

73314-1

02/22/2010

1/57

Ms. Heather Bjornson, Regulatory Consultant
Technology Sciences Group, Inc.
1150 18th Street, NW, Suite 1000
Washington, DC 20036

FEB 22 2010

Re: Actinovate® Soluble
EPA Registration No. 73314-1
Minor Label ("Fast Track") Amendment
Application Dated 09/09/2009

Dear Ms. Bjornson:

The Agency has reviewed your request to amend the subject product registration, which included the following changes to the product label:

- 1) Add and revise text (including directions for use),
- 2) Add claims, and
- 3) Create additional sublabels.


The changes referred to above, submitted in connection with registration under FIFRA section 3(c)(5), are acceptable provided that you:

- 1) Submit and/or cite all data required for registration 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. Refer to the A-79 enclosure for a further description of a final printed label.

Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions. If you have any questions please contact Anna Gross at: 703-305-5614 or by email at: gross.anna@epa.gov.

A stamped copy of the label is enclosed for your records.

Sincerely,


 Sheryl Reilly, Ph.D., Chief
 Microbial Pesticides Branch
 Biopesticides and Pollution
 Prevention Division (7511P)

CONCURRENCES

SYMBOL	7511P	7511P	7511P					
SURNAME	GROSS	Reynolds	Reilly					
DATE	02/16/10	2/18/10	2/22/10					

2/57

ACTINOVATE® SOLUBLE

(Alternate Brand Names: Actinovate® SP, Actinovate® AG, ActinoGro®, ActinoGro® TURF, Actinovate® Lawn & Garden, and Actinovate® For Lawn & Garden)

MASTER LABEL

Sublabel A: Greenhouse, Nursery and Ornamental Landscape & Interiorscape Use (18-oz bag)
Sublabel B: Agriculture Production Use (18-oz bag and 300-oz pail)
Sublabel C: Residential Use (2-oz bag)
Sublabel D: Turf and Turf Landscape Use (18-oz bag)
Sublabel E: Agricultural Use on Select Major Crops (30-oz bag)
Optional Label Claims

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*00.0371%

OTHER INGREDIENTS:99.9629%

100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

ACCEPTED

FEB 22 2010

**Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended, for
the pesticide registered under
EPA Reg. No. 73314-1**

Sublabel A: Greenhouse, Nursery, and Ornamental Landscape & Interiorscape Use

(FRONT PANEL)

**ACTINOVATE® SOLUBLE
(ALTERNATE BRAND NAME: ACTINOVATE® SP)**

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*00.0371%

OTHER INGREDIENTS:99.9629%

100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

ACCEPTED

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, the pesticide registered under EPA Reg. No. 73314-1 is hereby accepted for sale and distribution in the United States.

Net Contents:

(Back Panel)

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixer/loaders and applicators must wear a dust/mist-filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. 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.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. If gloves are worn, wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards:

For terrestrial uses: Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

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) 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 one (1) hour or until solution has dried.

Exception: If the product is soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter treated area if there is no contact with anything that has been treated.

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

Non-Agricultural Use Requirements

The requirements in this box apply to uses of the 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.

PRODUCT INFORMATION:

Actinovate® Soluble is a biological fungicide for the suppression/control of root rot and damping-off fungi and the suppression/control of foliar fungal pathogens. When used as a soil drench, soil borne fungi suppressed/controlled include *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Phytophthora*, *Phytophthora*, *Phytophthora*, *Sclerotinia*, *Gaeumannomyces*, *Verticillium*. The active ingredient in Actinovate® Soluble colonizes the

root system and protects it from harmful fungi. When used as a foliar spray, Actinovate® Soluble effectively suppresses/controls foliar diseases such as Powdery and Downy Mildew, *Botrytis*, *Sclerotinia*, and *Alternaria*.

When applied to the soil, Actinovate® Soluble also breaks down minerals and micronutrients making them more available to plants resulting in increased size and vitality. Plants treated with Actinovate® Soluble as a soil drench will become hardier, more vigorous and will have a robust and protected root system.

APPLICATION DIRECTIONS:

Compatibility:

Actinovate® Soluble is completely soluble and does not require agitation to keep suspended in a solution. Actinovate® Soluble is compatible with most chemical fungicides, insecticides and fertilizers. If tank mixes are desired, observe the most restrictive directions, precautions and limitations on labeling of all products used. Actinovate® Soluble can be tank mixed or dry mixed with all chemical fungicides, insecticides, and fertilizers unless otherwise restricted. Consult manufacturer for compatibility questions. Do not apply soil fumigants to areas treated with Actinovate® Soluble.

Application Timing:

Apply Actinovate® Soluble throughout the growing season from early spring to late fall on ornamentals, greenhouse and nursery crops. Note: Since Actinovate® Soluble contains live spores of a microbe, best results will be obtained if the product is used prior to disease onset. Actinovate® Soluble becomes active in soil or on the plant foliage when the temperatures are above 45° F and is not effective when temperatures remain cold. Actinovate® Soluble can be applied to sterilized or fumigated soil, but it must be applied after sterilization or fumigation.

Application Uses:

Actinovate® Soluble is a biological fungicide for use as a soil drench, in-furrow seed spray, cutting or bare rooted transplant dip, ornamental bulb crop soak or dusting treatment, and foliar application for ornamentals, all greenhouse and nursery crops, and landscape plants including tree seedlings for transplanting to the field.

GREENHOUSE, NURSERY, ORNAMENTAL LANDSCAPE OR INTERIORSCAPE DRENCH

For preventative suppression/control of *Pythium*, *Rhizoctonia*, *Phytophthora*, *Fusarium*, *Verticillium* and *Sclerotinia* on greenhouse, nursery, landscape and interiorscape crops.

Mix 4-6 oz. of Actinovate® Soluble in 100 gallons of water to create solution. Apply solution as a drench to plants/growing media at a rate of 1 gallon per cubic foot of growing media (this equates to enough solution to saturate soil without creating run-off) or until soil in pot (or root ball of plant) is completely saturated just prior to run off.

For smaller quantities: Use 1 teaspoon of Actinovate® Soluble per 2 gallons of water to create solution and apply as above.

Actinovate® Soluble can be applied through low pressure watering nozzles such as fan nozzles, through overhead boom type sprayers or sprinklers, hydroponics systems, injectors, flood benches or other drench watering systems. Actinovate® Soluble is compatible with most chemical fungicides, insecticides, and fertilizers as well as other biological products. See the Compatibility section for additional details.

Cutting or Bare Rooted Transplant Dip:

Dip cuttings or transplants in Actinovate® Soluble dry powder or in a solution of 18-oz Actinovate® Soluble and 5 gallons water. For larger trees or woody ornamentals, dissolve 18-oz of Actinovate® Soluble in 50 gallons of water and let bare root plants soak in the solution for 4-12 hours prior to planting. Plant treated cuttings or transplants in potting mix or soil in the usual manner.

