb. (4.5 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 90 S 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	0.56 lb. (8.9 oz.)	As the insects begin to appear.	*Mist blower application. Adjust rates to 1.1 lbs. per 100 gals. water for Gypsy Moth control and 1.0 lb. per 100 gals. water for Tent Caterpillar control.
	Scales (Crawlers)	0.56 lb. (8.9 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	Do not apply to Huckleberry, Balm of Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum.  Nursery crops. Before treating large plantings, spray only a few plants and observe 2 weeks for phytotoxicity.
	Ponderosa Pine Needle Miner	0.56 lb. (8.9 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of ORTHENE 90 S in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Grasshoppers	0.56 lb. (8.9 oz.)	As the grasshoppers begin to appear.	
	California Oakworm Cankerworms (Spring and Fall)	0.28 to 0.56 lb. (4.5 to 8.9 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of ORTHENE 90 S in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	0.8 lb. (12.8 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	0.8 lb. (12.8 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 90 S in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bugs Sawflies Budworms Leafhoppers	0.8 lb. (12.8 oz.)	As the insects begin to appear.	
	Japanese Beetle	1.1 lbs. (17.6 oz.)	As the Japanese Beetles begin to appear. Repeat applications, at 2 week intervals, may be necessary.	
	Elm Leaf Beetle (larvae)	1.1 lbs. (17.6 oz.)	As the larvae begin to appear. ORTHENE will not prevent Elm Leaf Beetle eggs from hatching.	

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**ORNAMENTAL TREES AND SHRUBS** continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 90 S PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Douglas Fir (Christmas Trees)	Douglas Fir Needle Midge	0.56 lb. (8.9 oz.)	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 90 S 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 Tent Caterpillar Leafroller	0.28 lb. (4.5 oz.)	As the insects begin to appear.	<p>Apply the specified amount of ORTHENE 90 S 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><b>Caution:</b> Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.</p>

## GOLF COURSE TURFGRASS

### GENERAL USE PRECAUTIONS

- 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 4.4 lbs./A (4.0 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] to Golf Courses.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.56 lb./A and a minimum of 7 days for rates exceeding 0.56 lb./A.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 90 S PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Golf Course Turfgrass	Cutworm Fall Armyworm Southern Armyworm Yellow Striped Armyworm	0.4 to 1.0 oz. (1.1 to 3.3 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 90 S per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Chinch Bugs	0.4 to 1.6 oz. (1.1 to 4.4 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	
	Sod Webworm	0.4 to 0.83 oz. (1.1 to 2.2 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	0.83 oz. (2.25 lbs./A)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	

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**GOLFCOURSE TURFGRASS - continued**

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 90 S PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Golf Course Turfgrass	Mole Cricket (except CA) Spittlebug (except CA)	0.83 to 1.6 oz. (2.2 to 4.4 lbs./A)	As mole crickets begin to appear. For knockdown of existing populations, more than 1 application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	<p>Apply the specified amount of ORTHENE 90 S 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 90 S. 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 tsps. per gal. of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.</p>
	Greenbug ( <i>Schizaphis graminum</i> ) Grasshopper	0.4 oz. (1.1 lbs./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 90 S. 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)	1.25 to 1.6 oz. (3.3 to 4.4 lbs./A)	Apply when insects or their damage first appear.	Apply the specified amount of ORTHENE 90 S per 1,000 sq. ft. Use a minimum of 5 gals. water per 1000 sq. ft. Irrigate lightly after application (not more than 1/2 inch). Use the higher rate for severe infestations.

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## SOD FARM TURFGRASS

### GENERAL USE PRECAUTIONS

- 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 3.3 lbs./A (3.0 lbs. ai) ORTHENE 90 S [insecticide in a Water Soluble Packet] to Sod Farms.
- Allow at least 3 days between last application and harvesting of sod.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 90 S PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Sod Farm Turfgrass	Cutworm Fall Armyworm Grasshoppers Greenbug Leafhopper Sod Webworm Southern Armyworm Yellow Striped Armyworm	0.4 to 1.0 oz. (1.1 to 3.3 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 90 S 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 4 lbs./A in a single application.
	Chinch Bugs Mole Cricket (except CA) Spittlebug (except CA)	1.0 to 2.0 oz. (2.75 to 3.3 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of ORTHENE 90 S 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 3.3 lbs./A in a single application.
	Sod Webworm	0.4 to 0.83 oz. (1.1 to 2.2 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.	

