



# ZeroTol<sup>®</sup> 2.0

## BROAD SPECTRUM ALGAECIDE/BACTERICIDE/FUNGICIDE

**TREATMENT FOR THE PREVENTION AND SUPPRESSION / CONTROL OF HORTICULTURAL DISEASES IN GREENHOUSES, GARDEN CENTERS, LANDSCAPES, AND NURSERIES**



Department of Agriculture  
STATE OF HAWAII

**LICENSED**

PERIOD 2012-2014 LIC. NO.



Department of Agriculture  
STATE OF HAWAII

**LICENSED**

PERIOD 2015-2017 LIC. NO.

**8048.20**

**KEEP OUT OF REACH OF CHILDREN  
DANGER – PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 – 20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>Call poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by the poison control center.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency information on ZeroTol 2.0, call the National Pesticides Information Center at 1-800-858-7378, 6:30AM to 4:30 PM Pacific Time (PT), seven days a week. During other times, call the Poison Control Center at 1-800-222-1222.</p>	
<p><b>NOTE TO PHYSICIAN</b> Probable mucosal damage may contraindicate the use of gastric lavage.</p>	

**FOR HORTICULTURAL AND TURF USE ONLY**

**ACTIVE INGREDIENT:**

Hydrogen Dioxide.....27.1%  
 Peroxyacetic Acid..... 2.0%  
 OTHER INGREDIENTS:.....70.9%  
 TOTAL: ..... 100.0%

### BiSafe Systems L.L.C.

22 Meadow Street East Hartford, CT 06108  
1-888-273-3088 (toll-free)

EPA Registration No.70299-12  
EPA Establishment No. EPA Est. No. 60156-IL-001; 067441-IL-001

1767-0

Net Contents:

■ 2.5 ■ 5 ■ 30 ■ 55 ■ 275 gallons

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**DANGER**

**CORROSIVE.** Causes irreversible eye damage. Causes skin irritation or temporary discoloration on exposed skin. May be fatal if swallowed. Do not breathe vapor. Do not get in eyes, on skin or on clothing. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Handlers who may be exposed to the undiluted product through mixing, loading, application, or other tasks must wear: coveralls over long-sleeved shirt and long pants, rubber gloves, chemical resistant footwear plus socks, and protective eyewear (goggles or face shield). Handlers who may be exposed to the dilute through application or other tasks must wear: long-sleeved shirt and long pants, and shoes plus socks. Follow manufacturer's instructions for cleaning / maintaining PPE. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

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

**ENVIRONMENTAL HAZARDS**

This product is highly toxic to bees and other beneficial insects exposed to direct contact 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. Do not apply this product or allow it to drift to crops where beneficials are part of an Integrated Pest Management strategy.

This pesticide is toxic to fish. Begin treatment along the shore and proceed outward in bands to allow fish to move into untreated areas. Consult with the State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is needed.

This pesticide is toxic to birds who eat treated seed exposed on soil surface.

Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

Do not contaminate water when disposing of equipment washwaters or rinsate.

**PHYSICAL AND CHEMICAL HAZARDS**

**Corrosive.** Strong oxidizing agent. Do not use in undiluted form. Mix only with water in accordance with label instructions. Never bring undiluted product in contact with other pesticides, cleaners or oxidative agents.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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 State or Tribal 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), notification to workers, and Restricted-Entry Interval (REI). The requirements in this box only apply to the uses of this product that are covered by the Worker Protection Standard.

Handlers who may be exposed to the undiluted product through mixing, loading, application, or other tasks must wear: coveralls over long-sleeved shirt and long pants, rubber gloves, chemical resistant footwear plus socks, and protective eyewear (goggles or face shield). Handlers who may be exposed to the dilute through application or other tasks must wear: long-sleeved shirt and long pants, and shoes plus socks.

**For enclosed environments:**

There is a restricted entry of one (1) hour for this product when applied via fogging or spraying to growing plants, surfaces, equipment, structures and non-porous surfaces in enclosed environments such as glasshouses and greenhouses. PPE requirement 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 worn over long-sleeved shirt and pants, waterproof gloves and shoes plus socks.