GREENHOUSE, NURSERY, ORNAMENTAL LANDSCAPE AND INTERIORSCAPE FOLIAR SPRAYS

For preventative suppression/control of Powdery Mildew, Downy Mildew, *Botrytis*, *Phytophthora*, *Sclerotinia*, and *Alternaria* on greenhouse, nursery, landscape, and interiorscape plants, apply 6-12 oz Actinovate® Soluble per acre. Dissolve Actinovate® Soluble in 50-100 gallons of water and apply to foliage and blossoms every 7 to 14 days depending on disease pressure. Crop size, spray equipment, and local practices will determine the volume of water needed. Spray to wet, but do not allow run-off.

For smaller quantities: Use 1 teaspoon of Actinovate® Soluble per gallon of water as a dilution and apply as above.

Actinovate® Soluble can be applied using hand-held backpack or ground spray equipment. Clean application equipment before use of this product and use prepared sprays within 4 hours of preparation. For best results, use a non-ionic spreader-sticker in conjunction with application. Consult manufacturer or sales representative for specific suggestions.

Ornamental Bulb Crops (Including corms, rhizomes, tubers, and seeds):

Soak: Soak bulbs in solution of Actinovate® Soluble at 6-18 oz. per 100 lbs. of bulbs. Dilute in enough water to completely cover bulbs. Thoroughly cover all surfaces of bulbs with solution for 1 hour prior to planting.

Soil Drench: Apply to soil through irrigation or as an in-furrow seed spray in 20-200 gallons of water at a rate of 6-12 oz. of Actinovate® Soluble per acre.

Dusting: Prior to planting or shipping, evenly dust bulbs at a rate of 2-6 oz. of Actinovate® Soluble per 100 lbs. of bulbs.

GREENHOUSE AND NURSERY CHEMIGATION**General Requirements:**

- Apply Actinovate® Soluble at 4-6 oz per 100 gallons of water.
- Apply Actinovate® Soluble only through 1) overhead boom and mist-type systems, 2) sprinklers such as impact or micro-sprinklers, 2) pressurized drench (flood) or drip (trickle) systems, 3) micro irrigation such as spaghetti tube or individual tube irrigation, 4) hand-held calibrated irrigation equipment such as hand-held wand with injector, and 5) ebb and flow systems. Do not apply this product through any other type of irrigation system.
- Plant injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 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.
- 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.

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, back flow 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 flow 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.
- 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.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Sprinkler Chemigation Requirements:

- 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 back flow.
- 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 fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Drip Chemigation Requirements:

- 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 back flow.
- 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 inter-locking 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 fitted with a system interlock.
- 7) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 8) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 9) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 10) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Flood Chemigation Requirements:

- 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 back flow if water flow stops.
- 2) 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 back flow.
 - 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 fitted with a system interlock.
- 3) Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.

 - 4) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.

 - 5) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.

 - 6) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

STORAGE AND DISPOSAL

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

Pesticide Storage:

Store in a dry, cool place out of direct sunlight and away from heat sources. Keep from overheating or freezing. Optimum storage temperature is 40° F to 85° F.

Pesticide Disposal:

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments by industry).

Container Disposal:

Non-refillable container. Do not reuse or refill this container. Clean container promptly after emptying. Then offer for recycling if available or puncture and dispose of in sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Batch Code: _____

LIMITED WARRANTY/DISCLAIMER

To the extent consistent with applicable law manufacturer warrants that this product is suited for the labeled uses when applied according to label directions. To the extent consistent with applicable law, manufacturer makes no warranty of merchantability. To the extent consistent with applicable law, there are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Use By:

LOT NUMBER:

SUBLABEL B: AGRICULTURE PRODUCTION USE

(FRONT PANEL)

**ACTINOVATE® SOLUBLE
(ALTERNATE BRAND NAME: ACTINOVATE® AG)**

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*00.0371%

OTHER INGREDIENTS:99.9629%

100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

Net Contents:

(Back Panel)

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixer/loaders and applicators must wear a dust/mist filtering NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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

User Safety Recommendations

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

Environmental Hazards:

For terrestrial uses: Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

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) 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 one (1) hour or until solution has dried.

Exception: If the product is soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter treated area if there is no contact with anything that has been treated.

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

Non-Agricultural Use Requirements

The requirements in this box apply to uses of the 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.

PRODUCT INFORMATION:

Actinovate® Soluble is a biological fungicide for the suppression of root rot and damping-off fungi and the suppression/control of foliar fungal pathogens. When used as a soil drench or seed treatment, soil borne fungi suppressed/controlled include *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Phymatotrichum omnivorum* (cotton root rot), *Aphanomyces*, *Monosporascus*, *Armillaria*, *Sclerotinia*, *Gaeumannomyces*,

Postia, Verticillium and Geotrichum. The active ingredient in Actinovate® Soluble colonizes the root system and protects it from harmful fungi. When used as a foliar spray, Actinovate® Soluble effectively suppresses/controls foliar diseases such as Powdery and Downy Mildew, *Botrytis*, *Monilinia*, *Anthracnose*, Greasy Spot, *Sclerotinia*, *Alternaria*, and *Erwinia*.

When applied to the soil, Actinovate® Soluble also breaks down minerals and micronutrients making them more available to plants resulting in increased size and vitality. Plants treated with Actinovate® Soluble as a soil application will become hardier, more vigorous and will have a robust and protected root system.

INTEGRATED PEST MANAGEMENT (IPM):

Integrate Actinovate® Soluble into an overall disease and pest management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

USE RATE DETERMINATION:

Carefully read and follow all label directions, use rates, and restrictions. For best results, apply Actinovate® Soluble prior to or in the early stages of disease development. For proper foliar application, determine the number of acres to be treated, the specified label use rate, and select the appropriate gallonage to give thorough and uniform coverage of all plant parts to be protected. For proper soil application, determine the number of acres to be treated, the specified label use rate, and select the appropriate gallonage to give good saturation of the soil in order for the product to establish itself on the root system. For best results, apply product solution to damp soil. Prepare only the amount of spray of soil drench solution to treat the measured area. Accurate spray equipment calibration is essential prior to use.

PREHARVEST INTERVAL:

Actinovate® Soluble can be applied up to and including the day of harvest.

APPLICATION DIRECTIONS:

Compatibility:

Actinovate® Soluble is completely soluble and does not require agitation to keep suspended in a solution. Actinovate® Soluble is compatible with most chemical fungicides, insecticides and fertilizers. If tank mixes are desired, observe the most restrictive directions, precautions and limitations on labeling of all products used. Actinovate® Soluble can be tank mixed and dry mixed with all chemical fungicides, insecticides,

and fertilizers unless otherwise restricted. Do not apply soil fumigants to the areas treated with Actinovate® Soluble. Consult manufacturer for compatibility questions.

Application Timing:

Apply Actinovate® Soluble throughout the growing season from early spring to late fall to the production agriculture crops listed in the "Crops on Which Actinovate® Soluble May Be Used" section.

