ORTHENE® 75% Soluble Powder
SYSTEMIC INSECTICIDE

GROUP 1B INSECTICIDE

CAUTION

POISON

READ LABEL AND ATTACHED BOOKLET BEFORE USING

AGRICULTURAL

NOT FOR INDOOR RESIDENTIAL USE

GUARANTEE:
*Acephate..................................................................................................................75%
Warning, contains the allergen sulfite.

REGISTRATION NO. 14225

PEST CONTROL PRODUCTS ACT

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LifeScience Corporation for international agricultural use.

NET CONTENTS: 1.5 kg
For product information call: 1-866-761-9397
Arysta LifeScience North America Corporation
15401 Weston Parkway, Suite 150
Cary, NC 27513

Canadian Agent:
Zeamax Agriculture
P.O. Box 242
Osgoode, ON K0A 2W0
PRECAUTIONS
Harmful if swallowed. May be irritating to the eyes. Do not breathe spray mist. Avoid eye or skin contact with spray mist. KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL. Do not contaminate lakes, streams or ponds. Avoid contamination of feed and foodstuffs. 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. Store in Cool, Dry Place. Protect from Excessive Heat.

For good agricultural practice, the use of chemical resistant gloves, face shield and coveralls during mixing, loading, cleanup, and repair activities is recommended. The wearing of coveralls during application is recommended.

If this pest control product is to be used on a commodity that may be exported to the U. S. and you require information on acceptable residue levels in the U. S., contact 1-866-375-4648 or www.cropro.org/

ENVIRONMENTAL HAZARDS
This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging in the treatment area. Warn beekeepers to protect bees from treated areas for one week after treatment.

This product is toxic to birds and wild mammals. Applications may adversely affect birds and wildlife visiting the treatment area.

This product is toxic to aquatic invertebrates and marine/estuarine organisms. Runoff from treatment areas may be hazardous to aquatic organisms in neighboring water bodies. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply where runoff is likely to occur. Do not apply when weather conditions favour drift from treatment areas.

This product has the potential to leach through soils to ground water. It is recommended that this product not be used on coarse textured soils or in areas where the water table may be high. This product should not be applied if rainfall is expected within 48 hours after application and treatment areas should not be irrigated for at least 48 hours after application to minimize the potential for leaching and surface runoff.

A buffer zone of 10 metres from surface bodies of water, including rivers, lakes, streams and ponds is recommended to protect neighboring aquatic habitats from spray drift.
FIRST AID
If swallowed, induce vomiting and obtain medical attention or call a poison control centre IMMEDIATELY. In case of contact with skin, wash with soap and water. If in eyes, flush with water. See a physician or contact a poison control centre IMMEDIATELY if eye irritation persists. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION
ORTHENE is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine, but should NOT be used alone.

DECONTAMINATION
NOTE: Hydrated limes, Hypochlorite oxidants, and other alkaline material should NOT be used in clean up procedures. Spills of POWDERS should be scooped into disposable containers. If ORTHENE LIQUIDS are spilled, spread a heavy clay absorbent over spill. Shovel material into disposable container.

DISPOSAL
Triple or pressure rinse the empty container. Add the rinsings to the spray mixture in the tank.

Follow provincial instructions for any required additional cleaning of the container prior to its disposal.

Make the empty container unsuitable for further use.

Dispose of the container in accordance with provincial requirements.

For further information on the disposal of unused, unwanted product contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of spills and for clean-up of spills.

NOTICE TO USER
This control product is to be used only in accordance with the directions on this label. It is an offense under the Pest Control Products Act to use a control product under unsafe conditions.

* Acephate (O,S-Dimethyl acetylphosphoramidothioate)**
** Canadian Patent No. 926872
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Canadian Agent:
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READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL CAUTIONS, WARNINGS AND DIRECTIONS.
KEEP PESTICIDE IN ORIGINAL CONTAINER. DO NOT PUT CONCENTRATE OR DILUTE INTO FOOD OR DRINK CONTAINERS.

DIRECTIONS FOR USE ON CROPS
Apply with ground application equipment only. Not to be applied by aerial application equipment.