There is a restricted entry of zero (0) hours for pre-plant dip, seed treatment, soil drench, mop, sponge, dip, soak, rinse or other non-spraying or fogging application methods when used in enclosed environments such as glasshouses and greenhouses.

**For field applications:**

Keep unprotected persons out of treated areas until sprays have dried.

**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.

Keep unprotected persons out of treated areas until sprays have dried.

**INTRODUCTION**

ZeroTol® 2.0 is a liquid bactericide/fungicide used to treat and control plant pathogens on ornamental plants and turf. Use ZeroTol 2.0 as a preventative treatment for suppressing the following plant pathogens: *Alternaria* – *Anthracnose* – *Aphanomyces* – Black Spot – *Botrytis* (grey mold) – Downy Mildew – *Erwinia*, *Fusarium* (root rot) – Leaf Spot – *Phytophthora* (blights, rots) – *Plasmopara* – Powdery Mildew – *Pseudomonas* – *Pythium* – *Rhizoctonia* – Rust – Scab – Smut – *Thielaviopsis* – *Uncinula* (powdery mildew) – *Xanthomonas* – Wilts & Blights – *Ralstonia solanacearum* (brown rot, bacterial wilt) – *Sclerotinia sclerotiorum* (white mold) – *Tobacco mosaic virus*. Use ZeroTol 2.0 to treat/control plant pathogens on bedding plants, flowering plants, roses, poinsettia, ornamentals, nursery stock, trees, turf, synthetic/artificial turf, cut flowers, bulbs, cuttings, seedlings, seeds and seedbeds.

Apply ZeroTol 2.0 to treat/control bacteria, fungi and algae on greenhouse structures, benches, pots, watering systems, evaporative coolers, storage rooms, ventilation equipment, floors and other equipment (optional text: turf equipment, irrigation systems and structures).

#### **Solution Preparation:**

ZeroTol 2.0 works best when diluted with water containing low levels of organic or inorganic materials and having a neutral pH (pH value of 7.0). pH can be measured using a pH meter or indicator test strips. Measuring total suspended solids and EC (Electrical Conductivity) can help in determining concentration of organic and inorganic content in the water. Thoroughly rinse out mixing tank with water before mixing. ZeroTol 2.0 will readily mix with clean, neutral water and does not require agitation.

ZeroTol 2.0 is formulated with minimal surfactant for plants having waxy or hairy surfaces. In order to increase the effectiveness of ZeroTol 2.0, additional non-ionic surfactant may be added, for treatment of plants with difficult to reach surfaces, or for plants having waxy or hairy surfaces. Only non-ionic surfactants are compatible with ZeroTol 2.0.

ZeroTol 2.0 works by surface contact with the plants and materials being treated. It is important to ensure that all surfaces are thoroughly wetted. ZeroTol 2.0 does not produce any visible residue, distinct odor or deleterious effects to plants when used in accordance with label directions.

Tank mixes of metal-based chemicals and ZeroTol 2.0 that have a pH of less than 7.0 may cause excessive foaming and phytotoxicity. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive limitations and precautions of the labeling of all products used in mixtures.

ZeroTol 2.0 is a strong oxidizing agent and may react with residues of metal-based fungicides or supplements. Do not apply ZeroTol 2.0 as a foliar spray immediately following foliar applications of metal-based products. Allow at least 24 hrs. after application of metal-based products before applying ZeroTol 2.0 as a foliar spray. Check the label of the metal-based product prior to application for specific instructions for use with other fungicide products.

**Note: Use spray solution the same day it is prepared, do not store and reuse mixed spray solution.**

#### **Compatibility:**

ZeroTol 2.0 is compatible as a direct injection or tank-mix with many commonly used pesticides, fertilizers, adjuvants and non-ionic surfactants but has not been fully evaluated with all of these. Do not direct inject or tank mix ZeroTol 2.0 in to the irrigation system or in spray tank with pesticides, surfactants or fertilizers before conducting a compatibility test to show it is physically compatible, effective and non-injurious under your use conditions.

