

72431-1

06/20/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D C 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Jeneil Biosurfactant Company
c/o Amy Plato Roberts
Technology Sciences Group, Inc
712 Fifth Street, Suite A
Davis, CA 95616

JUN 20 2012

Subject Label Amendment to reduce the Restricted Entry Interval (REI), increase the application rate, and revise the storage and disposal statement
Zonix Biofungicide
EPA Reg No 72431-1
Your submission dated March 9, 2012
Decision Number 462394

Dear Ms Roberts

The amendment referred to above submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 3(c)(5), is acceptable provided that you

- 1) Submit and/or cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data
- 2) Submit two (2) copies of your final printed labeling before you release the product for shipment. Final printed labeling means the label or labeling of the product when distributed or sold. Clearly legible reproductions or photo reductions will be accepted for unusual labels, such as those silk-screened directly onto glass or metal containers or large bags or drum labels

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Should you have any questions, you may contact Mr. Colin Walsh directly at (703) 308-0298 or via email at walsh.colin@epa.gov

Sincerely,

Linda A. Hollis, Chief
Biochemical Pesticides Branch

CONCURRENCES
Biochemical Pesticides and Pollution

Prevention Division (7511P)

SYMBOL ▶	7511P						
SURNAME ▶	Walsh						
DATE ▶	6/18/12						

Master Label

ZONIX™ Biofungicide

Alternate Brand Names "OF COURSE", "ANEW", "DIONYSUS", "BLINIX", "BLI-NIX",
"TREEVENT"

Sublabel A	Agricultural Uses (WPS-Subject)
Sublabel B	Non-Agricultural Uses (NonWPS-Subject)

ACTIVE INGREDIENT

Rhamnolipid Biosurfactant (Decanoic acid 3-[[6-deoxy-2-O-(6-deoxy- alpha -L-mannopyranosyl)- alpha -L-mannopyranosyl]oxy]- 1-(carboxymethyl)octyl ester mixture with 1-(carboxymethyl)octyl 3-[(6-deoxy- alpha -L-mannopyranosyl)oxy]decanoate)*

8 50%

OTHER INGREDIENTS

91 50%

TOTAL

100 00%

*Contains a minimum of 11 30 fl oz of rhamnolipid biosurfactant per gallon
Source organism *Pseudomonas aeruginosa*

EPA Reg No 72431-1
EPA Establishment No 72431-WI-001

Manufactured by
Jeneil Biosurfactant Company
400 N Dekora Woods Blvd
Saukville, Wisconsin 53080

ACCEPTED

JUN 20 2012

Under the Federal Insecticide, Fungicide,
and Rodenticide Act as amended, for
the pesticide registered under
EPA Reg No 72431-1

Sublabel A Agricultural Uses (WPS-Subject)

ZONIX™ Biofungicide

- For horticultural and agricultural use to control zoosporic plant fungi such as blight and downy mildew
- Kills zoospores that cause fungal disease on contact
- Controls plant diseases
- Protects plants from disease

ACTIVE INGREDIENT

Rhamnolipid Biosurfactant (Decanoic acid 3-[[6-deoxy-2-O-(6-deoxy- alpha -L mannopyranosyl) alpha L-mannopyranosyl]oxy] 1-(carboxymethyl)octyl ester mixture with 1-(carboxymethyl)octyl 3 [(6-deoxy- alpha -L-mannopyranosyl)oxy]decanoate)*

8 50%

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 Source organism *Pseudomonas aeruginosa*

**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 the label, find someone to explain it to you in detail)

FIRST AID	
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 swallowed	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice • Have person sip a glass of water if able to swallow • Do not induce vomiting unless told to do so by the poison control center or doctor • Do not give anything by mouth to an unconscious person
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	
NOTE TO PHYSICIAN Probable mucosal damage may contraindicate the use of gastric lavage	

See back panel for additional precautionary statements

EPA Reg No 72431 1
 EPA Establishment No 72431-WI-001

Net Contents 15 30 55 200 or 400 gallons
 (Lot No / Batch Code _____)