Note: Since Actinovate® Soluble contains live spores of a microbe, best results will be obtained if the product is used prior to disease onset. Actinovate® Soluble becomes active in soil or on the plant foliage when the temperatures are above 45° F and is not effective when temperatures remain cold. Actinovate® Soluble can be applied to sterilized or fumigated soil, but it must be applied after sterilization or fumigation.

Application Uses:

Actinovate® Soluble is a biological fungicide for use as a soil application (drench and in-furrow), seed treatment, bulb crop dusting treatment, and foliar application for production agriculture crops listed in the "Crops On Which Actinovate® Soluble May Be Used" section.

GREENHOUSE VEGETABLES AND HERBS

For suppression of *Pythium*, *Phytophthora*, *Rhizoctonia*, *Verticillium*, *Fusarium*, *Sclerotinia*, *Botrytis*, *Alternaria*, *Anthraco*se, Powdery Mildew and Downy Mildew on all greenhouse vegetable and herb crops listed in the section "Crops on which Actinovate® Soluble may be used".

Soil Drench: Use 4-6 oz of Actinovate® Soluble in 100 gallons of water to create solution. Apply solution as a drench to plants/growing media at a rate of 1 gallon per cubic foot of growing media (this equates to enough solution to saturate soil without creating run-off).

Hydroponics systems: Use 0.5-1.5 oz. per 1,000 square feet of growing area.

Foliar Spray: Apply 6-12 oz Actinovate® Soluble per acre. Dissolve Actinovate® Soluble in 50-100 gallons of water and apply to foliage and blossoms every 7 to 14 days depending on disease pressure. Crop size, spray equipment, and local practices will determine the volume of water needed. Spray to wet, but do not allow run-off.

For smaller quantities: Use 1 teaspoon of Actinovate® Soluble per gallon of water as a dilution and apply as above.

Actinovate® Soluble can be applied using hand-held backpack or ground spray equipment. Clean application equipment before use of this product and use prepared sprays within 4 hours of preparation. For best results, use a non-ionic spreader-sticker in conjunction with application. Consult manufacturer or sales representative for specific suggestions.

AGRICULTURE PRODUCTION

For soil treatment and seed treatment for the suppression/control of *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Phymatotrichum omnivorum* (cotton root rot), *Aphanomyces*, *Monosporascus*, *Armillaria*, *Sclerotinia*, *Gaeumannomyces*, *Postia*, *Verticillium* and *Geotrichum*.

For foliar treatment of Powdery and Downy Mildew, *Botrytis*, *Monilinia*, *Anthraco*se, Greasy Spot, *Sclerotinia*, *Alternaria*, and *Erwinia*.

Soil Treatment At Planting:

Use at planting, in-furrow, seeding, or transplant. Apply 1-12 oz. of Actinovate® Soluble in 10-200 gallons of water per acre. Refer to the "Crops On Which Actinovate® Soluble May Be Used" section for crop-specific application rates.

Soil Treatment Through Irrigation:

Actinovate® Soluble may be used in drip, overhead, or other irrigation systems listed in the "Chemigation" section at any stage of plant growth as a soil treatment. Apply 1-12 oz. of Actinovate® Soluble in 10-200 gallons of water per acre. See "Chemigation" section for additional information and "Crops On Which Actinovate® Soluble May Be Applied" section for crop-specific application rates.

Seed Treatment:

Seed Spray or Slurry Coating: Apply this product through mist-type commercial seed treatment equipment, slurry or other comparable methods that provide thorough coverage of treated seed. Prior to planting, dissolve 1-6 oz. of Actinovate® Soluble in 4oz of water per acre of seed and spray directly on seed. **Hopper Box Dry Coating:** Apply directly to seed as a dry coating at a rate of 1-6 oz per acre of seed. Apply as to insure even coating of product on seeds.

Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

Seed treatment on agricultural establishment in hopper-box, planted box, or other seed-treatment application at or immediately before planting is within the scope of WPS, while commercial treatment of seeds is not within the scope.

Foliar Treatment:

Use 3-12 oz of Actinovate® Soluble in 20-150 gallons of water per acre. Apply initial application prior to onset of disease season. Reapply every 7-14 days depending on disease pressure and environmental conditions. For best results, use a spreader-sticker (adjuvant) in conjunction with product application. Actinovate® Soluble can be used in all types of spray equipment including aerial applications.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and grower/treatment coordinator are responsible for considering all of these factors when making decisions.

Dusting and coating of bulbs, corms, tubers, rhizomes and seeds:

Prior to planting or shipping, evenly dust bulbs at a rate of 2-6 oz. of Actinovate® Soluble per 100-lbs. of bulbs, corms, tubers, rhizomes or seeds.

Crops On Which Actinovate® Soluble May Be Used:

Crops	Soil Drench Rate	Foliar Spray Rate
<p>Agronomic Field and Row Crops: Cotton, succulent and dry peas, and other agronomic field and row crops</p>	<p>1-3 oz of Actinovate® Soluble per acre Applied in furrow</p>	<p>3-12 oz of Actinovate® Soluble per acre Reapply every 7-14 days For best results, use with a spreader-sticker.</p>
<p>Cucurbit Vegetables: cucumbers, melons, gourds, squash, cantaloupe, and other cucurbits</p> <p>Fruiting Vegetables: Eggplant, sweet peppers, hot peppers, tomatoes, tomatillos, and other fruiting vegetables</p> <p>Herbs, Spices and Mints: Sage, rosemary, thyme, peppermint, dill, basil, oregano and other herbs and spices</p> <p>Leafy Vegetables and Cole Crops: Broccoli, brussel sprouts, cabbage, cauliflower, celery, collards, endive, kale, kohlrabi, lettuce, mustard greens, parsley, spinach and other leafy vegetable crops</p> <p>Legume and Vegetable Crops: Snap and dry beans, lentils, succulent and dry peas,</p>	<p>3-12 oz of Actinovate® Soluble per acre</p>	<p>3-12 oz of Actinovate® Soluble per acre Reapply every 7-14 days For best results, use with a spreader-sticker.</p>
<p>Small Grains: Rice*</p> <p>Root/Tuber and Bulb Crops: Garlic, onions, , carrot, ginger, ginseng, horseradish, turnip, radish and other root/tuber/bulb crops</p> <p>Berry Crops: Blueberries, blackberry, raspberry, loganberry, huckleberry, gooseberry, elderberry, currant, caneberry and other berry crops</p>	<p>3-12 oz of Actinovate® Soluble per acre</p>	<p>3-12 oz of Actinovate® Soluble per acre Reapply every 7-14 days For best results, use with a spreader-sticker.</p>

Crops	Soil Drench Rate	Foliar Spray Rate
<p>Strawberry</p> <p>Asparagus</p> <p>Citrus: Orange, grapefruit, lemon, tangerine, tangelo, lime, pummelo and other citrus crops</p> <p>Corn: Sweet corn and other corn crops</p> <p>Grape: Wine grapes, table grapes, raisins and other grape crops</p> <p>Hops</p> <p>Pome Fruit: Apple, crabapple, pear, quince, mayhaw and other pome fruit</p> <p>Stone Fruit: Apricot, cherry, nectarine, peach, plum, prune and other stone fruit</p> <p>Tree Nuts: Almond, pistachio, pecan, walnut, filberts and other tree nuts</p> <p>Tropical Fruits: Avocado, mango, papaya and other tropical fruits</p> <p>Bananas / Plantains</p> <p>Watercress*</p> <p>Mushrooms</p> <p>Ginseng</p> <p>Olives</p>		

* Spray only when there is not standing water in bed.

