



Zylam[®] Liquid

SYSTEMIC INSECTICIDE

For control of listed chewing and sucking insects infesting landscape ornamentals.

For outdoor use only

ACTIVE INGREDIENT:

Dinotefuran*, [N-methyl-N'-nitro-N''-(tetrahydro-3-furanyl)methyl]guanidine] 10%

OTHER INGREDIENTS: 90%

TOTAL 100%

*0.88 pounds Dinotefuran per gallon.

KEEP OUT OF REACH OF CHILDREN CAUTION



**READ THE ENTIRE LABEL FIRST.
OBSERVE ALL PRECAUTIONS AND
FOLLOW DIRECTIONS CAREFULLY.**

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks

User Safety Requirements

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

User Safety Recommendations

Users should:

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

First Aid

If swallowed:

- Call poison control center or doctor immediately for treatment advice.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Have person sip a glass of water if able to swallow.
- 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 further treatment advice.

If on skin or on clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for further treatment advice.

(cont. on next column)

First Aid (cont.)

If inhaled:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call 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 1-877-800-5556 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to shrimp. 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 apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not dispose equipment washwaters or rinsate into a natural drain or water body.

This compound is toxic to honey bees. The persistence of residues and potential residual toxicity of Dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honey bee larvae and the eventual instability of the hive.

This product is toxic to bees exposed to treatment for more than 38 hours following treatment. Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.

Dinotefuran and its degradate, MNG have the properties and characteristics associated with chemicals detected in ground water. The high water solubility of dinotefuran, and its degradate, MNG, coupled with its very high mobility, and resistance to biodegradation indicates that this compound has a strong potential to leach to the subsurface under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Periodic monitoring of shallow groundwater in the use area is recommended.

Physical or Chemical Hazards

Do not use, pour, spill or store near heat or open flame.

Spray Drift Advisory

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or which may be rendered for sale, use, or consumption.

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.

1. Product Information

Failure to follow directions and precautions on this label may result in plant injury, poor insect control, and/or unacceptable residues.

Zylam[®] Liquid Systemic Insecticide is a selective insecticide which should have minimal impact on beneficial arthropods and its use is compatible with integrated pest management (IPM) programs.

Zylam Liquid Systemic Insecticide is taken up into foliage after application. However, thorough spray coverage is essential for optimal performance. Apply Zylam Liquid Systemic Insecticide in sufficient water to ensure good coverage.

Zylam Liquid Systemic Insecticide may aid in the suppression of some pests. Suppression can mean either inconsistent control (good to poor), or consistent control at a level below that generally considered acceptable for commercial control.

Application to Ornamental plants:

Zylam Liquid Systemic Insecticide can be applied as a soil drench, soil injection, bark banding, foliar spray or broadcast spray treatment for insect control in landscape ornamental plants.

Zylam Liquid Systemic Insecticide is a systemic product and will be taken up by the root system and foliage and translocated upward throughout the plant. When applied as a foliar spray, the product offers translaminar and locally systemic control of foliar pests.

For outdoor and landscape ornamentals, broadcast applications cannot exceed a total of 39.0 fl. oz. of Zylam Liquid Systemic Insecticide per acre per year as foliar sprays or 78.0 fl. oz. per acre per year as soil applications or bark banding.

2. Resistance Management

Zylam Liquid Systemic Insecticide contains a Group 4A insecticide. Insect biotypes with acquired resistance to Group 4A may eventually dominate the insect population if Group 4A insecticides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This

may result in partial or total loss of control of those species by Zylam Liquid Systemic Insecticide or other Group 4A insecticides.