Manufactured by
 Jeneil Biosurfactant Company
 400 N Dekora Woods Blvd
 Saukville Wisconsin 53080

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS – DANGER Corrosive Causes irreversible eye damage Do not get in eyes or on clothing Wear goggles or face shield 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 dilute through application or other tasks must wear long-sleeved shirt and long pants, and shoes plus socks Handlers who may be exposed to the concentrate through mixing loading application or other tasks must wear long-sleeved shirt and long pants, shoes plus socks, and protective eyewear Follow manufacturer s instructions for cleaning / maintaining PPE Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product’s concentrate 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 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 Users should 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 Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean highwater mark Do not contaminate water when cleaning equipment or disposing of equipment washwaters Exposed treated seed may be hazardous to birds and other wildlife Dispose of all excess treated seed by burial away from streams and bodies of water

READ ENTIRE LABEL BEFORE USING THIS PRODUCT
SEE ATTACHED BOOKLET FOR COMPLETE DIRECTIONS FOR USE AND
PRECAUTIONARY STATEMENTS

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling

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 4 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 waterproof gloves shoes plus socks and protective eyewear

EXCEPTION If the product is soil-injected or soil incorporated the Worker Protection Standard under certain circumstances allows workers to enter the treated area if there will be no contact with anything that has been treated

General Information ZONIX™ Biofungicide is for the prevention and control of plant pathogenic fungi on horticultural and agricultural crops. Zoosporic fungal diseases are often spread by zoospores that are transported from one plant to another and from field to field. ZONIX™ Biofungicide kills zoospores that cause fungal disease, on contact. Use ZONIX™ Biofungicide on the foliage, fruit and roots of the following agricultural commodities and horticultural crops:

Root, Bulb, Tuber and Cane Crops, such as beets, carrots, cassava, garlic, ginger, onions, potatoes, radish, sugar beets, sweet potatoes and yams

Fruiting Vegetables, such as eggplant, pepper and tomato

Legume Crops such as alfalfa, field beans, lentils, peas, peanuts and soybeans

Leafy Vegetables, such as asparagus, broccoli, cabbage, celery, collards, lettuce and spinach

Cucurbit Vegetables such as cantaloupe, cucumber, melon, squash, watermelon and zucchini

Fruit and Nut Trees such as almonds, apples, apricots, cherries, filberts, macadamia, nectarines, peaches, pecans, pistachios, plums and walnuts

Citrus Fruits such as grapefruit, lemon and orange

Tropical Crops such as avocado, banana, cocoa, coffee, guava, lychee, nuts, mango, papaya, pineapple and plantain

Berry Crops, such as blueberry, gooseberry, raspberry and strawberry

Grain, Forage, Fiber and Oil Crops such as barley, canola, corn, cotton, hops, millet, oats, rice, rye, sesame, sorghum, Sudan grass and wheat

Vine Crops such as grapes, kiwi and passion fruit

Herbs such as chive, mint, oregano, parsley, sage and thyme

Ornamental Plants grown in greenhouses and nurseries, such as begonia, bougainvillea, chrysanthemum, cyclamen, dahlia, ferns, foliage plants, fuchsia, ivy, lily, miniature roses, orchid, peony, phlox and poinsettia

Ornamental Trees and Shrubs grown in greenhouses and nurseries such as azalea, birch, blue spruce, boxwood, camellia, cedar, crabapple, cypress, dogwood, elm, ficus, fir

flowering cherry flowering peach forsythia, gardenia, hackberry holly hydrangea, laurel lilac magnolia maple myrtles pines poplar privet pyracantha rhododendron spruce and sycamore

Flowers for Cutting grown in greenhouses and nurseries such as astor astromerias baby's breath carnations chrysanthemums, fuchsia lilies and roses

Bedding Plants grown in greenhouses and nurseries, such as astor calendula carnation cosmos, impatiens, lobelia, marigold, nasturtium pansy petunia, snapdragon sweet alyssum verbena and zinnia

Turf Grass on sod farms, such as bentgrass Bermuda grass bluegrass centipede grass fescue ryegrass and St Augustine