To ensure compatibility, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of product to water. Add wettable powders first, followed by water dispersible granules, then by liquid flowables and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

#### **Plant Sensitivity Testing:**

For foliar applications, only use ZeroTol 2.0 at labeled dilutions. Solutions more concentrated than prescribed on this label may result in leaf necrosis for some plants (i.e., do not use dilutions less than 1:100 for foliar treatments). ZeroTol 2.0 has been designed to provide a balanced source of the active ingredient directly to the plant surface. ZeroTol 2.0 has been used and tested on many varieties of plant material; however, the nature of the target plant, environmental conditions, plant vigor, and the use of other pesticides can all affect plant sensitivity to ZeroTol 2.0. The safety of ZeroTol 2.0 has not been determined on all plants and crops. Plants grown in greenhouses vary greatly from those grown under field conditions. Determine if ZeroTol 2.0 can be safely used prior to application. Before treating large numbers of plants, test ZeroTol 2.0 or tank mixes of ZeroTol 2.0 and other pesticides or fertilizers at labeled rates on a separate set of plants and observe for symptoms of sensitivity prior to use. Symptoms on foliage include yellow or brown spotting, "burned" tips and/or yellow or brown scorching along the leaf edges.

When using ZeroTol 2.0 for control of organisms living on the plant tissue (such as downy and powdery mildew), treatment may result in lesions on plant tissue. ZeroTol 2.0 will oxidize parasitic organisms living in plant tissue that are not always visible to the naked eye. Resulting oxidative effects may include spotting, or drying of the plant tissue where organisms inhabited tissue.

NOTE: ZeroTol 2.0 can be used on hydroponic growing systems as a foliar treatment when following the label directions for foliar treatments. ZeroTol 2.0 can be used as a hydroponic water treatment only after a water sample has been submitted to BioSafe Systems for analysis and special direction is provided for application recommendations. Inert growing media in a hydroponic growing system provide special conditions that the grower needs to adjust for due to the unbuffered water conditions. Water pH, EC and supplements such as fertilizer, biological loading and minor elements are factors that need to be considered before determining correct water treatment rates.

Before applying ZeroTol 2.0, thoroughly read the Directions for Use. Apply this product as directed. Do not use ZeroTol 2.0 above labeled rates.

### **USE RATES AND DIRECTIONS**

#### **FOR GREENHOUSE SURFACES AND EQUIPMENT**

Use ZeroTol 2.0 to suppress / control bacteria, fungi and slime forming algae on greenhouse glazing, plastic, benches, walkways, floors, walls, fan blades, ventilation ducts, watering systems, coolers, storage rooms, and equipment.

- 1) Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt.
- 2) Use a dilution of 1:300 or ½ fl. oz per gallon of clean water. Use a dilution of 1:50 or 2½ fl. oz. of ZeroTol 2.0 per gallon of clean water if surfaces that are to be treated have not been pre-cleaned with water to remove organic deposits. The use of additional surfactant is acceptable.
- 3) Apply solution with mop, sponge, power sprayer or fogger to thoroughly wet all surfaces.
- 4) Scrub off heavy growths of algae and fungi following application. Use a solution of ZeroTol 2.0 to wash away dead growth.
- 5) Reapply as often as needed for control.

### Foaming Applications

Apply ZeroTol 2.0 as a foam treatment to enhance contact on porous surfaces and irregular surfaces, where contact is difficult to maintain with spray treatments. Use a dilution of 1:300 or ½ fl. oz. per gallon of clean water. Use a dilution of 1:50 or 2½ fl. oz. of ZeroTol 2.0 per gallon of clean water if surfaces to be treated have not been pre-cleaned with water to remove organic deposits. Add a surfactant foaming agent to the spray tank that contains the diluted ZeroTol 2.0 spray solution. Follow all mixing instructions on the label. Apply foam until the surface treated is completely covered. Allow foam treated surface to air dry. Do not rinse.