CHEMIGATION

General Requirements:

- Apply Actinovate® Soluble at 1-12 oz per 20 -200 gallons of water.
- Apply Actinovate® Soluble only through 1) overhead boom and mist-type systems, 2) sprinklers including impact or micro-sprinklers, central pivot, lateral move, end tow, side wheel roll, traveler, solid set, or hand move systems 3) pressurized-drench (flood) or drip (trickle) systems, 4) micro irrigation such as spaghetti tube or individual tube irrigation, 5) hand-held calibrated irrigation equipment such as hand-held wand with injector, and 6) ebb and flow systems. Do not apply this product through any other type of irrigation system.
- Plant injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

- 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.
- 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.

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, back flow 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 flow 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.
- 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.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.

- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Sprinkler Chemigation Requirements:

- 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 back flow.
- 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 fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Drip Chemigation Requirements:

- 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 back flow.
- 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 inter-locking 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 fitted with a system interlock.
- 7) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 8) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 9) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 10) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Flood Chemigation Requirements:

- 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 back flow if water flow stops.
- 2) Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

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- 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 back flow.
 - 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 fitted with a system interlock.
- 3) Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
 - 4) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
 - 5) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
 - 6) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a dry, cool place out of direct sunlight and away from heat sources. Keep from overheating or freezing. Optimum storage temperature is 40° F to 85° F.

Pesticide Disposal: To avoid wastes use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments by industry).

Container Disposal:

Non-refillable container. Do not reuse or refill this container. Clean container promptly after emptying. ([For the 300 oz pail] Triple rinse as follows: Empty the remaining contents into application equipment or a

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mix tank. 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.) Then offer for recycling if available or puncture and dispose of in sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Batch Code: _____

LIMITED WARRANTY/DISCLAIMER

To the extent consistent with applicable law manufacturer warrants that this product is suited for the labeled uses when applied according to label directions. To the extent consistent with applicable law manufacturer makes no warranty of merchantability. There are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Use By:

LOT NUMBER:

27/57

Sublabel C: Residential Use

(FRONT PANEL)

ACTINOVATE® SOLUBLE

**(ALTERNATE BRAND NAME: ACTINOVATE® FOR LAWN & GARDEN, Actinovate®
For Lawn & Garden)**

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*00.0371%

OTHER INGREDIENTS:99.9629%

100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

Net Contents:

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Avoid breathing dust or spray mist. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE): Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks."

User Safety Recommendations

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. If gloves are worn, wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards: To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. 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.

PRODUCT INFORMATION:

Actinovate® Soluble is a biological fungicide for the suppression/control of root rot and damping-off fungi and the suppression/control of foliar fungal pathogens. The active ingredient in Actinovate® Soluble is a patented bacterium that, when applied, grows around the root system (when soil drenched) and foliage of the plant (when sprayed on). Actinovate® Soluble uses several novel modes of antifungal action to protect plants and lawns. Actinovate® Soluble may be used on all vegetables, fruits, and nuts including tomatoes, peppers, melons, carrots, broccoli, lettuce, onions, apples, pears, and walnuts in addition to

annual and perennial bedding plants and flowers, roses, potted flowers, foliage plants, trees, shrubs and lawns located in residential homes, residential greenhouses and residential landscapes. Actinovate® Soluble can be applied up to and including the day of harvest.

In addition, when applied to the soil, Actinovate® Soluble also breaks down minerals and micronutrients making them more available to plants resulting in increased size and vitality. Plants and turf treated with Actinovate® Soluble as a soil drench will become hardier, more vigorous and will have a robust and protected root system.

DISEASES CONTROLLED/SUPPRESSED

Soil Diseases (When applied as a drench) (When watered in):

- *Root Rot and Damping Off in ornamentals & vegetables
(*Pythium, Phytophthora, Rhizoctonia, Fusarium* et.al)
- *Turf Brownpatch (*Rhizoctonia*)
- *Turf Dollarspot (*Sclerotinia*)
- *Turf Take-all Patch (*Gaeumannomyces graminis*)

Foliar Diseases (When applied as a spray) (When sprayed):

- *Powdery and Downy Mildew
- *Grey Mold (*Botrytis*)
- *Black Spot (*Diplocarpon rosae*)
- *Leaf Spots and Rusts
- *Fire Blight (*Erwinia*)

APPLICATION DIRECTIONS:

Compatibility:

Actinovate® Soluble is completely soluble and does not require continuous mixing to keep suspended in a solution. Actinovate® Soluble is compatible with all fungicides, insecticides and fertilizers, unless otherwise restricted. If tank mixes are desired, observe the most restrictive directions, precautions and limitations on labeling of all products used. Consult manufacturer for compatibility questions.

SOIL DRENCH

Dissolve 1-2 teaspoons (4-8 grams) of Actinovate® Soluble per 2 gallons of water to create solution. For more severe disease pressure or likelihood of disease pressure, use higher rates. Apply solution to pot, base of plant, or roots of plant by watering until soil is completely saturated without creating run-off. One cup of solution usually treats about one 6" pot or its equivalent.

For more severe disease pressure or likelihood of disease pressure, use higher rates.

For best results, apply to damp soil and/or apply in conjunction with a wetting agent. Pre-dampened soil will allow the Actinovate® Soluble microorganism to work to the root system of the plant much more easily. Apply Actinovate® Soluble at any stage of the crop life. For best results, apply as early as possible such as at seeding, transplant or potting stage. Reapply every 2-12 weeks as needed. Apply product with watering can, hose-end sprayer or similar devices.

FOLIAR SPRAY

Dissolve 1-2 teaspoons (8 grams) of Actinovate® Soluble per 2 gallons of water to create solution. For more severe disease pressure or likelihood of disease pressure, use higher rates.

Spray leaves, stems, and new shoots to runoff providing complete coverage of entire plant. For best results, apply product prior to disease development or at the first sign of infection. Repeat at 7-day intervals to protect new foliage. Under conditions of heavy rainfall, it may be necessary to reapply the product after the rain has stopped. Do not water foliage within 4 hours of application. Use a pump bottle, handheld pump, backpack or similar type of spray equipment.