Use ZONIX™ Biofungicide to prevent and control any zoosporic plant pathogenic microorganisms including the following genera Achlya, Albugo Aphanomyces Basidiophora Olpidium Pachymetra Peronophthora Peronosclerospora Physoderma Phytophthora, Plasmodiophora Plasmopara Polymyxa Pseudoperonospora Pythium Rhizophydium Sclerophthora Sclerospora, Spongospora Synchytrium and Trachysphaera

Mixing Directions Fill tank with half the water then add ZONIX™ Biofungicide and agitate. Add remaining water. When entire volume of water has been added thoroughly agitate mix before making application. Continued agitation is not necessary. Use solution within 24 hours. It is possible to mix ZONIX™ Biofungicide with other products such as nutrients and pesticides, however final concentration of 300 to 500 ppm must be maintained. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

Application Directions Apply ZONIX™ Biofungicide at a concentration of 300 to 500 ppm. Make applications in the early stages of plant growth for initial control. Reapply at 5-day intervals or as needed throughout the growing season for preventative control. Early treatment prevents diseases from developing. ZONIX™ Biofungicide is a contact biofungicide that controls disease upon contact with zoospores. Thorough coverage is necessary for disease control. To assure control make applications at the time that conditions are best for occurrence of zoospores and resultant disease.

Refer to the Dilution Table for the appropriate amount of ZONIX™ Biofungicide needed to achieve a concentration of 300 to 500 ppm. Use the higher rate for the first treatment or when disease pressure is high.

Dilution Table –

Amount of water (Gallons)	Amount of ZONIX™ Biofungicide (fl oz)	
	for 300 ppm	for 500 ppm
10	5	8
50	23	38
100	45	76
200	90	152
300	136	228
400	181	304
500	226	379
1000	452	759

Foliar spray, fog or drench - Apply ZONIX™ Biofungicide using conventional equipment as a spray fog or drench to the point of saturation. Good coverage and wetting of the foliage is required. Use enough spray solution to completely penetrate the leaf canopy and both cover the top and underside of all leaves until runoff. The amount of spray solution to apply will vary depending on the type of crop. Most row crops will require up to 100 gallons of spray per acre while mature trees will require up to 500 gallons of spray per acre. Prepare enough solution based on plant density and soil conditions to insure thorough coverage maintaining a concentration of 300 to 500 ppm ZONIX™ Biofungicide. Reapply at 5-day intervals or as needed throughout the growing season for preventative control.

Soil and growing media drench - Apply ZONIX™ Biofungicide to soil and growing media 48 hours prior to use for seeding or transplanting and apply to soil and growing media as a drench at 5-day intervals or as needed throughout the plants' life. Use ZONIX™ Biofungicide at a concentration of 300 to 500 ppm on potting soil and growing medias prior to planting to kill existing zoospores in the soil. Use enough spray solution to treat the soil or growing media to the point of saturation.

Pre-Plant spray or mist application - Use ZONIX™ Biofungicide to prevent damping-off and seed rots due to *Pythium* and *Phytophthora* early season *Phytophthora* root rot and plant and cutting diseases on seeds, seedlings, bulbs, transplants or cuttings prior to planting. Apply ZONIX™ Biofungicide using conventional equipment as a spray or mist to the point of saturation. Good coverage and wetting of the plant material is required. Prepare enough solution to insure thorough coverage maintaining a concentration of 300 to 500 ppm ZONIX™ Biofungicide. Do not use treated seed for food, feed or oil purposes. Treat only those seeds needed for immediate use and planting. Do not store excess treated seeds beyond planting time.

Closed systems for ebb and flow and hydroponics application – Meter or inject ZONIX™ Biofungicide to achieve a concentration of 300 to 500 ppm into closed continuous recirculation systems used in hydroponics growing or ebb and flow in rock wool and peat / perlite mixtures. Apply ZONIX™ at 5-day intervals or as needed throughout the plants' life.

Irrigation systems – Meter ZONIX™ Biofungicide to achieve a concentration of 300 to 500 ppm into irrigation systems and apply continuously for the duration of the water application.