To delay insecticide resistance, consider:

- NOT using a foliar application of Zylam Liquid Systemic Insecticide or any insecticide in the neonicotinoid class following an in-furrow or soil application of Zylam Liquid Systemic Insecticide.
- To optimize resistance management practices, no more than 3 applications of Zylam Liquid Systemic Insecticide per growing season are allowed.
- Avoiding the consecutive use of Zylam Liquid Systemic Insecticide or other Group 4A insecticides that have a similar target site of action, on the same insect species.
- Using tank-mixtures or premixes with insecticides from a different target site of action group as long as the involved products are all registered for the same use and have different sites of action.
- Basing insecticide use on a comprehensive IPM program.
- Monitoring treated insect populations for loss of field efficacy.
- Contacting your local extension specialist, certified advisors, and/or manufacturers for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact PBI/Gordon Corporation 1-877-800-5556.

3. Mixing Instructions

Zylam Liquid Systemic Insecticide Alone: Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the desired amount of Zylam Liquid Systemic Insecticide to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after Zylam Liquid Systemic Insecticide has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

Zylam Liquid Systemic Insecticide + Tank Mixtures: Add 1/2 of the required amount of water to the mix tank. Start the agitator running before adding any tank mix partners. In general, tank mix partners should be added in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables), liquid flowables, liquids, emulsifiable concentrates, and surfactants/adjuvants. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all the mixture has been applied.

NOTE: When using Zylam Liquid Systemic Insecticide in tank mixtures, all products in water-soluble packaging should be added to the tank before any other tank mix partner, including Zylam Liquid Systemic Insecticide. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using Zylam Liquid Systemic Insecticide in a tank mixture, observe all directions for use, sites, use rates, dilution ratios, precautions, and limitations which appear on the tank mix product label. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed. This product should not be mixed with any product which prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

Compatibility: NOTE – The safety of all potential tank mixes on all plants has not been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target plant should be confirmed.

Zylam Liquid Systemic Insecticide is compatible with most commonly used pesticides. However, since it is not possible to test all possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with Zylam Liquid Systemic Insecticide. To determine the physical compatibility of Zylam Liquid Systemic Insecticide with other products, use a jar test, as described below:

Using a quart jar, add the proportionate amounts of the products to 1 quart of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for additional required ingredients to the spray tank.

4. Application Procedures and Spray Equipment

Select spray nozzles which will provide accurate and uniform spray deposition. Use spray nozzles which provide medium-sized droplets and reduce drift. To help insure accuracy, calibrate sprayer before each use. For information on spray equipment and calibration, consult nozzle manufacturers and/or State Extension Service specialists.

Apply Zylam Liquid Systemic Insecticide using sufficient water volume to provide thorough and uniform coverage. In situations where a dense canopy exists and/or pest pressure is high, use greater water volumes. The use of a spray adjuvant may improve spray coverage.

Applications to ornamental plants: Zylam Liquid Systemic Insecticide can be applied using many different types of application equipment. Making application water to ensure good coverage of ornamental plants. When applying sufficient to plants with hard to wet foliage such as holly or pine, the addition of a spreader/sticker is recommended. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the spray area as would be used in a dilute solution. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. Applications can be made to foliage or as a soil drench.

Restrictions:

- Do not graze treated areas or use clippings from treated areas for feed or forage.
- Do not apply under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.
- Prevent runoff or puddling of irrigation water following application.
- Do not apply to areas that are water logged or saturated, or frozen, which will not allow penetration into the root zone of the plant.

5. Soil Applications to Landscape Ornamental Plants (drench or injection)

For systemic insect control on landscape ornamental plants in commercial, industrial and residential areas, parks, athletic fields, and schools, as a soil drench or soil injection.

Ornamental plants including but not limited to:

Bedding Plants, Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Groundcovers, Evergreens, Ornamental Trees, Non-Bearing Fruit Trees, Non-Bearing Nut Trees, Non-Bearing Vines

Pests:

Adelgids including Hemlock Woolly, Balsam Woolly
 Aphids including Balsam, Crepe Myrtle, Green Peach, Melon
 Bagworms
 Flatheaded Borers including Alder, Bronze Birch, Emerald Ash, Flatheaded
 Appletree, Two-Lined Chestnut
 Froghoppers
 Fungus Gnats (larvae)
 Horned Oak Gall
 Lacebugs including Azalea, Cotoneaster, Hawthorne, Rhododendron
 Leaf beetles including Elm, Viburnum
 Leafhoppers including Glassy Winged Sharpshooter, Potato
 Leafminers including Birch, Boxwood, Holly, Serpentine
 Mealybugs including Citrus, Long-Tailed, Madeira, Obscure, Phormium, Pink
 Hibiscus, Root
 Pine tip moth (larvae)
 Plantbugs
 Psyllids including Asian Citrus, Boxwood
 Root Weevils (larvae and adults) including Black Vine, Diaprepes
 Roundheaded Borers including, Eucalyptus Longhorned, Linden, Locust
 (excluding Asian Longhorned)
 Royal Palm Bug
 Sawfly larvae
 Scale (Armored and Soft) including Azalea Bark, Brown Soft, Calico, Cottony
 Cushion, Cycad Aulacaspis, Cytopheria, Duplacionapis, Elongate Hemlock,
 Euonymus, False Oleander, Fig Wax, Fletcher, Florida Red, Florida Wax,
 Lecanium, Oystershell, Poplar (Aspen), Pine needle, Tea, Tulip Tree
 Spittlebugs
 Thrips including Chili (suppression), Cuban Laurel, Gladiolus, Gynaikothrips
 uzeli (suppression), Western Flower (suppression)
 Treehoppers
 Whiteflies including Ficus, Giant, Greenhouse, Silverleaf /
 Sweet potato (B and Q biootypes)
 White Grubs including Oriental Beetle
 White Pine Weevil

Trees and Shrubs:

Shrubs: 0.2 to 0.4 fl. oz. per foot of height (2 to 4 fl. oz. per 10 feet of height)

Trees: Small Trees (Less than 24 inches diameter at breast height) 0.2 to 0.8 fl. oz. per inch diameter at breast height (DBH). Large Trees (24 inches diameter or greater at breast height) 0.4 to 0.8 fl. oz. per inch diameter at breast height (DBH).

For multi-stem trees, base rate on cumulative inches of diameter of all stems at breast height.

For optimal control, apply early in the plant's annual growing cycle and keep soil moist for at least 7 days after application

Only apply to moist soil. Do not apply to dry, saturated or frozen soil. Heavy rainfall or inadequate irrigation immediately following application may decrease performance.

Use higher labeled rates for broadleaf evergreens with dense foliage (i.e. hollies).

Soil Drench: Mix required dose in water and uniformly apply to soil around base of shrub or tree. Pull back mulch before drenching. **For optimal performance apply at least 1 quart of dilute solutions per foot of height or inch of trunk diameter (example: apply at least 12 quarts or 3 gallons of solution per 12" DBH).** If lower drench volume is used, apply 1/2 inch of irrigation immediately after application to move the product into the root zone. Keep soil moist for at least 7 days after application.

Soil Injection: Mix required dose in water and make at least 4 injections per shrub or tree with a low-pressure applicator. Use same amount of solution per hole. Injections can be made using the following methods:

- **Grid system** – Space injections on a 2.5 ft. center extending to drip line
- **Circle System** – Make injections in concentric circles extending inward from the drip line.
- **Basal System** – Space injection evenly around trunk no more than 12 inches out from the base.

For optimal performance inject at least 1 quart of dilute solutions per foot of height or inch of trunk diameter (example: inject at least 12 quarts or 3 gallons of solution per 12" DBH).

6. Bark Banding Applications to Landscape Ornamental Plants

For systemic insect control on landscape trees and shrubs in commercial, industrial and residential areas, parks, athletic fields, and schools, when applied as a trunk spray.

Product Rate: 16 fl. oz. of Zylam Liquid Systemic Insecticide plus 1.0 fl. oz. of organosilicone surfactant. Add to 1.0 gallon of water. Do not apply more than 79 fl. oz. of Zylam Liquid Systemic Insecticide per acre per year.

When sprayed on the trunk, Zylam Liquid Systemic Insecticide will be absorbed through the bark and into the vascular system, and then transported throughout the tree. Speed of control will be dependent on tree size, three health, environmental conditions and how actively pests are feeding.