### TREATMENT OF CLEAN, HARD NON-POROUS SURFACES

Use ZeroTol 2.0 to suppress / control bacteria, fungi and slime forming algae on the following surfaces:

SURFACE	USE RATE	INSTRUCTIONS
<b>Pots, Flats, Trays</b>	1:100 – 1:300 or ¼ fl. oz. – ½ fl. oz. per gallon of clean water.	Spray until runoff. Add additional surfactant if needed.
<b>Cutting Tools</b>	1:100 – 1:300 or ¼ fl. oz. – ½ fl. oz. per gallon of clean water.  Tobacco Mosaic Virus control: 1:50 – 1:100 or 2½ fl. oz. – ¼ fl. oz. per gallon of clean water.	Soak tools to ensure complete coverage. Add additional surfactant if needed.  Use ZeroTol 2.0 to prevent the spread of Tobacco Mosaic Virus on cutting tools. Allow surfaces to remain wet for 1 minute.
<b>Benches and Work Areas</b>	Precleaned surfaces: 1:100 – 1:300 or ¼ fl. oz. – ½ fl. oz. per gallon of clean water.  Unclean surfaces: 1:50 or 2½ fl. oz. per gallon of clean water if surfaces have not been pre-cleaned with water to remove organic deposits.	Sweep and remove all plant debris. Use power sprayer to wash all surfaces to remove loose dirt. Add additional surfactant if needed.
<b>Foot Bath Mats</b> Foot pads and walk-through trays	1:100 – 1:170 or ¼ fl. oz – ¾ fl. oz. per gallon of water.	Apply ZeroTol 2.0 to prevent the tracking and spread of dirt and microorganisms. Make a solution of ZeroTol 2.0 per gallon of water and fill foot bath mat, foot pad or walk-through tray to capacity. Allow treated surface to remain wet with solution for 10 minutes. Change solution as needed.

<b>Evaporative Coolers</b>	Contaminated surfaces: 1:100 or ¼ fl. oz. per gallon of clean water.  Cooler water – 1:500 or ¼ fl. oz. for every gallon of cooler water.	Treat algae and slime contaminated surfaces with a 1:100 dilution. Repeat as needed to obtain control.  Treat cooler water every week as a preventative treatment.
<b>Irrigation Systems</b> Flooded floors, flooded benches, recycled water systems, capillary mats, humidification and misting systems	Contaminated water: 1:500  Clean water: 1:10,000	Treat contaminated water with a dilution of 1:500 or ¼ fl. oz. for every gallon of water.  Treat clean water with a dilution of 1:10,000 or one gallon of ZeroTol 2.0 per 10,000 gallons of water.

### SOIL OR MEDIA DRENCH

ZeroTol 2.0 is effective for the control / suppression of soil borne plant diseases such as *Pythium*, *Phytophthora*, *Rhizoctonia*, *Thielaviopsis* or *Fusarium*. Use as a soil drench at the time of seeding or transplanting, as well as a periodic drench throughout the plant's life. ZeroTol 2.0 can also be used on potting soil and growing mediums prior to planting.

1. Use a dilution of 1:100 or ¼ fl. oz. per gallon of clean water.
2. Apply to soil or growing media to the point of saturation.
3. Wait fifteen minutes before planting or watering.
4. Apply every five to seven days as a preventative treatment.

### PLANT TREATMENT

#### As A Foliar Spray Treatment In Greenhouses

ZeroTol 2.0 works immediately on contact with any plant surfaces for the control / suppression of fungi and bacteria such as *Botrytis*, Downy Mildew, Powdery Mildew, *Xanthomonas*. Apply ZeroTol 2.0 to ornamentals, bedding plants, flowering plants, shrubs, and trees. To ensure that this contact fungicide is effective, thorough coverage and wetting of the foliage is necessary.

#### Initial (Curative) Application:

1. Use a dilution of 1:100 or ¼ fl. oz. per gallon of clean water. Do not reuse already mixed solution, make fresh daily.
2. Spray, mist or fog plants in early morning or late evening.
3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks to ensure full contact with plant and flower tissue.
4. Apply consecutive applications until control is achieved and then follow directions for preventative treatment.

#### Weekly Preventative Treatment:

1. Use a dilution of 1:300 or ½ fl. oz. per gallon of clean water.
2. Spray, mist or fog plants.

3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks.
4. Spray every five to seven days as a preventative treatment.
5. At the first sign of disease spray daily with a 1¼ fl. oz. per gallon of water for three consecutive days and then resume weekly preventative treatment.

