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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON D C 20460

OFFICE OF CHEMICAL SAFETY AND POLUTION PREVENTION

JUN 2 5 2012

Gary Orr Arysta LifeScience North America Corporation 15401 Weston Parkway, Suite 150 Cary, NC 27513

SUBJECT Label Amendment Chlorothalonil 82 5 WDG EPA Reg No 66330-382, Decision No 465957 Your Submission Dated May 24, 2012

Dear Mr Orr

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as amended, to clarify conifer use to specifically prohibit forest uses has been reviewed and found acceptable provided that you make the following labeling changes

- 1 On page 1, at the bottom left, after the company name and address, delete "ADXXXXXX"
- 2 On page 3, in the Agricultural Use Requirements section, first paragraph, 6<sup>th</sup> line add "(REI)" after "restricted entry interval"
- 3 On page 3, in the Agricultural Use Requirements section, second paragraph, delete "restricted entry interval" and the parenthesis around "(REI)"
- 4 On page 3, in the Agricultural Use Requirements section, "coveralls over short sleeved shirt and short pants" must be deleted and replaced with "Long sleeved shirt and long pants"
- 5 On page 3, under Agricultural Uses, delete "forests"
- 6 On page 6, under "Spray Drift Precautions", delete "forestry applications"
- 7 On page 14 change title "Plant Safety" to Plant Phytotoxicity", within this section on line 1 change "safe" to "non-phytotoxic" On line 5 change "safely" to "without phytotoxic effects" On line 7 change "plant safety" to "non-phytotoxic effects"

If you have any questions regarding this correspondence, contact Rose Kearns of my staff by phone at 703-305-5611 or via email at <u>kearns rosemary@epa gov</u> or myself at 703-308-9443 or via email at <u>kish tony@epa gov</u>

Sincerely, ow

Tony Kish Product Manager 22 Fungicide Branch Registration Division (7504P)

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# Chlorothalonıl 82 5 WDG Agrıcultural, Turf and Ornamental Fungıcıde

Active Ingredient Chlorothalonil (tetrachloroisophthalonitrile) Other Ingredients Total

82 5% 17 5% 100 0%

## KEEP OUT OF REACH OF CHILDREN

## DANGER/PELIGRO

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

Se	e Additional precautionary statements and directions for use inside booklet
	FIRST AID
lf in eyes	<ul> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes</li> <li>Remove contact lenses if present after the first 5 minutes then continue rinsing eye</li> <li>Rinse eye only with water Do not put eye drops drugs or ointments in eyes unless specifically recommended by a medical doctor or a poison control center</li> <li>Call a poison control center or doctor for treatment advice</li> </ul>
lf inhaled	<ul> <li>Move person to fresh air</li> <li>If person is not breathing call 911 or an ambulance then give artificial respiration preferably mouth-to-mouth if possible</li> <li>Call a poison control center or doctor for further treatment advice</li> </ul>
If on skin or	Take off contaminated clothing
clothing	<ul> <li>Rinse skin immediately with plenty of water for 15-20 minutes</li> <li>Call a poison control center or doctor for treatment advice</li> </ul>
	Note to Physician
recommended to	al damage may contraindicate the use of gastric lavage chemical adsorbents are o reduce adsorption of the product Persons suffering with temporary allergic skin spond to treatment with oral antihistamines and topical or oral steroids

If in the eyes the upper and lower lids should be retracted and irrigated and any particulate matter should be carefully removed from the conjunctival fornix Irrigation should be continued until the conjunctival sac is neutral on pH testing with universal indicator paper. Fluroscein staining is required to reveal the extent of corneal or conjunctival epithelial loss. Topical antibiotic ointments are indicated when corneal epithelial damage is identified. Use of steroid eye drops is not advocated unless expressly requested by an ophthalmologist.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment

#### HOT LINE NUMBER

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE Call PROSAR at 1-866-303-6952 or 1 651-632-8946 if calling from outside of the U S

> Manufactured for Arysta LifeScience North America LLC

15401 Weston Parkway Suite 150

Cary NC 27513

FOR CHEMICAL EMERGENCY Spill leak fire exposure or accident call CHEMTREC at 1-800-424 9300 or 1-703-527-3887 if calling from outside of the U S