For best results, use a spreader-sticker (a product designed to break the surface tension of water and evenly spread it over the surface of the foliage) in conjunction with application. Consult your garden center or dealer for specific product suggestions. (Examples of spreader-stickers include Weather Shield®, Agri-2®, Plant Camel® and yucca extract)

LAWN TREATMENT

Use direct watering, a Pump-Up Sprayer or Hose-End Sprayer to apply solution until soil is saturated. Reapply at maintenance rate every 4-8 weeks. For best results, use a wetting agent such as yucca extract, Coco-Wet®, Plant Camel® or Mega Wet® in conjunction with Actinovate® Soluble in order to help move product to the root system of the lawn. Consult your garden center or dealer for specific product suggestions.

Direct Watering:

Mix 10 teaspoons of product in 5 gallons of water and apply to 1,000 sq ft of lawn. Thoroughly soak turf so as to move the solution to the root system. Avoid excess run-off or leaching.

Pump-Up Sprayer

Initial Application: Mix 2 teaspoons Actinovate® Soluble per gallon of water to create spray solution.

Apply spray solution at 1 gallon per 200 sq ft of lawn. Thoroughly soak turf so as to move the solution to the root system. Avoid excess run-off or leaching.

Maintenance Application: Use 0.6 teaspoons Actinovate® Soluble per gallon of water to create spray solution. Apply spray solution at 1 gallon per 200 sq ft of lawn. Thoroughly soak turf so as to move the solution to the root system. Avoid excess run-off or leaching.

HOSE-END SPRAYER SETTINGS FOR LAWNS

Make a liquid concentrate from the Actinovate® Soluble powder as follows:

Initial Application

Area Covered	Actinovate®	Water	Hose-end Setting
200 sq ft	1.8 tsp	4 oz	4 oz
1000 sq ft	9 tsp.	20 oz	4 oz

Maintenance Application

Area Covered	Actinovate®	Water	Hose-end Setting
200 sq ft	0.6 tsp	4 oz	4 oz
1000 sq ft	3 tsp.	20 oz	4 oz

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a dry, cool area inaccessible to children. Store in original container only.

PESTICIDE DISPOSAL AND CONTAINER HANDLING

If empty:

Nonrefillable container. Do not reuse or refill this container. Place in trash or offer for recycling, if available. Batch code:

If partly filled:

Call your local solid waste agency for 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

LIMITED WARRANTY/DISCLAIMER

To the extent consistent with applicable law manufacturer warrants that this product is suited for the labeled uses when applied according to label directions. To the extent consistent with applicable law manufacturer makes no warranty of merchantability. There are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Use By:

LOT NUMBER:

SUBLABEL D: TURF GRASS AND TURF LANDSCAPE PLANTS APPLICATION

(FRONT PANEL)

**ACTINOVATE® SOLUBLE
(ALTERNATE BRAND NAMES: ACTINOGRO® TURF)**

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*00.0371%

OTHER INGREDIENTS:99.9629%
100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

Net Contents:

(Back Panel)

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixer/loaders and applicators must wear a dust/mist-filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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

User Safety Recommendations

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

Environmental Hazards:

For terrestrial uses: Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

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) 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 one (1) hour or until solution has dried.

Exception: If the product is soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter treated area if there is no contact with anything that has been treated.

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
- Waterproof gloves
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of the 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.

Product Information:

Actinovate® Soluble is a biological fungicide for the control of plant disease such as root rots damping-off, brown patches, summer patches, dollar spot and other fungi and the suppression of foliar fungal pathogens. When used as a soil drench, soil-borne fungi controlled include *Fusarium*, *Rhizoctonia*,

Pythium, Phytophthora, Phytomatotricum, Aphanomyces, Monosporascus, Armillaria, Sclerotinia, Postia, Verticillium, Geotrichum, and Gaeumannomyces graminis... The active ingredient in Actinovate® Soluble colonizes the root system and protects it from harmful fungi. When used as a preventative spray, Actinovate® Soluble effectively suppresses/controls foliar diseases such as Powdery and Downy Mildew, *Botrytis, Sclerotinia, Alternaria, and Erwinia.*

APPLICATION DIRECTIONS:

Compatibility:

Actinovate® Soluble is completely soluble and does not require agitation to keep suspended in a solution. Actinovate® Soluble is compatible with most chemical fungicides, and fertilizers. If tank mixes are desired, observe the most restrictive directions, precautions and limitations on labeling of all products used.. Actinovate® Soluble can be tank mixed and dry mixed with most chemical fungicides and fertilizers unless otherwise restricted. Do not apply soil fumigants to the areas treated with Actinovate® Soluble. Consult manufacturer for compatibility questions.

Application Timing:

Apply Actinovate® Soluble throughout the growing season beginning when soil warms to 45° F or pre-plant or pre-emerge to the crops listed on this label.

Note: Actinovate® Soluble contains live spores of a microbe that should be used prior to disease onset to obtain best results. Actinovate® Soluble becomes active in soil or on the plant foliage when the temperatures are above 45°F and is not effective when temperatures remain cold. Actinovate® Soluble can be applied to sterilized or fumigated soil but it must be applied after sterilization or fumigation active ingredient dissipates.

PRODUCT USES

Actinovate Soluble is a broad-spectrum fungicide for use in the prevention, suppression and aiding in control of landscape foliar and soil diseases (*Powdery and Downy Mildew, Botrytis, Rhizoctonia, Fusarium, Verticillium, Pythium, and Phytophthora*), and turf grass diseases (*Brown Patch, Take-all Patch, Pythium blight, Dollar Spot, Powdery Mildew, Rusts, and Molds*).

Actinovate Soluble can be applied to turf grass including uses on golf courses, sod farms, home lawns, home landscapes, office buildings, apartment complexes, cemeteries, sports fields and other such sites.

Actinovate Soluble can also be applied to outdoor ornamental plants used for landscaping around homes, buildings, golf courses, sports fields, and cemeteries.

APPLICATION INSTRUCTIONS:

GOLF COURSE TEES, GREENS AND FAIRWAYS, COMMERCIAL AND RESIDENTIAL LAWNS, SOD FARMS, ATHLETIC FIELDS PARKS, CEMETERIES AND SIMILAR SITES:

Soil Drench Application: Mix Actinovate® Soluble with appropriate amount of water (2-4 gallons per 1000 sq. ft.). Water in immediately after application with sprinklers for 3-6 minutes.

Apply at a rate of 54-oz of Actinovate® Soluble per acre for initial application or problem areas when soil temperatures are above 45°F.

Apply maintenance applications of 18 oz. per acre every 4 to 8 weeks through season or until soil temperatures reach 45°F or less.

A soil surfactant is recommended to best move the solution to the root zone of the turf. Consult manufacturer for product recommendations.

Foliar Spray Application: Mix Actinovate® Soluble with appropriate amount of water (50-150 gallons per acre). Apply in early morning or evening on wet turf.

For smaller quantities: For initial application or problem area use 1.25-oz of Actinovate® Soluble in 5 gallons of water per 1,000 sq. ft. of turf grass. For maintenance application use 0.5-oz of Actinovate® Soluble in 5 gallons of water per 1,000 sq. ft. of turf.

See application chart below for more detailed application instructions.