RESISTANCE MANAGEMENT
For resistance management, please note that ORTHENE 75% SOLUBLE POWDER contains a Group 1B insecticide. Any insect population may contain individuals naturally resistant to ORTHENE 75% SOLUBLE POWDER and other Group 1B insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance:
• Where possible, rotate the use of ORTHENE 75% SOLUBLE POWDER or other Group 1B insecticides with different groups that control the same pests in a field.
• Use tank mixtures with insecticides from a different group when such use is permitted.
• Insecticide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
• Monitor treated pest population for resistance development.
• Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
• For further information or to report suspected resistance contact Arysta LifeScience North America Corporation at 1-866-761-9397.

CABBAGE, BRUSSELS SPROUTS, CAULIFLOWER, HEAD LETTUCE
(Crisphead Type Only): Cabbage looper, Imported cabbageworm, diamondback moth larvae, Green peach aphid. Apply 750 to 1100 gm per hectare in 225 to 1650 litres of water using conventional ground application equipment. Use the high rate only when heavy pest infestations are present. Do not apply to Head Lettuce within 7 days of harvest. Do not apply to Cole crops within 28 days of harvest. Do not feed trimmings to livestock or allow animals to graze on treated areas. Do not apply more than 4 applications per season.

CELERY: Green peach aphid, Tarnished plant bug. Apply 750 to 1100 g/ha in 225 to 1650 L of water. Apply with ground equipment only. Apply when insects
reach economic threshold levels. Do not apply more than 4 applications per season. Do not re-enter sprayed areas until the spray deposit has dried. Do not apply within 21 days of harvest.

**CORN (SEED AND SWEET):** European corn borer. Apply 750 to 1100 gm per hectare. Apply in 220 to 1000 litres of spray mix using conventional ground application equipment. Use the high rate only when heavy pest infestations are present. For European corn borer, apply when egg mass count indicates an economically damaging population. Do not apply to fresh corn within 21 days of harvest. Do not feed corn fodder or forage from treated crop to livestock. Do not apply more than 4 applications per season.

**POTATO:** Green peach aphid, Potato aphid, Potato flea beetle, Potato leafhopper, Tarnished plant bug. Apply 750 to 1100 gm in 225 to 1650 litres of water per hectare using conventional ground application equipment. Use the high rate only when heavy pest infestations are present. Begin applications at first sign of insects and repeat on a 7 to 10 day schedule as necessary. Do not apply more than 4 applications per season. Do not apply within 21 days of harvest.

**SASKATOON BERRIES** (Soil Injection Application): Provides control of Woolly elm aphid and Woolly apple aphid in non-bearing and bearing Saskatoon berry plants. Apply once per year in mid July or early August after harvest is complete. Mix 0.85 grams per litre of water. Apply 2 litres of this solution per plant. The solution is injected with a probe; 3 to 5 injections for each plant to a depth of 12 cm. The injection should be made 15 cm from the stem of the plant. A rate of 1.7 grams product per plant and a planting density of 2,000 plants per hectare is a rate of 3.4 kg/ha. Do not apply within 11 months of harvest. Do not apply more than 1 application per year. DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 3 days.

**SWEET PEPPERS (Bell Type):** Green peach aphids, Pepper maggot. Apply 750 gm per hectare. European corn borer - Apply 1100 gm per hectare. Apply in 225 to 1650 litres of water with conventional ground application equipment. Begin applications when eggs or insects appear. Maintain a 7 to 10 day spray schedule until insects have been reduced below economic levels. Do not apply within 7 days of harvest. Do not apply more than 4 applications per season.

**TOBACCO (Flue-cured):** Tomato hornworm, Flea beetle and Green peach aphid. Apply 750 to 1100 grams of product/ha in at least 100 litres of water using conventional ground application equipment. Apply on a 7-day schedule or as needed. Use 1.1 kg/ha for control of established populations. Do not apply within 3 days of harvest. Do not re-enter sprayed areas until the spray deposit has dried. Darksided cutworm (before planting). Treat either the rye or wheat cover crop using 750 g/ha or the soil using 1.5 kg/ha in at least 200 L of water per hectare.
Applications are most effective when applied late afternoon or early evening when temperatures are 13°C or higher. Apply ORTHENE soon after the cutworms have hatched (mid to late April, 4-5 days before plowing). For control of Darksided cutworm (after planting), apply 1.5 kg/ha in sufficient water to give good coverage of seedlings. Apply ORTHENE in the late afternoon or evening.

TOBACCO (Transplant Water Application): Provides control of Darksided cutworms, Potato flea beetles, Root maggots, Green peach aphids and Thrips for approximately 2 to 3 weeks after transplanting. Apply 1.1 to 1.7 kg in a minimum of 1200 litres of transplant water per hectare. Do not apply more than 1.7 kg per hectare as a transplant water application as some phytotoxicity may occur. Provides control of Wireworm. Apply 1.1 kg in 1200 L of transplant water per hectare. Make one application per season at transplanting.