EPA Reg No 66330-382 NET WEIGHT \_\_\_\_\_ ADXXXXX EPA Est \_\_\_\_\_

ACCEPTED with COMMENTS In EPA Letter Dated JUN 2 5 2012

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

# Hazards to Human and Domestic Animals DANGER/PELIGRO

Corrosive Causes irreversible eye damage Harmful if inhaled or swallowed Avoid contact with skin eyes or clothing Avoid breathing spray mist. Do not breathe dust. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

## **Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are made of any waterproof material If you want more options follow the instructions for Category A on an EPA chemical resistance category selection chart

Mixers loaders applicators and all other handlers must wear

- Coveralls over long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material
- Chemical resistant footwear plus socks
- Protective eyewear
- Chemical resistant headgear for overhead exposure
- Chemical resistant apron when cleaning equipment mixing or loading
- And a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N R P or HE filter
- For exposures in enclosed areas such as a greenhouse applicators and other handlers must wear a respirator with an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G) or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N R P or HE prefilter

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists use detergent and hot water. Keep and wash PPE separately from other laundry.

## Engineering Control Statements

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

## Users should

## **User Safety Recommendations**

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

## **Environmental Hazards**

This product is toxic to aquatic invertebrates and wildlife Do not apply directly to water to areas where surface water is present or to intertidal areas below the mean high water mark Drift and runoff may be hazardous to aquatic organisms in the neighboring areas Do not contaminate water when disposing of equipment wash water or rinsate

This chemical is known to leach through soil into groundwater under certain conditions as a result or label use. Use of this chemical in areas where soils are permeable particularly where the water table is shallow may result in groundwater contamination.

This chemical can contaminate surface water through spray drift Under some conditions it may have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes towards adjacent surface waters frequently flooded areas areas overlaying extremely shallow ground water areas with infield canals or ditches that drain to surface water areas not separated from adjacent surface waters with vegetated filter strips and areas over-laying tile drainage systems that drain to surface water

### **DIRECTIONS FOR USE**

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

Chlorothalonil 82 5 WDG should be used only in accordance with recommendations on this label or in separately published Arysta LifeScience supplemental labeling recommendations for this product

#### Agricultural Uses

For use to control diseases on turf in sod farms and commercial seed production farms and ornamentals in production operations such as farms forests nurseries and greenhouses

Do not apply this product in a way that will contact workers or other persons or pets either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe consult the agency responsible for pesticide regulation.

#### 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 protections 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 workers to enter treated areas during the restricted entry interval (REI) of 12 hours

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants soil or water is

- Coveralls over short-sleeved shirt and short pants
- Chemical resistant gloves made of any waterproof material
- Chemical resistant footwear plus socks
- Protective eyewear

Chemical resistant headgear for overhead exposure

Special Eye Irritation Provisions This product is a severe eye irritant Although the restricted entry interval expires after 12 hours for the next 6 1/2 days entry is permitted only when the following safety measures are provided

- 1 At least one container designed specifically for flushing eyes must be available in operating condition at the WPS required decontamination site intended for workers entering the treated area
- 2 Workers must be informed in a manner they can understand
  - That residues in the treated area may be highly irritating to their eyes
  - That they should take precautions such as refraining from rubbing their eyes to keep the residue out of their eyes
  - That if they do get residues in their eyes they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water
  - How to operate the eyeflush container

## Non-Agricultural Uses

For use to control diseases on turf on golf courses lawns around commercial and industrial buildings and professional and collegiate athletic fields

For use to control diseases on ornamentals on golf courses and landscape areas around residential institutional public commercial and industrial buildings parks recreational areas and athletic fields

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170) The WPS applies when this product is used to produce agricultural plants on farms forests nurseries or greenhouses

Do not enter or allow others to enter the treated area until sprays have dried

## STORAGE AND DISPOSAL

Do not contaminate water food or feed by storage or disposal

Pesticide Storage Store in a dry place

**Pesticide Disposal** Pesticide wastes are acutely hazardous Improper disposal of excess pesticide, spray mixture or rinsate in a violation of federal law. If these wastes cannot be disposed of by use according to label instructions contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance

## Container Handling

Nonrefillable container Do not reuse or refill this container Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by alternative methods allowed by state and local authorities.