**APPLICATION CHART FOR GOLF COURSE, (FAIRWAYS, ROUGHS, GREENS, TEES),
COMMERCIAL, LAWNS RESIDENTIAL LAWNS, CEMETERIES, PARKS (AND SIMILAR SITES)
ATHLETIC FIELDS, SOD FARMS, SEED PRODUCTION, AND OTHER TURF**

Actinovate Soluble has no Pre-Harvest Interval. Under moderate to severe disease pressure, increase rates and reduce spray intervals or use in a tank mix or rotational program with other registered fungicides.

Turf and grass type	Disease	Rate	Application Instructions
<p>Bluegrass Bentgrass Bermuda grass (Common & Hybrid) Dichondra Fescue Orchard grass Poa Annua St. Augustine Ryegrass Zoysia Mixtures and other grasses or ornamental turf</p>	<p>Brown patch <i>Rhizoctonia solani</i> Take All Patch <i>Gaeumannomyces graminis</i> Dollar Spot <i>Lanzia</i> spp. <i>Moellerodiscus</i> spp. (formerly <i>Sclerotinia homeocarpa</i>) Powdery Mildew <i>Erysiphe graminis</i> Rust <i>Puccinia</i> spp. Anthraxnose <i>Colletotrichum graminicola</i> Grey Leaf Spot <i>Pyricularia grisea</i> Slime Molds <i>Mucilaga</i> and <i>Physarum</i></p>	<p>18-54 oz/acre (12-36 grams per 1,000 sq. ft.)</p>	<p><u>Drench Applications:</u> Mix 18-54 oz. Actinovate® Soluble with appropriate amount of water (100-150 gallons per acre). Consider use of a soil surfactant to best move the solution to the root zone of the turf. Consult manufacturer for product suggestions.</p> <p><i>Initial Application or Problem Areas:</i> Apply at a rate of 54 oz. of Actinovate® Soluble per acre of turf grass when soil temperatures are above 45°F.</p> <p><i>Maintenance:</i> Apply at a rate of 18 oz. of Actinovate® Soluble per acre of turf grass every 7-24 days through season or until soil temperatures reach 45°F or less.</p> <p><u>Spray Applications:</u> Mix 18-54 oz. of Actinovate® Soluble with appropriate amount of water (50-150 gallons per acre of turf grass). Apply at <i>initial application</i> or <i>maintenance</i> rates as above in early morning or evening on wet turf. Water in immediately after application with sprinklers for 3-6 minutes. Consider use of a soil surfactant to best move the solution to the root zone of the turf. Consult manufacturer for product suggestions.</p> <p>Continue applications at 7-24 day intervals through season or until soil temperatures fall to 45°F or lower.</p> <p><u>For Smaller Quantities:</u> <i>Initial Application or Problem Areas:</i> Use 1.25 oz (36 grams) of Actinovate® Soluble in 5 gallons of water per 1,000 sq. ft. of turf grass. <i>Maintenance:</i> Use 0.5 oz (14 grams) of Actinovate® Soluble in 5 gallons of water per 1,000 sq. ft. of turf grass. Consider use of a soil surfactant to best move the solution to the root zone of the turf. Consult manufacturer for product suggestions. Continue applications at 7-24 day intervals through season or until soil temperatures fall to 45°F or lower.</p>

LANDSCAPE (ORNAMENTALS, VEGETABLE GARDENS, GARDEN FRUIT TREES). AND INTERIORSCAPES

For Transplants, Installations and Established Plants: Dissolve 0.2-0.4 oz per 2 gallons of water to create a solution. Apply solution to soil around plants root system until soil is saturated without creating a run-off. Apply to plant before, during or after transplant.

For foliar spray: Dissolve 0.2-0.4 oz per 2 gallons of water and apply in order to acquire thorough uniform coverage. See application chart below for more detailed application instructions.

APPLICATION CHART FOR SOIL DRENCH & FOLIAR SPRAY ON LANDSCAPE & INTERIORSCAPES

Actinovate Soluble has no Pre-Harvest Interval.

Under moderate to severe disease pressure, increase rates and reduce spray intervals or use Actinovate Soluble in a tank mix or rotational program with other registered fungicides.

Crops	Foliar Disease	Soil Diseases	Rate	Application Instructions
<p>Interiorscape plants and trees</p> <p>Outdoor landscape ornamental plants, fruit trees, and vegetable gardens</p>	<p>Black spot of rose <i>Diplocarpon rosea</i></p> <p>Botrytis <i>Botrytis cinerea</i></p> <p>Downy Mildew <i>Peronospora</i> spp.</p> <p>Leaf spots <i>Alternaria</i> spp.</p> <p>Powdery mildew <i>Erysiphe</i> spp. <i>Oidium</i> spp. <i>Podosphaera</i> spp. <i>Sphaerotheca</i> spp. <i>Phytophthora</i> spp.</p> <p>Rust <i>Puccinia</i> spp.</p> <p>Fireblight <i>Erwinia</i></p>	<p><i>Pythium</i> spp.</p> <p><i>Phytophthora</i> spp.</p> <p><i>Fusarium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p> <p><i>Thielaviopsis</i></p> <p><i>Verticillium</i></p> <p><i>Sclerotinia</i></p>	<p>3-12 oz/100 gal (0.1-0.4 oz /2 gal)</p>	<p>Foliar Spray: Apply Actinovate Soluble at rates ranging from 3-12 oz of product in 100 gallons of water per acre. Make applications on a 3- to 14-day schedule. Begin applications when conditions favor disease development prior to the onset of disease. When conditions favor severe disease development shorten the spray interval or use a higher rate. Spray plants thoroughly wet to run off.</p> <p>Soil Application: Apply Actinovate Soluble at rates ranging from 4-6 oz of product in 100 gallons of water. Apply as a soil drench to base of plant and/or root ball until soil is saturated without run-off. Reapply every 4-12 weeks depending on disease pressure.</p>

CHEMIGATION

General Requirements:

- Apply Actinovate® Soluble at 3-12 oz per 20 -200 gallons of water.
- Apply Actinovate® Soluble only through 1) overhead boom and mist-type systems, 2) sprinklers including impact or micro-sprinklers, central pivot, lateral move, end tow, side wheel roll, traveler, solid set, or hand move systems 3) pressurized drench (flood) or drip (trickle) systems, 4) micro irrigation such as spaghetti tube or individual tube irrigation, 5) hand-held calibrated irrigation equipment such as hand-held wand with injector, and 6) ebb and flow systems.

Do not apply this product through any other type of irrigation system.

- Plant injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 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.

- 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.

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, back flow 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 flow 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.
- 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.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Sprinkler Chemigation Requirements:

- 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 back flow.
- 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 fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Drip Chemigation Requirements:

- 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 back flow.
- 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 inter-locking 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 fitted with a system interlock.
- 7) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 8) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 9) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 10) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Flood Chemigation Requirements:

- 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 back flow if water flow stops.
- 2) 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 back flow.
 - 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 fitted with a system interlock.