#### **For Mist Propagation Of Cuttings And Plugs**

Inject ZeroTol 2.0 into misting systems to control / suppress algae, fungi and bacterial disease from becoming established on plant material. Inject ZeroTol 2.0 using a 1:1,000 dilution rate, for four to ten days on a consecutive basis. Reduce concentration to 1:5,000 and maintain continuous application throughout propagation cycle. At the first sign of disease, increase the concentration of ZeroTol 2.0 to 1:1,000.

#### **As A Pre-Plant Dip Treatment**

Use ZeroTol 2.0 for the control / suppression of damping-off, root and stem rot diseases such as *Pythium*, *Phytophthora*, *Rhizoctonia*, *Fusarium*, *Pennicillium*, or *Thielaviopsis* on ornamental and nursery plants, seed beds, seeds, seedlings, bulbs, or cuttings.

1. Use 64 fl. oz. per 50 gallons of water, a dilution of 1:100.
2. Immerse plants or cuttings. Remove and allow to drain. Do not rinse.

#### **For Cut Flowers**

Use ZeroTol 2.0 to prevent *Botrytis*, Downy Mildew and Powdery Mildew on flowers in cold storage or in transit. Use a dilution of 1:500 or ¼ fl. oz. per gallon of clean water. Spray flowers after grading and prior to storage or shipment. Repeat weekly for flowers in storage.

#### **As A Foliar Spray Treatment In Field Nurseries**

ZeroTol 2.0 works immediately on contact with any plant surface for control / suppression of disease. Apply ZeroTol 2.0 to nursery stock such as: woody ornamentals, bedding plants, flowering plants, roses, container plants, azaleas, rhododendrons, conifers, and shade trees. Good coverage and wetting of the foliage is necessary.

#### Initial (Curative) Application:

1. Use a dilution of 1:100 or 1¼ fl. oz. per gallon of clean water. Do not reuse already mixed solution, make fresh daily.
2. Spray, mist plants and trees, including applications through irrigation or chemigation systems.
3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks to ensure full contact with plant and flower tissue.
4. If disease pressure continues, apply consecutive applications until control is achieved and then follow directions for preventative treatment.

#### Weekly Preventative Treatment:

1. Use a dilution of 1:300 –½ fl. oz. per gallon of clean water.
2. Spray, mist or fog plants and trees, including applications through irrigation or chemigation systems.
3. Thoroughly wet all surfaces of plant, upper and lower foliage, including stems, branches and stalks.
4. Spray every five to seven days as a preventative treatment.
5. At the first sign of disease spray daily with a dilution of 1:100 or 1¼ fl. oz. per gallon of water for three consecutive days and then resume weekly preventative treatment.

#### **For Bareroot Nursery Stock**

Use ZeroTol 2.0 to prevent *Botrytis* on budwood and nursery stock in storage. Use a dilution of 1:100 or 1¼ fl. oz. per gallon of water. Dip plants or spray until dripping wet. Repeat weekly if necessary.

#### **For Seed Bed Treatment**

Use ZeroTol 2.0 for the control / suppression of disease as follows:

1. Prior to sowing seed, use a dilution of 1:100 - 1:200 or 1.3 to 0.64 fl. oz per gallon of clean water. Thoroughly wet or drench the seedbed, to the point of saturation, with 60 to 100 gallons of dilute solution per 1,000 square feet. Let sit for one hour then immediately seed soil.
2. After seeds have germinated, use a dilution of 1:100 - 1:200 or 1.3 to 0.64 fl. oz per gallon of clean water. Lightly spray or irrigate the soil and seedlings until thoroughly wetted. Retreat once per week until seed is well established.

#### **For Soil Treatment, Pre-Inoculation With Beneficial Organisms**

Use ZeroTol 2.0 to reduce the number of plant pathogenic organisms in the soil. Use a dilution of 1:100 - 1:200 or 1.3 to 0.64 fl. oz. per gallon of clean water. Pre-treat soil by thoroughly wetting or drenching with ZeroTol 2.0, Wait one day following treatment before inoculating the soil with beneficial organisms.

#### **TURF TREATMENT**

Use on well-established lawns, athletic fields, golf course fairways, greens and tees of Bentgrass, Bluegrass, Bermudagrass, Fescue, Ryegrass, St. Augustine grass and their mixtures to control / suppress algae, bacterial and fungal diseases, and the odors and conditions that these organisms may cause.