Containers greater than 5 gallons Nonrefillable container Do not reuse or refill this container Triple rinse container (or equivalent) promptly after emptying Triple rinse as follows Empty the remaining contents into application equipment or a mix tank Fill the container 1/4 full with water Replace and tighten closures Tip container on its side and roll it back and forth ensuring at least one complete revolution for 30 seconds Stand the container on its end and tip it back and forth several times Turn the container over onto its other end and tip it back and for the several times Empty the rinsate into manufacturing equipment Repeat this procedure two more times Offer for recycling if available or puncture and dispose of in a sanitary landfill

## PRODUCT INFORMATION

Chlorothalonil 82.5 WDG provides excellent disease control when used according to label directions for control of a broad spectrum of plant diseases Chlorothalonil 82.5 WDG is recommended for use in programs which are compatible with the principles of Integrated Pest Management (IPM) which include the use of disease resistant crop varieties cultural practices pest scouting and disease forecasting systems which reduce unnecessary applications of pesticides

#### **Resistance Management**

Chlorothalonil 82.5 WDG is effective for strategic use in programs that attempt to minimize disease resistance to fungicides. Some other fungicides which are at risk from disease resistance exhibit a single-site mode of fungicidal action. Chlorothalonil 82.5 WDG with a multi-site mode of action may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your federal or state Cooperative Extension. Service representative for guidance on the proper use of Chlorothalonil 82.5 WDG in programs which seek to minimize the occurrence of disease resistance to other fungicides.

#### Mixing Instructions

Do not combine Chlorothalonil 82.5 WDG in the spray tank with pesticides surfactants or fertilizers unless your prior use has shown the combination physically compatible effective and noninjurious under your conditions of use Do not combine Chlorothalonil 82.5 WDG with Dipel® Latron B-1956® or Latron AG-98® Chipco® Signature™ horticultural oil and products containing xylene as phytotoxicity may result from the combination when applied to some species on this label

The required amount of Chlorothalonil 82.5 WDG should be added slowly into the spray tank during filling With concentrate sprays pre-mix the required amount of Chlorothalonil 82.5 WDG in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations

When tank mixing other products with Chlorothalonil 82.5 WDG follow the proper sequence of adding products to the spray tank. Wettable powders or water dispersible granules such as Chlorothalonil 82.5 WDG should be added to the water in the tank first followed by flowable products and emulsifiable concentrates added last. Provide sufficient mechanical or bypass agitation during mixing and application.

When tank mixing observe all directions precautions and limitations on labeling of all products used Consult compatibility charts or your local or State agricultural authorities for compatibility information. It is impossible to test every species and variety of plants under all conditions

#### RESTRICTIONS

Do not use on home lawns and turf sites associated with apartment buildings daycare centers playgrounds playfields recreational park athletic fields athletic fields located on or next to schools (ie elementary middle and high schools) campgrounds churches and theme parks

Agricultural Use Sites Only (sod farms farms nurseries and greenhouses) This product must not be applied within 150 feet (for aerial and airblast applications) or 25 feet (for ground applications) of marine/estuarine water bodies unless there is an untreated buffer area of that width between the area to be treated and the water body

## Spray Drift Precautions

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 the grower are responsible for considering all these factors when making decisions.

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The following drift management requirements must be followed to avoid off target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications public health uses or applications using dry formulations.

- 1 The distance of the outer most nozzles on the boom must not exceed <sup>3</sup>/<sub>4</sub> the length of the wingspan or rotor
- 2 Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees

Where states have more stringent regulations they should be observed

The applicator should be familiar with and take into account the information covered in the *Spray Drift Management* section

#### Spray Drift Management

[This section is advisory in nature and does not supersede the mandatory label requirements ]

### Information on Droplet Size

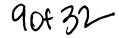
The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control Applying larger droplets reduces drift potential but will not prevent drift is applications are made improperly or under unfavorable conditions (See Wind Temperature)

#### Controlling Droplet Size

- Volume Use high flow rate nozzles to apply the highest practical spray volume Nozzles with higher rated flows produce larger droplets
- Pressure Do not exceed the nozzle manufacturers recommended pressures For many nozzle types lower pressure produces larger droplets When higher flow rates are needed use higher flow rate nozzles instead of increasing pressure
- Number of Nozzles Use the minimum number of nozzles that provide uniform coverage
- Nozzle Orientation Orienting the nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice Significant deflection from horizontal will reduce droplet size and increase drift potential
- Nozzle Type Use a nozzle type that is designed for the intended application. With most nozzle types narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift potential.

#### Boom Length

For some use patterns reducing the effective boom length to less than <sup>3</sup>/<sub>4</sub> of the wingspan or rotor length may further reduce drift without reducing swath width



## **Application Height**

Applications should not be made at a height greater than 10 ft above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind

#### Swath Adjustment

When applications are made with a crosswind the swath will be displaced downwind Therefore on the upwind and downwind edges of the field the applicator must compensate for this displacement by adjusting the path of the aircraft upwind Swath adjustment distance should increase with increasing drift potential (higher wind smaller drops etc.)

#### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### Temperature and Humidity

When making applications in low relative humidity set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry

## **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high Temperature inversions restrict vertical air mixing which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog however if fog is not present inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas bodies of water known habitat for threatened or endangered species nontarget crops) is minimal (e.g. when wind is blowing away from the sensitive areas)

#### APPLICATION

#### Application and Calibration Techniques for Chemigation

Apply this product only through center pivot motorized lateral move traveling gun solid set or portable (wheel move side roll end tow or hand move) irrigation system(s) Do not apply this product through any other type of irrigation system Do not use Chlorothalonil 82.5 WDG through sprinkler irrigation equipment on golf courses

Crop injury lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water

If you have questions about calibration you should contact State Extension Service specialists equipment manufactures 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

The system must contain a functional check valve vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow

The pesticide injection pipeline must contain a functional automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump

The pesticide injection pipeline must also contain a functional normally closed solenoidoperated 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

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

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

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

Spray mixture in the chemical supply tank must be agitated at all times otherwise settling and uneven application may occur. Do not apply when wind speed favors drift beyond the area intended for treatment

Always inject Chlorothalonil 82.5 WDG into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the pump

#### **Specific Instructions for 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 pump

- 4 The pesticide injection pipeline must contain a functional normally closed solenoidoperated 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

### Posting

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas labor camps businesses day care centers hospitals in-patient clinics nursing homes or any public areas such as schools parks playgrounds or other public facilities not including public roads or 2) when the chemigated area is open to the public

Posting must conform to the following requirements Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas When there are no usual points of entry signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2½ inches tall and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDE IN IRRIGATION WATER

This sign is in addition to any sign posted to comply with the Worker Protection Standard

#### **Specific Chemigation Instructions**

Chlorothalonil 82 5 WDG may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B below Determine which type of system is in place and then refer to the appropriate directions provided for each type

A Center Pivot Motorized Lateral Move and Traveling Gun Irrigation Equipment

For injection of pesticides these continuously moving systems must use a positive displacement injection pump of either diaphragm or piston type constructed of materials that are compatible with pesticides and capable of being fitted with a

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system interlock and capable of injection at pressures approximately 2-3 times those encountered within the irrigation water line. Venturi applicator units cannot be used on these systems

Thoroughly mix recommended amount of Chlorothalonil 82 5 WDG for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run Mixture in the chemical supply tank must be continuously agitated during the injection run Shut off injection equipment after one revolution or run but continue to operate irrigation system until Chlorothalonil 82 5 WDG has been cleared from last sprinkler head

B Solid Set and Portable (Wheel Move Side Roll End Tow or Hand Move) Irrigation Equipment

With stationary systems an effectively designed in-line Venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides however a positive-displacement pump can also be used

Determine acreage covered by sprinkler Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period

Mix desired amount of Chlorothalonil 82.5 WDG for acreage to be covered with water so that the total mixture of Chlorothalonil 82.5 WDG plus water in the injection tank is equal to the quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration Agitation is recommended Chlorothalonil 82.5 WDG can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Chlorothalonil 82.5 WDG has been cleared from last sprinkler head.

## DIRECTIONS FOR APPLICATION

#### Turf

Always use Chlorothalonil 82 5 WDG in conjunction with good turf management practices

Do not use on home lawns and turf sites associated with apartment buildings daycare centers playgrounds playfields recreational park athletic fields athletic fields located on or next to schools (i.e. elementary middle and high schools) campgrounds churches and theme parks

#### Sod Farms

Do not use for sod farms at application rates greater than 13 pounds of active ingredient per acre per year Do not apply more than 15 8 lb/A (5 8 oz/1 000 sq ft) of Chlorothalonil 82 5 WDG per growing season (13 lb ai/A) per growing season The minimum re-treatment interval for single application rates up to 8 8 lb/A (3 2 oz/1 000 sq ft) of Chlorothalonil 82 5 WDG (7 3 lb ai/A) is 7 days

Do not apply more than one application of a rate greater than 8 8 lb/A (3 2 oz/1 000 sq ft) of Chlorothalonil 82 5 WDG (7 3 lb ai/A) per growing season. The maximum single application rate is 8 8 lb/A (3 2 oz/1 000 sq ft) of Chlorothalonil 82 5 WDG (7 3 lb ai/A).