Refer to the Chemigation section of this label for complete details on application through irrigation systems. Apply through a drip (trickle) system or sprinkler including center pivot lateral move end tow, side (wheel) roll traveler, big gun solid set or hand move irrigation systems. Apply ZONIX™ at 5-day intervals or as needed throughout the growing season.

Compatibility ZONIX™ Biofungicide is believed to be compatible with most commonly used pesticides. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. It is always advisable to conduct a spray compatibility test when you plan to mix this product with other products. To determine the physical compatibility of this product with other products use a jar test. Using a quart jar add the proportionate amounts of the products to approximately one quart of water with agitation. Add dry formulations first then flowables, and then emulsifiable concentrates last. After thorough mixing, allow this mixture to stand for 5 minutes. If the combination remains mixed or can be readily remixed it is physically compatible. Once compatibility has been proven use the same procedure for adding products to the spray tank. Use tank-mix combinations on a small number of plants before treating large areas as crop sensitivity to these mixtures may vary.

ZONIX™ Biofungicide has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However testing all crop varieties in all mixtures and combinations is not feasible. Prior to treating entire crop test a small portion of the crop for sensitivity.

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 or hand move 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 you should 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 should the need arise.
- 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 should 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 immediate 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 should 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 dosed 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 Drip (Trickle) 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 dosed, 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

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 dosed 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

Application Instructions -

- 1) Remove scale pesticide residues and other foreign matter from the chemical supply tank and entire injector system Flush with clean water Failure to provide a clean tank void of scale or residues may cause product to lose effectiveness or strength
- 2) Meter ZONIX™ Biofungicide to achieve a concentration of 85 –125 ppm into irrigation systems and apply continuously for the duration of the water application
- 3) Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required The product will immediately go into suspension without any required agitation

STORAGE AND DISPOSAL

Do not contaminate water food or feed by storage or disposal

Pesticide Storage Store in original container in a dry, cool place out of direct sunlight and away from heat sources Keep from overheating or freezing

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 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 Offer for recycling if available Triple rinse container promptly after emptying
(Containers 5 gallons or less)

Triple rinse as follows Fill container ¼ full with water and recap Agitate vigorously Follow Pesticide Disposal instructions for rinsate disposal Drain for 10 seconds after the flow begins to drip Repeat procedure two more times Then offer for recycling or reconditioning If not available, puncture and dispose in a sanitary landfill
(Containers greater than 5 gallons)

Triple rinse as follows Fill container ¼ full with water 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 Turn the container over onto its other end and tip it back and forth several times Follow Pesticide Disposal instructions for rinsate disposal Repeat this procedure two more times Then offer for recycling or reconditioning If not available puncture and dispose in a sanitary landfill

NOTICE TO USER

Seller makes no warranty express or implied of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label User assumes all risks of use storage or handling not in strict accordance with label instructions

Sublabel B Non-Agricultural Uses (NonWPS-subject)

ZONIX™ Biofungicide

For turf and ornamental use to control zoosporic plant fungi such as (blight) (*Pythium*) and downy mildew

- Kills zoospores that cause fungal disease on contact
- Controls plant diseases
- Protects plants from disease

ACTIVE INGREDIENT

Rhamnolipid Biosurfactant (Decanoic acid 3 [[6 deoxy-2-O-(6-deoxy- alpha -L-mannopyranosyl)- alpha L-mannopyranosyl]oxy] 1-(carboxymethyl)octyl ester mixture with 1-(carboxymethyl)octyl 3 [(6-deoxy- alpha L-mannopyranosyl)oxy]decanoate)*

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OTHER INGREDIENTS

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TOTAL

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Source organism *Pseudomonas aeruginosa*

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 the label, find someone to explain it to you in detail)

FIRST AID	
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 swallowed	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice • Have person sip a glass of water if able to swallow • Do not induce vomiting unless told to do so by the poison control center or doctor • Do not give anything by mouth to an unconscious person
Have the product container or label with you when calling a poison control center or doctor or going for treatment You may also contact 1-800-222-1222 for emergency medical treatment information	
NOTE TO PHYSICIAN Probable mucosal damage may contraindicate the use of gastric lavage	