Spray bark on root flare (buttress roots) and on trunk between soil surface and 4 to 5 feet above the soil surface. Adjust nozzle to uniformly distribute spray over the entire circumference of the tree trunk and buttress roots. Wet bark just to the point of saturation and run off onto soil.

Apply with a low volume sprayer operated at 10 to 20 PSI to prevent tree damage, bounce back and drift.

For optimal control, apply to actively growing trees, and time application that Zylam Liquid Systemic Insecticide has had time to move to insect feeding sites at when target life stage is present.

Do not apply to wet bark, during rainfall or if rain is expected within 12 hours.

Control may be less effective in trees with thick bark, and at times when trees are not actively growing or transpiring.

One gallon of spray solution will treat approximately 36 to 40 inches of tree diameter when measured at 4.5 feet above the soil line (DBH). Spray solution on tree trunk between soil surface and 4 to 5 feet above the soil surface. Do not make more than one application per year.

Ornamental plants including but not limited to:

Shrubs, Ornamental Trees, Non-Bearing Fruit Trees, Non-Bearing Nut Trees

Pests

Adelgids including Hemlock Woolly
Aphids
Flatheaded Borers including Alder, Bronze Birch, Emerald Ash, Flatheaded
Apple tree, Two-Lined Chestnut
Lacebugs
Leaf beetles
Leafhoppers
Leafminers
Mealybugs
Pine Tip Moth (Larvae)
Psyllids
Roundheaded Borers (excluding Asian Longhorned)
Scales including Calico
Thrips (suppression)
Whiteflies including Ficus

7. Foliar Applications to Landscape Ornamental Plants

For insect control on landscape ornamental plants in commercial, industrial and residential areas, parks, athletic fields, and schools.

Product Rate: 8 fl. oz. to 16 fl. oz. per 100 gallons. Apply in sufficient water to ensure thorough coverage of target area. Use a minimum of 1 gallon of finished spray per 1000 sq. ft. Do not apply more than a total of 39.0 fl. oz. of Zylam Liquid Systemic Insecticide per acre per season as foliar sprays. Start treatment prior to buildup of high pest populations. Foliar Spray: 100 gal. of spray mix will treat 20,000 sq. ft. of area.

Ornamental plants including:

Shrubs, Ornamentals, Flowering Plants, Foliage Plants, Groundcovers, Evergreens, Ornamental Trees, Non-Bearing Fruit Trees, Non-Bearing Nut Trees, Non-Bearing Vines

Pests:

Adelgids including Hemlock Woolly, Balsam Woolly
Aphids (suppression)
Japanese beetles (adults)
Lacebugs including Azalea, Cotoneaster, Hawthorne, Rhododendron
Leaf beetles including Viburnum
Leafhoppers including Glassy Winged Sharpshooter, Potato
Leafminers including Serpentine
Mealybugs including Citrus, Long-Tailed, Madeira, Obscure, Phormium,
Pink Hibiscus
Psyllids including Asian Citrus
Root Weevils (adults) including Black Vine, Diaprepes
Sawfly larvae
Scale (Armored and Soft) including Cyptomeria, Cycad Aulacaspis, Elongate,
Hemlock, Euonymus, Florida Red, Florida Wax, Tea
Thrips including Chilli, Gynaikothrips uzeli, Western Flower (suppression)
Whiteflies including Giant, Greenhouse, Silverleaf /
Sweet potato (B and Q biotypes)

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Protect from direct sunlight. Store in cool, dark, and well-ventilated area. Keep container tightly closed. Store away from strong oxidizers.

PESTICIDE DISPOSAL: Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling, if available, or puncture and dispose of 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 only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED. This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

The terms of this Limited Warranty and Disclaimer cannot be varied by any written or verbal statements or agreements. No employee or agent of the seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.

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MANUFACTURED BY
PBI/GORDON CORPORATION
1217 WEST 12TH STREET
KANSAS CITY, MISSOURI 64101
www.pbigordon.com