Apply Chlorothalonil 82 5 WDG in 90 to 450 gallons of water per acre (2 to 10 gallons of water per 1 000 sq ft) for tees and greens and 30 to 450 gallons of water per acre (0 7 to 10 gallons of water per 1 000 sq ft) for all other turf Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions use the highest rate and shortest interval corresponding with the application schedule selected from the table below.

		Pre-Disease Rates	Post-Disease Rates
Diseases Controlled	Application		
Pathogen(s)	Interval	oz product/	oz product/
	(days)	1 000 sq ft	1 000 sq ft
Dollar Spot			
Sclerotinia homeocarpa	7 to 10	1 0 <sup>ª</sup> to 1 8	
Lanzia spp	7 to 21	1 8 to 3 25	
Moellerodiscus spp	14		3 7 to 5 0
Leaf Spot Melting Out Brown Blight			
Drechslera spp	7 to 10	18	
(including D poae D siccans)	7 to 21	1 8 to 3 25	l l
Bipolaris sorokiniana	14	1010020	37 to 50
Curvularia spp			
Brown Patch			
Rhizoctonia solani	74-44		
R zeae	7 to 14	1 8 to 3 25	37 to 50
R cerealis	14		
Gray Leaf Spot			
Pyricularia grisea	7 to 10	1 8 to 3 25	3 7 to 5 0
P oryzae	14		
Red Thread	7 to 10	1 8 to 3 25	
Laetisaria fuciformis	14	3 25 to 5 0	50
Anthracnose	7 to 14	2 75 to 3 25	
Colletotrichum graminicola	14	3 25 to 5 0	
Copper Spot	14	3 7 to 5 0	50
Gloeocerscospora sorghi		5710000	
Stem Rust			
Puccinia graminis	14	3 7 to 5 0	50
Dichondra Leaf Spot (CA only)			
Altemaria spp	14	3 7 to 5 0	50
Gray Snow Mold <sup>b</sup>			
Typhula spp	30 <sup>°</sup>	50	
ι γρησία ορρ			
Pink Snow Mold <sup>d</sup>			
Fusarium Patch	21 to 28 <sup>e</sup>	50	
Microdochium nivale	211020		
Algae (algal scum)	7 += 4 4	1 9 to 5 0	<b>E</b> 0
	7 to 14	1 8 to 5 0	50

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<sup>a</sup>Low rate is not effective on intensively mowed turfgrasses such as golf course tees and greens <sup>b</sup>Apply before snow cover in autumn in 20 to 10 gallons of carrier per 1 000 sq ft <sup>c</sup> Tees and Greens If snow cover is intermittent or lacking during the winter you may make a second application <sup>d</sup>Do not apply on top of snow Apply in combination with Banner MAXX® Heritage® Medallion® or with products containing iprodione

<sup>e</sup>Tees and Greens If conditions are favorable for *Fusarium* you may make a second application

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Conversion Chart for Turf Rates

oz product/	lb product/	ib aı/
1 000 sq ft	acre	acre
10	2 5	21
18	50	4 1
2 75	75	62
3 25	88	73
37	10 0	8 25
50	13.6	11 3

**Turf Restrictions** 

- For rates up to and including 3 25 oz/1 000 sq ft The minimum re-treatment interval is 7 days
- For rates greater than 3 25 oz/1 000 sq ft
  - Limit of two applications per year on Tees and Greens The minimum re-treatment interval is 14 days Limit of one application per year on All Other Turf
  - Maximum single application rate of Chlorothalonil 82 5 WDG 50 oz/1 000 sq ft
- Maximum amount of Chlorothalonil 82 5 WDG per growing season

	oz/1 000 sq ft	lb/A	lb aı/A
Greens	32 5	88 5	73
Tees	23	63 0	52
Fairways and Roughs	11 6	31 5	26
All Other Turf	58	15 8	13

- Do not use Chlorothalonil 82 5 WDG on fine fescue turf due to the potential for phototoxicity or turfgrass injury
- Do not mow or water after treatment until spray deposited on turfgrass is thoroughly dry
- Sod farm turf treated with Chlorothalonil 82 5 WDG prior to harvest must be mechanically cut rolled and palletized

#### **Ornamental Plants**

Chlorothalonil 82 5 WDG may be used to control certain diseases of container bench flat plug bed or field-grown ornamentals in greenhouses shade-houses outdoor nurseries and residential and commercial landscapes