- 3) Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 4) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 5) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 6) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a dry, cool place out of direct sunlight and away from heat sources. Keep from overheating or freezing. Optimum storage temperature is 40° F to 85° F.

Pesticide Disposal: To avoid wastes use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments by industry).

Container Disposal:

Non-refillable container. Do not reuse or refill this container. Clean container promptly after emptying. Then offer for recycling if available or puncture and dispose of in sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Batch Code: _____

LIMITED WARRANTY/DISCLAIMER

To the extent consistent with applicable law manufacturer warrants that this product is suited for the labeled uses when applied according to label directions. To the extent consistent with applicable law manufacturer makes no warranty of merchantability. There are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Use By:

LOT NUMBER:

44/57

SUBLABEL E: AGRICULTURE PRODUCTION – SELECT MAJOR CROPS

(FRONT PANEL)

**ACTINOVATE® SOLUBLE
(ALTERNATE BRAND NAME: ACTINOGRO,)**

ACTIVE INGREDIENT:

Streptomyces lydicus WYEC 108*.....00.0371%

OTHER INGREDIENTS:99.9629%
100.0000%

*End-use product contains not less than 1 X 10⁷ colony forming units per gram *Streptomyces lydicus* WYEC 108

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

KEEP OUT OF REACH OF CHILDREN

CAUTION

See back panel for additional precautionary statements.

US Patent Number: 5,403,584

EPA Reg. No.: 73314-1

EPA Establishment No.: 73314-TX-001

Manufactured by:

Natural Industries, Inc.

6223 Theall Road

Houston, Texas 77066

Questions? (888) 261-4731

Net Contents:

(Back Panel)

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixer/loaders and applicators must wear a dust/mist-filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

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

Environmental Hazards:

For terrestrial uses: Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

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) 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 one (1) hour or until solution has dried.

Exception: If the product is soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter treated area if there is no contact with anything that has been treated.

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
- Waterproof gloves
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of the 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.

PRODUCT INFORMATION:

Actinovate® Soluble is a biological fungicide for the suppression of root rot and damping-off fungi and the suppression/control of foliar fungal pathogens. When used as a soil drench or seed treatment, soil borne fungi suppressed/controlled include *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Aphanomyces*, *Monosporascus*, *Armillaria*, *Sclerotinia*, *Gaeumannomyces*, *Postia*, *Verticillium* and *Geotrichum*. The active ingredient in Actinovate® Soluble colonizes the root system and protects it from harmful fungi. When used as a foliar spray, Actinovate® Soluble effectively suppresses/controls foliar diseases such as Powdery and Downy Mildew, *Botrytis*, *Monilinia*, *Anthraco*se, Greasy Spot, *Sclerotinia*, *Alternaria*, and *Erwinia*.

When applied to the soil, Actinovate® Soluble also breaks down minerals and micronutrients making them more available to plants resulting in increased size and vitality. Plants treated with Actinovate® Soluble as a soil application will become hardier, more vigorous and will have a robust and protected root system.”

INTEGRATED PEST MANAGEMENT (IPM):

Integrate Actinovate® Soluble into an overall disease and pest management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

USE RATE DETERMINATION:

Carefully read and follow all label directions, use rates, and restrictions. For best results, apply Actinovate® Soluble prior to or in the early stages of disease development. For proper foliar application, determine the number of acres to be treated, the specified label use rate, and select the appropriate gallonage to give thorough and uniform coverage of all plant parts to be protected. For proper soil application, determine the number of acres to be treated, the specified label use rate, and select the appropriate gallonage to give good saturation of the soil in order for the product to establish itself on the root system. For best results, apply product solution to damp soil. Maintaining moist soil after application will enable the product to perform as expected. Prepare only the amount of spray or soil drench solution to treat the measured area in the same day the product is prepared. Accurate spray equipment calibration is essential prior to use.

PREHARVEST INTERVAL:

Actinovate® Soluble can be applied up to and including the day of harvest.

APPLICATION DIRECTIONS:**Compatibility:**

Actinovate® Soluble is completely soluble and does not require agitation to keep suspended in a solution. Actinovate® Soluble is compatible with most chemical fungicides, insecticides and fertilizers. If tank mixes are desired, observe the most restrictive directions, precautions and limitations on labeling of all products used. Actinovate® Soluble can be tank mixed and dry mixed with most chemical fungicides, insecticides, and fertilizers unless otherwise restricted. Do not apply soil fumigants to the areas treated with Actinovate® Soluble. If fumigants are applied to the soil, all fumigant active ingredient must be completely dissipated prior to applying Actinovate® Soluble. Consult manufacturer for compatibility questions.

Application Timing:

Apply Actinovate® Soluble throughout the growing season from early spring to late fall from pre-plant and pre-emerge beginning when soil warms to 45° F to the production agriculture crops listed in the "Crops on Which Actinovate® Soluble May Be Used" section.

Note: Since Actinovate® Soluble contains live spores of a microbe, best results will be obtained if the product is used prior to disease onset. Actinovate® Soluble becomes active in soil or on the plant foliage when the temperatures are above 45° F and is not effective when temperatures remain cold. Actinovate® Soluble can be applied to sterilized or fumigated soil, but it must be applied after sterilization or fumigation active ingredient is completely dissipated.

Application Uses:

Actinovate® Soluble is a biological fungicide for use as a soil application (drench and in-furrow), seed treatment, bulb crop dusting treatment, and foliar application for production agriculture crops listed in the "Crops On Which Actinovate® Soluble May Be Used" section.

AGRICULTURE PRODUCTION

For soil treatment and seed treatment for the suppression/control of *Fusarium*, *Rhizoctonia*, *Pythium*, *Phytophthora*, *Phymatotrichum omnivorum* (cotton root rot), *Aphanomyces*, *Monosporascus*, *Armillaria*, *Sclerotinia*, *Gaeumannomyces*, *Postia*, *Verticillium* and *Geotrichum*.

For foliar treatment of Powdery and Downy Mildew, *Botrytis*, *Monilinia*, *Anthraco*se, Greasy Spot, *Sclerotinia*, *Alternaria*, and *Erwinia*.

Soil Treatment At Planting:

Use at planting, in-furrow, seeding, or transplant. Apply 1-12 oz. of Actinovate® Soluble in 10-200 gallons of water per acre. Refer to the "Crops On Which Actinovate® Soluble May Be Used" section for crop-specific application rates.

Soil Treatment Through Irrigation:

Actinovate® Soluble may be used in drip, overhead, or other irrigation systems listed in the "Chemigation" section at any stage of plant growth as a soil treatment. Apply 1-12 oz. of Actinovate® Soluble in 10-200 gallons of water per acre. See "Chemigation" section for additional information.

Seed Treatment:

Seed Spray or Slurry Coating: Apply this product through mist-type commercial seed treatment equipment, slurry or other comparable methods that provide thorough coverage of treated seed. Prior to planting, dissolve 2-18 oz. of Actinovate® Soluble in 4-oz of water and spray directly on 100 lbs. of seed.
Hopper Box Dry Coating: Apply directly to seed as a dry coating at a rate of 2-18 oz per 100 lbs of seed. Apply as to insure even coating of product on seeds.

Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

Seed treatment on agricultural establishment in hopper-box, planted box, or other seed treatment application at or immediately before planting is within the scope of WPS, while commercial treatment of seeds is not within the scope.

Foliar Treatment:

Use 1-6 oz of Actinovate® Soluble in 20-150 gallons of water per acre. Apply initial application prior to onset of disease season. Reapply every 7-14 days depending on disease pressure and environmental conditions. For best results, use a spreader-sticker (adjuvant) in conjunction with product application. Actinovate® Soluble can be used in all types of spray equipment including aerial applications.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and grower/treatment coordinator are responsible for considering all of these factors when making decisions.

If aerial application is desired, mix appropriate amount of Actinovate® Soluble and water in tank. Apply as a normal spray.

Crops On Which Actinovate® Soluble May Be Used:

CROPS	Foliar Spray Rate	Soil Drench Rate	Seed Treatment Rate
<p>Agronomic Field and Row Crops: Buckwheat, canola, flax, safflower, sunflower, succulent and dry peas, peanuts, soybeans, and sugarbeets</p> <p>Alfalfa Hay and Forage: Alfalfa, clover, vetch, trefoil and all forage grasses</p> <p>Legume Crops: Snap and dry beans, lentils, edamame, succulent and dry peas, peanuts and soybeans</p> <p>Cereal Grains Wheat, barley, oat, rye, millet, quinoa, buckwheat, rice, wild rice, triticale, sorghum</p> <p>Potatoes: All types of Irish potatoes and sweet potatoes</p> <p>Corn : Field corn, white corn, popcorn, seed corn and other corn crops</p>	<p>1-6 oz of Actinovate® Soluble /acre</p> <p>Reapply every 7-14 days or as needed. For best results, use with spreader-sticker.</p>	<p>1-12oz of Actinovate® Soluble/acre.</p> <p>Apply in furrow directly on seed piece when planting or through irrigation</p>	<p>Seed Spray/Slurry: 2-18 ounces of product dissolved in 4-oz of water/100 lbs of seed</p> <p>Hopper-Box Dry Coating: 2-18 oz of product/100 lbs of seed</p>

CHEMIGATION

General Requirements:

- Apply Actinovate® Soluble at 1-6 oz per 20 -200 gallons of water.
- Apply Actinovate® Soluble only through 1) overhead boom and mist-type systems, 2) sprinklers including impact or micro-sprinklers, central pivot, lateral move, end tow, side wheel roll, traveler, solid set, or hand move systems 3) pressurized drench (flood) or drip (trickle) systems, 4) micro irrigation such as spaghetti tube or individual tube irrigation, 5) hand-held calibrated irrigation equipment such as hand-held wand with injector, and 6) ebb and flow systems. Do not apply this product through any other type of irrigation system.
- Plant injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 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.
- 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.

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, back flow 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 flow 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.
- 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.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Sprinkler Chemigation Requirements:

- 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 back flow.
- 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 fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 9) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 10) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 11) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Drip Chemigation Requirements:

- 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 back flow.
- 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 inter-locking 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 fitted with a system interlock.
- 7) Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 8) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 9) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 10) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

Flood Chemigation Requirements:

- 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 back flow if water flow stops.
- 2) 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 back flow.
 - 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 fitted with a system interlock.

- 3) Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.
- 4) Application of the product may be made continuously for the duration of the water application or can be applied at the end or after the water application.
- 5) To mix in supply tank, fill tank half way with water and add product. Stir until completely dissolved. Fill tank with remaining amount of water.
- 6) Use product with 10-200 gallons of water per acre. Use enough water so as not to create excessive leaching or run off.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a dry, cool place out of direct sunlight and away from heat sources. Keep from overheating or freezing. Optimum storage temperature is 40° F to 85° F.

Pesticide Disposal: To avoid wastes use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments by industry).

Container Disposal:

Non-refillable container. Do not reuse or refill this container. Clean container promptly after emptying. Then offer for recycling if available or puncture and dispose of in sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Batch Code: _____

LIMITED WARRANTY/DISCLAIMER

To the extent consistent with applicable law manufacturer warrants that this product is suited for the labeled uses when applied according to label directions. To the extent consistent with applicable law

manufacturer makes no warranty of merchantability. There are no warranties that extend beyond the description on this label and in no event shall manufacturer be liable for any consequential damages.

Use By:

LOT NUMBER:

OPTIONAL LABEL CLAIMS

- Biological Fungus Control.
- For Use In Organic Farming
- For Organic Production
- For Organic Gardening
- For Organic Lawn Care
- For Use in Organic Production
- Biological Fungicide
- Controls soil-borne plant diseases such as *Pythium*, *Rhizoctonia*, *Phytophthora*, *Verticillium* and *Fusarium*
- 100% Soluble. Will not clog machinery.
- Enhances plant vitality.
- Encourages larger root systems.
- For Greenhouse, Nursery, Interiorscapes, Agriculture and Turf
- For turf diseases such as Brown Patch, Dollar Spot and Take-all Patch
- Use on Roses, Vegetables, Fruits, Flowering Plants, Trees and Shrubs.
- Fungicide that attacks harmful garden diseases
- Controls/Suppresses foliar diseases such as Powdery Mildew, Rust, Grey Mold, and Black Spot
- Controls Damping Off, and Root Rot.
- Aids in Turf Recovery
- For Home, Garden and Lawn Care Use
- Concentrated Formula
- Treats Up to 5,000 sq. ft. of lawn or 550 6" potted plants
- Easy To Use
- Easy tear opening
- Concentrated Powder
- Re-Sealable [pouch] [bag]
- For use with [hose-end] [sprayer] [pump up sprayer] [water can]
- Fight lawn & garden diseases such as Summer patch, dollar spot, damping off and root rot
- For use on turfgrass and outdoor ornamental plants, interiorscapes and gardens on or around sites such as golf courses, residential & commercial lawns, athletic fields, parks, cemeteries, sod farms and similar locations.
- Controls/suppresses soil-borne plant diseases such as root rots, Damping Off, Brown Patch, Summer Patch and Dollar Spot

- For use on all major agricultural crops including alfalfa (hay, forage), bean (all types), cereals, corn (all types), oilseeds (canola, sunflower, safflower, peanut, etc), peanut, peas (dry, fresh, sweet), potato, soybean and sugarbeet.
- Controls/suppresses soil-borne plant diseases, damping-off, and root diseases caused by *Pythium*, *Rhizoctonia*, *Phytophthora*, *Sclerotinia*, *Verticillium*, *Fusarium* when applied according to label directions.
- Controls/Suppresses Foliar Disease such as Powdery Mildew, Downy Mildew, *Botrytis*, *Sclerotinia*, *Monilinia*, *Alternaria*, *Erwinia*, when applied according to label directions.
- 100% water soluble formula.