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

### GENERAL USE PRECAUTIONS

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.

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE 90 S	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass  Residential, Recreational, and Commercial Turf	Imported Fire Ants and Harvester Ants	<b>Drench Method:</b> Mix 0.83 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 ft. 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 90 S as directed.  Grass in treated areas may be injured.  Do not treat mound more than once per season.

## OUTDOOR AND PERIMETER SPRAY

### GENERAL USE PRECAUTIONS

- Do not apply with a low pressure handwand.
- Do not use on residential turfgrass.

LOCATION	PESTS CONTROLLED	AMOUNT ORTHENE 90 S PER GALLON	TIME OF APPLICATION	RECOMMENDED APPLICATION
Outdoor and Perimeter Area.	Wasp	1.3 oz. (0.08 lb.)	Treat early or late in the day, as wasps are generally less active during these times.	Apply specified amount of ORTHENE 90 S 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 Ants, Harvester Ants, Carpenter Ants and Pharaoh Ants) Crickets Cockroaches Earwigs Pillbugs	1.3 oz. (0.08 lb.)	As the insects appear.	<p>ORTHENE 90S applications do not provide long-term control. Repeat application as needed.</p> <p>Apply specified amount of ORTHENE 90 S per each gallon of water used.</p> <p>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.</p>

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## ORNAMENTAL PLANTS GROWN FOR CUT FLOWER PRODUCTION

### GENERAL USE PRECAUTIONS

- Do not apply more than 8.9 oz (0.56 lb/A) of ORTHENE 90 S [insecticide in a Water Soluble Bag] per 100 gals. of water per application.
- Do not exceed 0.75 lb/A ORTHENE 90 S [insecticide in a Water Soluble Bag] per season.
- Do not make more than one (1) application per crop season.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE 90 S per 100 gals.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Chrysanthemums Daises Gladioli Roses	Aphids Lygus Thrips	0.56 lb (8.9 oz)	As insects begin to appear.	Apply the specified amount of ORTHENE 90 S in 100 gals. of water with a hydraulic sprayer as a full coverage spray. <b>DO NOT EXCEED 17.8 OZ. PER ACRE.</b> Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.



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

**GENERAL USE PRECAUTIONS**

- Do not apply more than 1.1 lbs./A (17.8 oz./A) ORTHENE 90 S [insecticide in a Water Soluble Packet] per 100 gals. of water.
- Do not apply with low pressure handwand.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.5 lb./A and a minimum of 7 days for rates exceeding 0.5 lb./A.
- Not for residential greenhouse use.

PLANTS	INSECTS CONTROLLED	AMOUNT ORTHENE 90 S PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Chrysanthemums	Aphids Thrips	0.56 lb. (8.9 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 90 S in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Do not apply more often than once every 28 days to 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 2 weeks for varietal phytotoxicity. Do not apply to Chrysanthemums with open flowers.

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**GREENHOUSE (Commercial Only) AND OUTDOOR ORNAMENTAL PLANTS, FLORAL CROPS, GROUND COVERS AND FOLIAGE PLANT CROPS (Plants Not Produced for Cut Flower Production) continued**

PLANTS	INSECTS CONTROLLED	AMOUNT ORTHENE 90 S PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Dahlias Daisies Easter Lily Gladioli Gypsophila Pachysandra Pansy Peony Sedum Statice Strawflower Yarrow Zinnia Foliage Plants Anthuriums Cacti Orchids Poinsettia	Aphids	0.28 to 0.56 lb. (4.5 to 8.9 oz.)	As aphids begin to appear.	Apply the specified amount of ORTHENE 90 S in 100 gals. of water with a hydraulic sprayer as a full coverage spray. DO NOT EXCEED 17.8 OZ. OF ORTHENE 90 S PER ACRE. The addition of a wetting agent may be required on difficult to wet foliage
	Mealybugs Thrips Whiteflies	0.56 lb. (8.9 oz.)	As the insects begin to appear. A repeat application, at a 2 week interval, may be necessary for control of mealybugs and whiteflies.	<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 verschoffeltii</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.
	Scales (Crawlers)	0.56 lb. (8.9 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production	Application of ORTHENE 90 S on Poinsettias after bract formation may result in phytotoxicity on certain varieties.