Apply Chlorothalonil 82 5 WDG at a rate of 1 4 pounds (1 16 lb ai) per 100 gallons of water unless other directions are given in the tables below Do not apply more than 44 pounds Chlorothalonil 82 5 WDG 36 4 lb ai (per acre per growing season to field grown ornamentals

Apply in a spray to run-off when conditions are favorable for disease development Repeat applications at 7 to 14 day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence apply Chlorothalonil 82 5 WDG at 7 day intervals. The minimum re-treatment interval is 7 days. Apply Chlorothalonil 82 5 WDG when plants are dry or nearly dry

Do not apply Chlorothalonil 82 5 WDG through high pressure spray equipment Do not use mistblowers cold fog or other fogging application equipment when making applications of Chlorothalonil 82 5 WDG in greenhouses

Do not eat edible parts from treated ornamental plants referred to in this Ornamental Plants section

Table 1 Ornamentals recommended for treatment with Chlorothalonil 82 5 WDG The numbers in parentheses refer to fungal diseases in Table 2 controlled by Chlorothalonil 82 5 WDG

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Andromeda (Pieris) (4)	Flowering Almond (1 2)	Oregon Grape (Mahonia) (6)		
Ash (Fraxinus) (1)	Flowering Cherry (1 2) Photinia (1)			
Aspen (1)	Flowering Peach (1 2)	Poplar (1)		
Azalea (1 2 4)	Flowering Plum (1 2)	Privet (Ligustrum) (1)		
Buckeye Horsechestnut (1)	Flowering Quince (1 2)	Rhododendron (1 2 4)		
Cherry-Laurel (1)	Hawthorn (1 6)	Sand Cherry (1 2)		
Crabapple (1 6 8)	Holly (1)	Sequoia (1)		
Dogwood (1)	Lilac (5)	Spiraea (1)		
Eucalyptus (3)	Magnolia (1)	Sycamore Planetree (1)		
Euonymus (1)	Maple (1)	Viburnum (5)		
Firethorn (Pyracantha) (1)	Mountain Laurel (1)	Walnut (Juglans) (1)		
	Oak (red group only) (17)			
Flowering Plants <sup>a</sup> , Bulbs ar	nd Corms			
Arabian Violet (2)	Geranium (1 6)	Narcissus (1)		
Begonia (1)	Gladiolus (1 2)	Pansy (1)		
Caladium (1)	Hollyhock (6) Petunia (1 4)			
Camellia (2)	Hydrangea (foliage only) (1 6)	Phlox (1)		
Carnation (1 2)	Iris (1 2)	Poinsettia⁵ (1)		
Chrysanthemum (1 2)	Iris Bulbous (1)	Rose <sup>c</sup> (1)		
Crocus (1)	Lily (1)	Statice (1)		
Daffodil (1)	Lily Asiatic (1)	Tulip (1)		
Daisy (1)	Marigold (1)	Zinnia (1 5)		
Foliage Plants				
Aglaonema (1)	Ficus (1)	Peperomia (1)		
Areca palm (1)	Lipstick plant (1)	Philodendron (1 4)		
Artemesia (1)	Ming aralia (1)	Prayer plant (Maranta) (1)		
Dumbcane (Diffenbachia) (1)	Oyster plant (Rhoeo) (1)	Syngonium (1)		
Dracaena (1)	Pachysandra <sup>d</sup> (1)	Zebra plant (Aphelandra) (1)		
	Parlor palm (Chamaedorea)			
Fatsia (Aralia) (1)	(1)			
<sup>a</sup> Avoid applications during bloom pe	riod on plants where flower injury is una	cceptable		
	act formation phytotoxicity is possible o			
	/DG (0 825 lb al) per 100 gallons of wate			
<sup>o</sup> Use 2 5 pounds of Chlorothalonil 8	2 5 WDG (2 1 lb aı) per 100 gallons of w	vater		

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## Table 2 Diseases Controlled with Chlorothalonil 82 5 WDG