See back panel for additional precautionary statements

EPA Reg No 72431-1
EPA Establishment No 72431 WI-001

Net Contents 15 30 55 200 or 400 gallons
(Lot No / Batch Code _____)

Manufactured by
Jeneil Biosurfactant Company
400 N Dekora Woods Blvd
Saukville Wisconsin 53080

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS – DANGER Corrosive Causes irreversible eye damage Do not get in eyes or on clothing Wear goggles or face shield Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco Remove and wash contaminated clothing before reuse

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 Handlers who may be exposed to the concentrate through mixing, loading application or other tasks must wear long-sleeved shirt and long pants shoes plus socks and protective eyewear

ENVIRONMENTAL HAZARDS Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean highwater mark Do not contaminate water when cleaning equipment or disposing of equipment washwaters

READ ENTIRE LABEL BEFORE USING THIS PRODUCT
SEE ATTACHED BOOKLET FOR COMPLETE DIRECTIONS FOR USE AND
PRECAUTIONARY STATEMENTS

DIRECTIONS FOR USE

It is a violation of Federal law to apply this product in a manner inconsistent with its labeling

Keep unprotected persons out of treated areas until sprays have dried

General Information ZONIX™ Biofungicide is for the prevention and control of plant pathogenic fungi on turf and ornamentals Zoosporic fungal diseases are often spread by zoospores that are transported from one plant to another ZONIX™ Biofungicide kills zoospores that cause fungal disease, on contact Use ZONIX™ Biofungicide on the foliage and roots of the following turf and ornamentals

Ornamental Plants in parks, ornamental gardens, golf courses, and public or private lawns and grounds, such as begonia bougainvillea chrysanthemum cyclamen dahlia ferns foliage plants, fuchsia ivy lily, miniature roses orchid peony phlox and poinsettia

Ornamental Trees and Shrubs in parks, ornamental gardens, golf courses, and public or private lawns and grounds such as azalea birch, blue spruce boxwood, camellia cedar, crabapple cypress dogwood elm ficus fir flowering cherry flowering peach, forsythia gardenia hackberry holly hydrangea laurel, lilac magnolia maple myrtles, pines, poplar privet pyracantha rhododendron spruce and sycamore

Bedding Plants in parks, ornamental gardens, golf courses, and public or private lawns and grounds such as astor calendula carnation, cosmos impatiens, lobelia marigold nasturtium pansy petunia snapdragon sweet alyssum verbena and zinnia

Turf Grass in parks, golf courses and public or private lawns and grounds, such as bentgrass Bermuda grass bluegrass centipede grass fescue ryegrass and St Augustine

Use ZONIX™ Biofungicide to prevent and control any zoosporic plant pathogenic microorganisms including the following genera Achlya Albugo Aphanomyces Basidiophora Olpidium, Pachymetra Peronophthora Peronosclerospora, Physoderma Phytophthora, Plasmiodiophora Plasmopara, Polymyxa, Pseudoperonospora, Pythium Rhizophyidium Sclerophthora Sclerospora Spongospora Synchytrium and Trachysphaera

Mixing Directions Fill tank with half the water then add ZONIX™ Biofungicide and agitate. Add remaining water. When entire volume of water has been added, thoroughly agitate mix before making application. Continued agitation is not necessary. Use solution within 24 hours. It is possible to mix ZONIX™ Biofungicide with other products such as nutrients and pesticides however final concentration of 300 to 500 ppm must be maintained. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

Application Directions Apply ZONIX™ Biofungicide at a concentration of 300 to 500 ppm. Make applications in the early stages of plant growth for initial control. Reapply at 5-day intervals or as needed throughout the growing season for preventative control. Early treatment prevents diseases from developing. ZONIX™ Biofungicide is a contact biofungicide that controls disease upon contact with zoospores. Thorough coverage is necessary for disease control. To assure control make applications at the time that conditions are best for occurrence of zoospores and resultant disease.

