

Orthene®

TURF, TREE & ORNAMENTAL 97 SPRAY

(Soluble Insecticide)

ACTIVE INGREDIENT:	By Weight
*Acephate.....	97.4%
INERT INGREDIENTS:	2.6%
TOTAL	100.0%

*O,S-Dimethyl acetylphosphoramidothioate

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

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
Acephate is an organophosphate, cholinesterase inhibitor.	
If swallowed:	<ul style="list-style-type: none"> 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> 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.

EMERGENCY INFORMATION

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
 FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:
 Transportation: CHEMTREC.....1-800-424-9300
 Other: AMVAC.....1-323-264-3910

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.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION
 Harmful if swallowed.

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 ≥ 14 mils, Nitrile rubber ≥ 14 mils and Neoprene ≥ 14 mils and shoes plus socks.

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

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

The use of human flaggers is prohibited.

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

USER SAFETY RECOMMENDATION

Users should:

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

ENVIRONMENTAL HAZARDS

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

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

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

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

NET CONTENTS:
AS MARKED ON CONTAINER



4100 E. Washington Blvd.
 Los Angeles, CA 90023, USA
 1-323-264-3910 • www.amvac-chemical.com

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.

TANK MIXES

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

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

GENERAL USE RESTRICTIONS

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

CHEMIGATION

Do not apply by chemigation to any crop using any type of irrigation system.

GENERAL INFORMATION

MIXING INSTRUCTIONS

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

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

SPRAY DRIFT MANAGEMENT

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

- All aerial, ground and air-assisted/airblast application equipment must be properly maintained and calibrated using water as carrier. Do not apply this product as an ultralow (ULV) spray, or in any carrier other than water.
- Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
- Do not apply at wind speeds greater than 10 mph at the application site.
- Make applications when wind velocity favors on-target product deposition (approximately 3 to 10 mph).
- Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage.
- For aerial applications, do not apply at heights greater than 10 feet (consistent with flight safety).
- For airblast applications, direct spray above foliage and turn off outward pointing nozzles at row ends and outer rows.
- 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 feet.

SMALL VOLUME SPRAY EQUIPMENT

Preparation of ORTHENE Turf, Tree and Ornamental 97 Spray Mix Using a Small Fluid Ounce Measuring Cup

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

NON-BEARING CITRUS

GENERAL USE PRECAUTIONS

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

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

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

NURSERY STOCK

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

GENERAL USE PRECAUTIONS

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

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

NON-CROP AREAS

CROP	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas (field borders, fencerows, roadsides, ditchbanks and borrow pits) Do not use on Turf	Grasshopper	1/4 lb. (4 oz.)	For early to mid-season application to Grasshopper in field borders, fencerows, roadsides, ditchbanks, and borrow pits. Apply in 1 to 5 gals. of water by air, or in 10 to 20 gals. of water with ground equipment. Use the higher volumes when spraying heavier foliage. Do not graze or feed vegetation cut from treated areas.
Non-Crop Areas	Ants (excluding carpenter and pharaoh)	Drench Method: Mix 3/4 oz in 5 gals of water. Apply 1 gal of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured. Do not treat mound more than once per season.

CONTAINER GROWN NURSERY STOCK

GENERAL USE PRECAUTIONS

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

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

ORNAMENTAL TREES AND SHRUBS

GENERAL USE PRECAUTIONS

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

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

continued

ORNAMENTAL TREES AND SHRUBS continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Trees and Shrubs (except Flowering Crabapple and Douglas Fir, See below)	Ponderosa Pine Needle Miner	1/2 lb. (8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Grasshopper	1/2 lb. (8 oz.)	As the Grasshopper begin to appear.	
	California Oakworm Cankerworm (Spring and Fall)	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	3/4 lb. (12 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent. Repeat applications will be required for subsequent generations.	
	Root Weevil Adults	3/4 lb. (12 oz.)	Apply when first feeding damage occurs. Repeat applications, at 4 week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bug Budworm Leafhopper Sawflies	3/4 lb. (12 oz.)	As the insects begin to appear.	
	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetle begin to appear. Repeat applications, at 2 week intervals, may be necessary.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Elm Leaf Beetle (larvae)	1 lb. (16 oz.)	As the larvae begin to appear. ORTHENE Turf, Tree & Ornamental 97 SPRAY will not prevent Elm Leaf Beetle eggs from hatching.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
Douglas Fir (Christmas Trees)	Douglas Fir Needle Midge	1/2 lb. (8 oz.) (1/2 lb./A)	Application should be made no more than 2 weeks prior to bud burst. For additional pest management information, consult your County Extension Service.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in not less than 2 gals. of spray per acre by air or in 100 gals. of spray per acre by ground. Do not make more than 1 application per season.