1 Leaf Spots/Foliar Blights		
Actinopelte leaf spot	Coryneum blight (shothole)	Mycosphaerella ray blight
Alternaria leaf spot/leaf blight	Myrothecium leaf spot brown rot	
Anthracnose leaf blotch spot	Cylindrosporium leaf spot	Nematostoma leaf blight
Anthracnose (Discula) blight	Dactylaria leaf spot	Phyliosticta leaf spot
Ascochyta blight	Didymellina leaf spot	Ramularia leaf spot
Bipolaris (Helminthosporium) leaf spot	Drechslera leaf spot	Septoria leaf spot Rhizoctonia web blight
Black spot on roses	Fabraea (Entomosporium) leaf spot	Sphaeropsis leaf spot
Botrytis leaf spot leaf blight	Fusarium leaf spot	Stagonospora leaf scorch
Cephalosporium leaf spot	Gloeosporium black leaf spot	Tan leaf spot (Curvularia)
Cercospora leaf spot	Ink spot (Drechslera)	Volutella leaf blight
Cercosporidium leaf spot	Marssonina leaf spot	
Corynespora leaf spot	Monilinia blossom blight twig blight	
2 Flower spots/blights		
Botrytis flower spot flower blight	Monilinia blossom blight	Rhizopus blossom blight
Curvularia flower spot	Ovulinia flower blight	Sclerotinia flower blight
3 Cylindrocladium stem can	(er	
4 Phytophthora leaf blight, d	leback	
5 Powdery mildews		
Erysiphe cichoracearum	Microsphaera spp	
6 Rusts		
Gymnosporangium spp	Pucciniastrum hydrangeae	Puccinia spp
7 Taphrina blister		
8 Scab (Venturia inaequalis)		

#### Plant Safety

Chlorothalonil 82 5 WDG has been shown to be safe when applied at the recommended rates to the ornamental plants listed in the following tables. However, due to the large number of genera species and varieties of ornamental and nursery plants, it is impossible to test every one for tolerance to Chlorothalonil 82 5 WDG. Neither the manufacturer nor the seller has determined whether Chlorothalonil 82 5 WDG can be used safely on general species or varieties of ornamental and nursery plants not specified on this label. The professional user should conduct small scale testing at the recommended rates to ensure plant safety prior to broad scale commercial use on plant genera and species not listed in this label. Applications made during bloom may damage flowers and/or fruits.

Do not apply Chlorothalonil 82 5 WDG to either green or variegated Pittosporum or to Schefflera as multiple applications may cause phytotoxic responses

Do not apply Chlorothalonil 82 5 WDG to ferns

Table 3 The following ornamental plant species that have been tested with Chlorothalonil 82 5 WDG at recommended rates did not exhibit phytotoxicity

COMMON NAME		
Aechmea	Golden Pothos Scindapsus	
Aluminum Plant	Impatiens	
Aster	Jade Plant	
Baby s Breath	Japanese Holly	
Birdsnest Sansevieria	Natal plum	
Bleeding Heart	Norfolk Island Pine	
Bougainvillea	Peacock Plant	
Caladium	Piggy-back Plant	
Chinese Holly	Purple Passion Vine	
Christmas Cactus	Silver-nerve Plant	
Croton	Spineless Yucca	
False Aralia	Ti Plant	
Flame Violet	Venus Fly Trap	
Gerbera Daisy	Wax Plant	

#### Bulb and Corm Dip

Chlorothalonil 82 5 WDG may be used to control bulb and corm diseases of ornamental flowering plants

Crop	Diseases	lb Product per 100 gal*	Application Directions
Caladium Crocus Daffodils Iris Lily (bulb) Tulips	Basal Rot Neck Rot Other bulb rot diseases caused by <i>Mucor</i> spp <i>Zygorrhynchus</i> spp <i>Rhizopus</i> spp Curvularia spp <i>Rhizoctonia</i> spp <i>Fusanum oxysporum</i>	2 5 to 5 0	Dip bulbs from 15 minutes up to 4 hours prior to planting Add the recommended diluted mixture of Chlorothalonil 82 5 WDG to the dip tanks to maintain dip solution at levels needed to achieve complete bulb coverage
Gladiolus	Botrytis spp Curvularia spp	2 5	Recharge dip tanks with 0 3 lbs product per 20 000 corms Treat corms once before storage and once before planting Allow to drain and dry before handling corms

Application of Dip Tank Treatment Water Spent dip tank treatment water may be applied using ground equipment to bulb fields for basal neck or other bulb rots

#### Conifers

Apply Chlorothalonil 82 5 WDG in sufficient water and with proper calibration to obtain uniform coverage of tree canopy

Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy If application with ground equipment is not feasible. Chlorothalonil 82.5 WDG may be applied with aircraft. The minimum volume for application by aircraft to conifer stands and Christmas trees is 10 gallons per acre. The minimum volume for application by ground equipment to conifer nursery beds is 5 gallons per acres. For conifers the maximum volume is 100 gallons per acre.