1. Use ZeroTol 2.0 to treat / prevent the bacterial/fungal conditions caused by *Anthracnose*, Brown Patch, Dollar Spot, Copper Spot, Summer patch, Strip Smut, Take-All Patch, Leaf Spot, *Fusarium*, Fairy Ring, Pink Snow Mold\*, *Pythium*, *Phytophthora*, *Rhizoctonia*.
2. Average treatment rates involve treating approximately 1,000 square feet of turf area with 5 gallons of diluted solution. Add a spreader surfactant for best results. Optimum treatment time is early morning or late afternoon.
3. For best results, apply immediately after grass has been cut. Applications can be made during wet or rainy weather.
4. Inject ZeroTol 2.0 through automatic irrigation systems in turf areas. Refer to Chemigation Directions for Use for specific instructions on using this product through irrigation systems.

#### **Curative Rate:**

12 fl. oz. per 1,000 sq. ft. Use 5 gallons of solution per 1,000 sq. ft. Curative control will require consecutive treatments to eradicate disease. Apply treatment until disease is controlled. Once control is achieved, follow directions for preventative rate. Combine with a systemic fungicide for residual suppression.

#### **Preventative Rate:**

6 fl. oz. per 1,000 sq. ft. Use 3 gallons per 1,000 sq. ft. Reapply as disease pressure warrants. This product may be tank mixed with compatible residual fungicides.

For soil-borne diseases, drench the soil to saturate the root systems in the areas affected, and use 5 – 10 gallons per 1,000 sq. ft.

For Pink Snow Mold, spray in early fall to reduce the number of dormant spores. Treat throughout the winter. May be applied to frozen ground.

For heavy algae growth, apply 12 - 25 fl. oz. per 1000 sq. ft. and use 5 - 10 gallons of water per 1,000 sq. ft.

### **ARTIFICIAL TURF TREATMENT**

Use ZeroTol 2.0 for the prevention and control of algae, fungi, moss, slime molds and their spores.

#### **Application Directions**

1. Make a liquid solution of ZeroTol 2.0 at a rate of 1.25 fl. oz. for each gallon of water.
2. Spray evenly over area to be treated.
3. Allow treated area to remain wet for five minutes.
4. Allow to dry thoroughly before use.
5. Repeat treatment as needed.

### **CHEMIGATION:**

#### **General Requirements -**

1. Apply this product only through a drip system or sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, hand move, flood (basin), furrow, border or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5. 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 as needed.
6. Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.
7. Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign must face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.
8. All words shall consist of letters at least 2.5 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their im-

mediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

#### **Specific Requirements for Chemigation Systems Connected to Public Water Systems -**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system must be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Sprinkler Chemigation -**

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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 filled with a system interlock.

7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Flood (Basin), Furrow and Border Chemigation -**

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.
2. The systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - a. 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.
  - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
  - c. 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.
  - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
  - e. 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.
  - f. 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 filled with a system interlock.

#### **Specific Requirements for Drip (Trickle) Chemigation -**

1. The system must contain a functional check valve, a vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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 filled with a system interlock.

#### **Application Instructions -**

1. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water until no scale or pesticide residues are present. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
2. Determine the treatment rates as indicated in the directions for use and make proper dilutions.
3. Prepare a solution in the chemical tank by filling the tank with the required amount of water and then adding product as required. The product will immediately go into suspension without any agitation.
4. Do not apply ZeroTol 2.0 in conjunction with any other pesticides or fertilizers; this has the potential to cause reduced performance of the product.

#### **STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in original container in a cool, dry well-ventilated area, away from direct sunlight. Do not allow product to become overheated in storage. Do not store in a manner where cross-contamination with other pesticides or fertilizers could occur.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely 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 directions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL (Containers equal to or less than 5 gallons):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

**CONTAINER DISPOSAL (Containers greater than 5 gallons):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

#### **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and 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.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product.

Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of BIOSAFE SYSTEMS LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold BIOSAFE SYSTEMS and Seller harmless for any claims relating to such factors.

BIOSAFE SYSTEMS warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or BIOSAFE SYSTEMS, and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BIOSAFE SYSTEMS MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESSED OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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