ORNAMENTAL TREES AND SHRUBS continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Flowering Crabapples	Aphid Leafroller Tent Caterpillar	1/4 lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. of water with a hydraulic sprayer. Do not apply more often than 3 times in a growing season at a 4 week interval. Caution: Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.
Crape Myrtle	Aphid	2 to 3 Level Tbsp. (0.6 to 0.9 oz.) per 1 Tbsp. of water.	As Aphid begin to appear.	Make a paint on slurry by mixing the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY with 1 Tbsp. of water. Remove the loose bark from the trunk areas to be treated. Completely paint a band around each trunk to a width twice its diameter. Application should be made to trunks within a zone 6 to 12 inches above the ground and below the point where branching begins. For multi-trunk plants be certain to treat all trunks. For either single or multi-trunk plants, application should be made as low as possible within the recommended treatment zone.

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 1/8 lbs. (4.0 lbs. ai/A) of ORTHENE Turf, Tree & Ornamental 97 SPRAY to Golf Courses per single application.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb./A and a minimum of 7 days for rates exceeding 1/2 lb/A.

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER ACRE	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Golf Course Turfgrass	Cutworm Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 0.9 oz. (1 to 2 1/2 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.

continued

GOLF COURSE TURFGRASS continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER ACRE	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Golf Course Turfgrass	Chinch Bug	0.9 to 1.5 oz. (2 1/2 to 4 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage. Repeat application may be necessary. Do not repeat at more than 1 week intervals. As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary. As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate. Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application. The use of a lemon fragrance substance in the spray mix may enhance control by acting as a flushing agent and thus provide increased mole cricket contact with the ORTHENE Turf, Tree & Ornamental 97 SPRAY. The following lemon scented products have been shown to be effective flushing agents: Lemon Joy, Lemon Palmolive, and Mighty Myrt Products Manufacture Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 tsp. per gal. of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.
	Sod Webworm	0.4 to 0.8 oz. (1 to 2 lbs./A)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations.	
	Leafhopper	0.8 oz. (2 lbs./A)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	
	Mole Cricket (except CA) Spittlebug (except CA)	0.8 to 1.4 oz. (2 to 3.9 lbs./A)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	

continued

GOLF COURSE TURFGRASS continued

PLANTS	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER ACRE	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Golf Course Turfgrass	Greenbug (<i>Schizaphis graminum</i>) Grasshopper	0.4 oz. (1.0 lb./A)	Apply when insects or their damage first appears. Repeat as necessary. Application is not to be repeated at more than 1 week intervals.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY. 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. Apply the specified Amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY per 1,000 sq. ft. Use a minimum of 5 gals. of water per 1,000 sq. ft. Irrigate lightly after application (not more than 1/2 inch). Use the higher rate for severe infestations.
	Black Turfgrass Ataenius (except CA)	1.1 to 1.5 oz (3 to 4 lbs./A)	Apply when insects or their damage first appear.	

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 3.1 lbs./A (3.0 lbs. ai/A) ORTHENE Turf, Tree & Ornamental 97 Spray to Sod Farm Turfgrass in a single application.
- User must allow at least 3 days between last application and harvesting of sod.

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

MOUND TREATMENT OF FIRE ANTS AND HARVESTER ANTS IN TURFGRASS

GENERAL USE PRECAUTIONS

- DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.
- DO NOT FEED TREATED GRASS TO LIVESTOCK.

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

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

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

ORNAMENTAL PLANTS GROWN FOR CUT FLOWER PRODUCTION

GENERAL USE PRECAUTIONS

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

PLANT	PESTS CONTROLLED	AMOUNT ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY PER 100 GALS.	TIME OF APPLICATION	FURTHER USE INSTRUCTIONS
Chrysanthemums Daisies Gladioli Roses	Aphid Lygus Thrips	1/2 lb. (8 oz.)	As insects begin to appear. Repeat applications may be necessary.	Apply the specified amount of ORTHENE Turf, Tree & Ornamental 97 SPRAY in 100 gals. of water with a hydraulic sprayer as a full coverage spray. DO NOT EXCEED 12 OZ. PER ACRE. Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.

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

GENERAL USE PRECAUTIONS

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

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

continued

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

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

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Keep pesticide in original container.
Do not put concentrate or dilute into food or drink containers.
Store in cool, dry place. Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1-323-264-3910

PESTICIDE DISPOSAL

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

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.

LIMITED WARRANTY AND DISCLAIMER

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

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

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

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

ORTHENE is a registered trademark of OMS Investments, Inc.
TAME® is a registered trademark of Valent U.S.A. Corporation

AMVAC Chemical Corporation
4100 E. Washington Boulevard
Los Angeles, CA 90023 U.S.A.
1-323-264-3910
www.amvac-chemical.com



4100 E. Washington Blvd.
Los Angeles, CA 90023, USA
1-323-264-3910 • www.amvac-chemical.com