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**GREENHOUSE (Commercial Only) AND OUTDOOR ORNAMENTAL PLANTS, FLORAL CROPS, GROUND COVERS AND FOLIAGE PLANT CROPS (Plants Not Produced for Cut Flower Production) continued**

PLANTS	INSECTS CONTROLLED	AMOUNT ORTHENE 90 S PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Dahlias Daisies Easter Lily Gladioli Gypsophila Pachysandra Pansy Peony Sedum Statice Strawflower Yarrow Zinnia Foliage Plants Anthuriums Cacti Orchids Poinsettia	Sweetpotato Whiteflies (except CA)	0.28 lb. (4.5 oz.)  +  TAME® 2.4 EC Spray 10 2/3 fl. oz. (0.2 lb. ai)	Apply when insects first appear. If a population is well established, make 1 application of the tank mix and follow 5 to 7 days later with TAME 2.4 EC spray alone at 16 fl. oz. per 100 gals. water. See TAME 2.4 EC spray label for instructions.	For sweet potato whitefly control: Apply the specified amount of ORTHENE 90 S (do not exceed 17.8 oz. of product per acre) plus TAME 2.4 EC spray as a tank mix at a volume necessary to obtain good coverage. Follow the TAME 2.4 EC label for specific instructions on the alternation of TAME 2.4 EC plus ORTHENE 90 S and TAME 2.4 EC alone and the rotation instructions to avoid potential resistance.
Roses	Aphids Leafrollers Thrips	0.56 to 0.8 lb. (8.96 to 12.8 oz.)	As leafrollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of ORTHENE 90 S in 100 gals. water with a hydraulic sprayer as a full coverage spray.  Do not apply to Roses with open Flowers.

**SMALL VOLUME SPRAY EQUIPEMNT**

Preparation of ORTHENE 90 S [Insecticide in a Water Soluble Packet] Spray Mix Using a Small Fluid Ounce Measuring Cup		
LABEL RECOMMENDATION ORTHENE 90 S IN 100 GALS. WATER	EQUIVALENT ORTHENE 90 S IN 20 GALS. WATER	EQUIVALENT ORTHENE 90 S IN 1 GAL. WATER (tsp./Gal.)
0.28 lb.	0.9 oz.	0.4 tsp.
0.5 lb.	1.6 oz.	0.83 tsp.
0.8 lb.	2.5 oz.	1.25 tsp.
1.1 lbs.	3.5 oz.	1.7 tsp.

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**NON CROP AREAS**  
**[ANT MOUND TREATMENT]**

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CROP	PESTS CONTROLLED	AMOUNT ORTHENE 90S PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas	Ants (including Imported Fire Ants and Harvester Ants)	<b>Mound Treatment –</b>  <b>Drench Method:</b> Mix 0.83 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 ft. 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.

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## STORAGE AND DISPOSAL

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

**OR**

**[FOR WATER SOLUBLE PACKAGING ONLY]**

Do not reuse the outer bag. Dispose of outer bag 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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AMMO® - Reg. TM of FMC Corporation for cypermethrin insecticide.  
ASANA® - Reg. TM of E. I. du Pont 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.  
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SCOUT X-TRA® - Reg. TM of Hoechst-Roussel Agri-Vet Co. for tralomethrin pyrethroid insecticide.  
TAME® - Reg. TM of Valent U.S.A. Corporation

Manufactured for:

**Valent U.S.A. Corporation**

P.O. Box 8025

Walnut Creek CA 94596 - 8025

[www.valent.com](http://www.valent.com)