CRANBERRIES: Black-headed fireworm. Apply with ground application equipment only. Not to be applied by aerial application equipment. Apply one prebloom application to control the first generation of black headed fireworm where field scouting indicates insect numbers warrant treatment. Apply 750 g/ha in 225 to 1650 L of water using conventional ground equipment. A second application of 750 g/ha may be made post bloom if insect numbers indicate it is required.

TOMATO (Transplant Water Application): For control of early season Cutworms, Potato Flea Beetle, Root Maggots, Wireworms, Aphids, Thrips and Colorado Potato Beetle for approximately 2 to 3 weeks after transplanting. Apply 1.2 kg per hectare of ORTHENE 75 SP in 2000 L of water per hectare. This rate is based on 14,000 plants per hectare.

DIRECTIONS FOR USE ON TREES AND ORNAMENTALS
ORTHENE 75SP effectively controls many insects that attack flowers, ornamentals, shrubs, trees and roses (outdoors and in the greenhouse). ORTHENE 75SP controls insects that are present and remains effective for an extended period of time because it is systematically absorbed by plants. Mix thoroughly and spray entire plant covering both sides of foliage. When using a HYDRAULIC SPRAYER mix 850 g per 1000 litres of water. For MIST BLOWERS mix 1.75 kg per 1000 litres of water.

Spray when insects are present or feeding injury is first noticed. Repeat if re-infestation occurs.

Aphids (open feeders): Arborvitae, Ash, Aspen, Aster, Azalea, Barberry, Birch, Bloodleaf (Iresine), Boxwood, Calendula, Cotoneaster, Deutzia, Dusty Miller, Euonymus, Fir, Flowering Almond, Flowering Plum, Flowering Quince, Gazania, Hawthorn, Hibiscus, Hydrangea, Ivy, Ligustrum, Lilac, Linden, Mahonia, Maple, Mock Orange, Nandina, Oak, Photinia, Pittosporum, Poplar, Primrose,

**Armyworms** (Fall, Beet and Yellow-striped): Aster, Calendula, Chinese Elm, Dahlia, Petunia, Rose, Snapdragon.

**Bagworm**: Arborvitae, Cedar, Cypress, Juniper, Linden, Maple, Pine, Sweet Gum, Sycamore, Willow.

**Budworms** (Tobacco): Calendula, Geranium, Petunia, Snapdragon.

**Cankerworms** (Spring and Fall): Birch, Cockspur Hawthorn, Hawthorn, Linden, Maple, Oak, Silver Maple.

**Casebearers**: Slippery Elm, Sycamore.

**Fall Webworm**: Ash, Alder, Birch, Linden, Oak, Poplar, Sycamore, Willow.

**Gypsy Moth**: Ash, Birch, Cedar, Hawthorn, Hemlock, Maple, Oak, Pine, Poplar, Spruce, Willow.

**Lacebugs**: Ash, Azalea, Cotoneaster, Oak, Pyracantha, Rhododendron, Sycamore, Zinnia. **Leafhoppers** (Potato): Boston Ivy, Calendula, Dahlia, Maple.

**Leafbeetles, Larvae** (Elm and Willow): Elm (Chinese or Siberian), Willow.

**Leafminers**: Alder, Aster, Birch, Deutzia, Holly, Lilac, Locust, Marigold, Oak, Spruce, Zinnia.

**Leafrollers** (Oblique-banded): Flowering Cherry, Holly, Oak, Rose, Spirea, Staghorn Sumac, Sycamore.

**Meadow Spittlebug**: Juniper, Rose.

**Nantucket Pine Tip Moth**: Pine.

**Oakleaf Shredder**: White and Red Oak.

**Psyllids**: Alder, Hackberry, Holly, Sumac, Willow.

**Pear Slug**: Shade trees, Ornamentals, Shelterbelts (such as Cotoneaster, Willow, Mountain Ash and Pincherry).

**Rose Midge**: Rose.
**Sawflies (open feeders):** (Dusky Birch, Blackheaded Ash, Redheaded Pine and European Pine, Yellow-headed Spruce): Ash, Birch, Pine, Larches, Spruces, Willows

**Sunflower Moth:** Marigolds.

**Tent Caterpillars** (Eastern and Forest): Ash, Birch, Flowering Cherry, Flowering Plum, Hawthorn, Maple, Oak, Poplar, Willow.