Refer to the Dilution Table for the appropriate amount of ZONIX™ Biofungicide needed to achieve a concentration of 300 to 500 ppm. Use the higher rate for the first treatment or when disease pressure is high.

Dilution Table –

Amount of water (Gallons)	Amount of ZONIX™ Biofungicide (fl oz)	
	for 300 ppm	for 500 ppm
10	1.5	2
50	6	9
100	13	19
200	26	38
300	38	56
400	51	75
500	64	94
1000	128	188

Foliar spray, fog or drench - Apply ZONIX™ Biofungicide using conventional equipment as a spray, fog or drench to the point of saturation. Good coverage and wetting of the foliage is required. Use enough spray solution to completely penetrate the leaf canopy and both cover the top and underside of all leaves until runoff. The amount of spray solution to apply will vary depending on the type of crop. Most uses will require up to 100 gallons of spray per acre while mature trees will require up to 500 gallons of spray per acre. Prepare enough solution based on plant density and soil conditions to insure thorough coverage maintaining a concentration of 300 ppm to 500 ppm ZONIX™ Biofungicide. Reapply at 5-day intervals or as needed throughout the plants' life for preventative control.

Irrigation systems – Meter ZONIX™ Biofungicide to achieve a concentration of 300 – 500 ppm into irrigation systems and apply continuously for the duration of the water application. Refer to the Chemigation section of this label for complete details on application through irrigation systems. Apply through a drip (trickle) system or sprinkler including solid set or hand move irrigation systems. Apply ZONIX™ at 5-day intervals or as needed throughout the plants' life.

Compatibility ZONIX™ Biofungicide is believed to be compatible with most commonly used pesticides. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. It is always advisable to conduct a spray compatibility test when you plan to mix this product with other products. To determine the physical compatibility of this product with other products, use a jar test. Using a quart jar, add the proportionate amounts of the products to approximately one quart of water with agitation. Add dry formulations first, then flowables, and then emulsifiable concentrates last. After thorough mixing, allow this mixture to stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding products to the spray tank. Use tank-mix combinations on a small number of plants before treating large areas, as crop sensitivity to these mixtures may vary.

ZONIX™ Biofungicide has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties, in all mixtures and combinations is not feasible. Prior to treating entire crop, test a small portion of the crop for sensitivity.

CHEMIGATION

General Requirements -

- 1) Apply this product only through a drip system or sprinkler including solid set or hand move 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, you should 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 should the need arise.
- 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 should 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 immediate 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 should 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 dosed 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 Drip (Trickle) 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 dosed 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 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

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 dosed 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

Application Instructions -

- 1) Remove scale pesticide residues and other foreign matter from the chemical supply tank and entire injector system Flush with clean water Failure to provide a clean tank void of scale or residues may cause product to lose effectiveness or strength
- 2) Meter ZONIX™ Biofungicide to achieve a concentration of 85 –125 ppm into irrigation systems and apply continuously for the duration of the water application
- 3) Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required The product will immediately go into suspension without any required agitation

STORAGE AND DISPOSAL

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

Pesticide Storage Store in original container in a dry cool place out of direct sunlight and away from heat sources Keep from overheating or freezing

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 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 Offer for recycling if available Triple rinse container promptly after emptying

(Containers 5 gallons or less)

Triple rinse as follows Fill container ¼ full with water and recap Agitate vigorously Follow Pesticide Disposal instructions for rinsate disposal Drain for 10 seconds after the flow begins to

drip Repeat procedure two more times Then offer for recycling or reconditioning If not available puncture and dispose in a sanitary landfill

(Containers greater than 5 gallons)

Triple rinse as follows Fill container ¼ full with water 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 Turn the container over onto its other end and tip it back and forth several times Follow Pesticide Disposal instructions for rinsate disposal Repeat this procedure two more times Then offer for recycling or reconditioning If not available, puncture and dispose in a sanitary landfill

NOTICE TO USER

Seller makes no warranty express or implied, of merchantability fitness or otherwise concerning the use of this product other than as indicated on the label User assumes all risks of use storage or handling not in strict accordance with label instructions