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[Sub-label 2]

**Orthene 90 S**

**[SOLUBLE POWDER INSECTICIDE FOR HOPPER BOX AND ANT TREATMENT USES]**



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# ORTHENE® 90 S

[SOLUBLE POWDER INSECTICIDE FOR HOPPER BOX AND ANT TREATMENT USES]

Active Ingredient	By Wt.
*Acephate .....	90%
Other Ingredients .....	10%
Total .....	100%

\*O,S-Dimethyl acetylphosphoramidothioate

KEEP OUT OF REACH OF CHILDREN

## CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

Formulation for Eggs/DEADHATCH®

NET WEIGHT \_\_\_\_\_

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

## CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin and clothing.

### FIRST AID

**Acephate is an organophosphate, cholinesterase inhibitor.**

- If swallowed:**
- Call a poison control center or doctor immediately for treatment advice.
  - Have person sip a glass of water if able to swallow.
  - Do not induce vomiting unless told to do so by the poison control center or doctor.
  - Do not give anything by mouth to an unconscious person.
- If in eyes:**
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
  - Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
  - Call a poison control center or doctor for treatment advice.
- If on skin or clothing:**
- Take off contaminated clothing.
  - Rinse skin immediately with plenty of water for 15-20 minutes.
  - Call a poison control center or doctor for treatment advice.
- If inhaled:**
- Move person to fresh air.
  - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
  - Call a poison control center or doctor for further treatment advice.

### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

### 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.

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some materials that are chemical-resistant to this product are listed below. 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 such as Butyl rubber  $\geq$  14 mils, Nitrile rubber  $\geq$  14 mils and Neoprene  $\geq$  14 mils and shoes plus socks.

**In addition, Mixers and Loaders supporting hopper box seed treatments must wear:** a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter.



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Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. As soon as possible, wash thoroughly and change into clean clothing.

### **USER SAFETY REQUIREMENTS**

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.

### **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) permit 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. Exposed seed may be hazardous to birds and other wildlife. Dispose of all excess seed and seed packaging by burial away from bodies water.

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 actively 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, chemical resistant gloves made of any waterproof material and 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.

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**DISCLAIMER, RISKS OF USING THIS PRODUCT,  
LIMITED WARRANTY  
AND LIMITATION OF LIABILITY**

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

**RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These 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 of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer 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 only 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 as described above. EXCEPT AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

**LIMITATION OF LIABILITY**

To the fullest extent allowed by law, Valent or Seller is not liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. TO THE FULLEST EXTENT ALLOWED BY LAW, THE EXCLUSIVE REMEDY OF THE 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 THE PRODUCT.

**PROMPT NOTICE OF CLAIM**

Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

If Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

**NO AMENDMENTS**

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

**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.

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## GENERAL INFORMATION

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ORTHENE 90 S a soluble powder is an insecticide for control of pests on selected agricultural crops and in certain non-crop areas. The active ingredient in ORTHENE 90 S is acephate, a water-soluble insecticide readily absorbed by plant roots and foliage to give systemic control of feeding insects. Insect pests are generally controlled more effectively by ORTHENE 90 S through ingestion than by contact. Application of ORTHENE 90 S to maintain control should be repeated only as directed.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR INSECT CONTROL, CROP INJURY AND/OR ILLEGAL RESIDUES.

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## COTTON

### [Soluble Powder Hopper Box Use]

#### 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 4.4 lbs/A (4 lbs. ai) ORTHENE 90 S per crop cycle. This includes all foliar spray, liquid in-furrow application and seed treatment uses.
- ORTHENE 90 S cotton seed hopper box treatment is not permitted in Arizona, California and the Blacklands of Texas.