**Tentmaker** (Poplar): Poplar, Willow.

**Tussock Moth:** Ash, Birch, Elm (Chinese or Siberian), Fir, Holly, Linden, Maple, Oak, Pine, Poplar, Rose, Spruce, Sycamore, Wild Cherry, Willow.

**Yellow-necked Caterpillar:** Birch, Linden, Oak, Pyracantha.

To control the following hard-to-kill pests, spray 2-3 times about 7-10 days apart. Additional sprays may be needed if plants become re-infested.

**Flower Thrips:** Alyssum, Aster, Calendula, Daisy, Daylily, Gladiolus, Marigold, Petunia, Rose, Salvia, Snapdragon, Yucca, Zinnia.

**Gadiolus Thrips:** Gladiolus.

**Greenhouse Whitefly:** Azalea, Barberry, Camellia, Lantana, Ligustrum, Mahonia, Salvia, Viburnum, Zinnia.

**Mealybugs:** Azalea, Camellia, Ivy, Wisteria, Yew (Taxus).


**Two-Spotted Spider Mites:** Cypress, Dahlia, Daylily, Hydrangea, Marigold, Pachysandre, Phlox, Primrose, Rose, Viburnum.

**Other Spider Mites:** Arborvitaes, Azalea, Bottlebrush, Camellia, Cypress, Fir, Hemlock, Holly, Honeylocust, Juniper, Oak, Pine, Rose, Spruce.

**GREENHOUSE USE ON ROSES:** Omnivorous Leafroller, Aphids, and Whitefly, Rose Midge and Flower Thrips.

Use 850 g per 1000 litres of water with a hydraulic sprayer. Spray to wet foliage completely.
CHRISTMAS TREE PLANTATIONS, FARM WOODLOTS, TREE NURSERIES, SHELTER BELTS, RIGHT OF WAYS, AND MUNICIPAL PARKS (excluding National & Provincial Parks).

For control of insects listed use 850 g per 1000 litres of water in Hydraulic sprayers and 1.75 kg per 1000 litres of water for Mistblower sprayers.

Consult Canadian Forestry Service office or Provincial Forestry authority for information on timing of sprays and method of application.

NOTE: Apply this product only as specified on this label. Do not apply to American Elm, Flowering Crabapple, Sugar Maple, Cottonwood, Redbud and Weigelia, as foliage injury may occur. Before treating rare or unusual varieties, it is advisable to test it on a few plants before spraying large numbers. Clean sprayer after use by flushing with water. Do not use household bleach or cleaning agent.

PRECAUTIONS
Harmful if swallowed. May be irritating to the eyes. Do not breathe spray mist. Avoid eye or skin contact with spray mist. KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL. Do not contaminate lakes, streams or ponds. Avoid contamination of feed and foodstuffs. 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. Store in Cool, Dry Place. Protect from Excessive Heat.

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is likely to occur. Do not apply when weather conditions favour drift from treatment areas.

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A buffer zone of 10 metres from surface bodies of water, including rivers, lakes, streams and ponds is recommended to protect neighboring aquatic habitats from spray drift.

**FIRST AID**

**If swallowed**, induce vomiting and obtain medical attention or call a poison control centre IMMEDIATELY. **In case of contact with skin**, wash with soap and water. **If in eyes**, flush with water. See a physician or contact a poison control centre IMMEDIATELY if eye irritation persists. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**TOXICOLOGICAL INFORMATION**

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**DECONTAMINATION**

NOTE: Hydrated limes, Hypochlorite oxidants, and other alkaline material should NOT be used in clean up procedures. Spills of POWDERS should be scooped into disposable containers. If ORTHENE LIQUIDS are spilled, spread a heavy clay absorbent over spill. Shovel material into disposable container.

**DISPOSAL**

Triple or pressure rinse the empty container. Add the rinsings to the spray mixture in the tank.

Follow provincial instructions for any required additional cleaning of the container prior to its disposal.

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** Canadian Patent No. 926872
This label transcript service is offered by the Pest Management Regulatory Agency to provide efficient searching for label information. This service and this information do not replace the official hard-copy label. The PMRA does not provide any guarantee or assurance that the information obtained through this service is accurate, current or correct, and is therefore not liable for any loss resulting, directly or indirectly, from reliance upon this service.