#### COTTON – Directions for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 90 S PER ACRE	REMARKS	DAYS TO HARVEST
Cotton Seed Hopper Box  At-Planting Application	Black (Greasy) Cutworm Cotton Aphids Thrips (including Western Flower Thrips)	2.5 to 3.25 oz.	<p>Add dry ORTHENE 90 S to seed in the planter box to achieve an application rate of 2.5 to 3.25 oz./A</p> <p>Even coverage of seed is required for acceptable insect control. Plants grown from improperly treated seed may not exhibit insect control. To obtain even coverage, fill planter box 1/2 full of seed, add 1/2 of required ORTHENE 90 S and mix thoroughly. Add remainder of seed and ORTHENE 90 S to the hopper box and thoroughly mix.</p> <p>Improved distribution of ORTHENE 90 S on seed can be achieved by premixing both in a separate container and then transferring treated seed to hopper box.</p> <p>Use of ORTHENE 90 S with air planters is not recommended since loss of product will occur.</p>	At-Planting Application

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## PEANUTS

### [Soluble Powder Hopper Box Use]

#### GENERAL 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 4.4 lbs./A (4.0 lbs. ai) ORTHENE 90 S per crop cycle. This includes the use of ORTHENE 90 S on peanuts as a foliar spray in addition to the peanut planter box seed treatment use.

#### PEANUTS – Recommendation for Use

CROP	PESTS CONTROLLED	RATE OF ORTHENE 90S PER 100 LBS. OF PEANUT SEED	FURTHER USE INSTRUCTIONS
Planter Box Seed Treatment Application – Hopper Box	Thrips	3.5 oz.  Do not apply more than 3.5 oz. per acre.	<p>Apply ORTHENE 90 S at a rate of 3.5 oz. per 100 lbs. of peanut seed in the planter box as a dry powder. Even coverage of seed is required for acceptable insect control.</p> <p>MIXING: The following procedure for application of ORTHENE 90 S to peanut seed must be followed to ensure complete and adequate coverage:</p> <p>STEP 1: Fill planter box 1/3 full of seed. Apply 1/3 of total amount of ORTHENE 90 S evenly over the surface of the peanuts.</p> <p>STEP 2: Fill planter box 2/3 full of seed. Apply 1/3 of total amount of ORTHENE 90 S evenly over the surface of the peanuts.</p> <p>STEP 3: Fill planter box with remaining seed. Apply 1/3 of total required amount of ORTHENE 90 S evenly over the surface of the peanuts.</p> <p>DO NOT attempt to mix ORTHENE 90 S with the seed peanuts by stirring or other mechanical agitation. Such action will result in unacceptable damage to seed prior to planting.</p> <p>Do not use treated seed for food or feed.</p>

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**TOBACCO**  
**(Except CA)**  
**[Soluble Powder Ant Use]**

**GENERAL USE PRECAUTIONS**

- Do not apply more than 4.4 lbs./A (4 lbs. ai) ORTHENE 90 S per crop cycle. This includes the use of ORTHENE 90 S in transplant water, plant bed, soil float bed (greenhouse) and foliar applications.
- Treat a maximum of 13 mounds per acre.
- Do not treat more than once per season.

**TOBACCO (Except CA) – Directions for Use**

SOIL MOUND TREATMENT				DAYS TO HARVEST
DRY METHOD	Ants (including Imported Fire Ants and Harvester Ants)	1 to 2 tsp.	Evenly distribute over the mound.  Apply in the early morning or late afternoon, when the ants are most active, for best results.  Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.	3

**NON CROP AREAS**  
**[Soluble Powder Ant Use]**

CROP	PESTS CONTROLLED	AMOUNT ORTHENE 90S PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas	Ants (including Imported Fire Ants and Harvester Ants)	<b>Mound Treatment – Dry Method:</b> Evenly distribute 1 to 2 tsps. over 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.

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## STORAGE AND DISPOSAL

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

**OR**

**[FOR WATER SOLUBLE PACKAGING ONLY]**

Do not reuse the outer bag. Dispose of outer bag 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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AMMO® - Reg. TM of FMC Corporation for cypermethrin insecticide.  
ASANA® - Reg. TM of E. I. du Pont 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 Syngenta for lambda-cyhalothrin insecticide.  
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SCOUT X-TRA® - Reg. TM of Hoechst-Roussel Agri-Vet Co. for tralomethrin pyrethroid insecticide.  
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Manufactured for:

**Valent U.S.A. Corporation**

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www.valent.com

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