When concentrate sprays are used or when treating immature trees the lower rate of Chlorothalonil 82 5 WDG may be used Do not allow livestock to graze in treated areas

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Do not apply Chlorothalonil 82.5 WDG through high pressure spray equipment. Do not use mistblowers cold fog or other fogging application equipment when making applications of Chlorothalonil 82.5 WDG in greenhouses.

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## Do not use on blue spruce

	Ib Product Per (Ib aı per)			
CROP	DISEASES (Pathogen)	Acre	100 gal *	APPLICATION DIRECTIONS
Conifers (pines spruce	Swiss needlecast (Phaeocryptopus gaeumannii)	2 5 to 5 0 (2 1 to 4 1)	2 5 to 5 0 (2 1 to 4 1)	Single application technique In Christmas plantations or conifer stands make one application in the spring when new shoot growth is ½ to 2 inches in length
Douglas fir)	Scleroderris canker (pines) ( <i>Gremmeniella</i> <i>abietina</i> ) Swiss needlecast ( <i>P gaeumannii</i> )	1 25 to 2 5 (1 0 to 2 1)	1 25 to 2 5 (1 0 to 2 1)	Make the first application in spring when new shoot growth is ½ to 2 inches in length Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development For use in nursery beds apply the highest rate specified on a 3 week schedule
	( <i>r gaedinaniii)</i> Sirococcus tip blight ( <i>S conigenus</i> )	1 8 to 3 2 (1 5 to 2 6)	1 8 to 3 2 (1 5 to 2 6)	
	Rhizosphaera needlecast (spruces) ( <i>Rhizosphaera</i> spp) Scirrhia brown spot (pines) ( <i>Mycosphaerella</i> <i>dearnessii</i> )	50 (41)	50 (41)	
	Cyclaneusma and Lophodermium needlecasts (pines)	2 5 to 5 0 (2 1 to 4 1)	2 5 to 5 0 (2 1 to 4 1)	Apply in early spring prior to budbreak Repeat applications at approximately 6 to 8 week intervals until spore release ceases in late fall Apply monthly during periods of frequent rainfall and where Lophodermium infections occur during dormancy (Pacific Northwest) During drought periods applications may be suspended then resumed upon next occurrence of needle wetness
	Rhabdocline needlecast (Douglas fir)	1 4 to 2 5 (1 1 to 2 1)	1 4 to 2 5 (1 1 to 2 1)	Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development in plantations of mixed provenance or when irregular budbreak occurs apply weekly until all trees have broken bud then every 3 to 4 weeks as specified above in nursery beds use the high rate on a 3 week schedule
	Botrytis seedling blight Phoma Twig Blight	1 4 to 2 5 (1 1 to 2 1)	1 4 to 2 5 (1 1 to 2 1)	Begin applications in nursery beds when seedlings are 4 inches tall and when cool moist conditions favor disease development Make additional applications at 7 to 14 day intervals as long as disease favorable conditions persist
	Autoecious needle rust (Weir s cushion) (spruce)	50 (41)	50 (41)	Begin applications when 10% of buds have broken and twice thereafter at 7 10 day intervals

- The minimum re treatment interval for established trees is 21 days. The minimum re treatment interval in nursery beds is 7 days.
- DO NOT use on forests

\*Volumetric rates to be used only with full dilute spray volume specified on this label for tree and orchard crops

## **Nurseries, Gardens and Landscapes**

Chlorothalonil 82.5 WDG may be applied by ground application to plants in production nurseries gardens and landscapes to control certain diseases. Follow pre-harvest interval following applications prior to consuming fruits nuts or other produce from the treated areas

### Fruit and Nut Trees

Apply Chlorothalonil 82 5 WDG in sufficient water and with proper calibration to obtain uniform coverage of tree canopy For fruit and nut trees the maximum volume is 300 gallons per acre unless indicated otherwise in the specified use directions. Apply by ground equipment only

Do not allow livestock to graze in treated areas

#### Almonds

	lb Product Per (lb aı per)		
DISEASES (Pathogen)	Acre	100 gal*	APPLICATION DIRECTIONS
Blossom Blight/brown rot ( <i>Monilinia</i> spp) Shot hole ( <i>Wilsonomyces carpophilus</i> )	36 (30)	12 (10)	Use water volumes of 20 300 gallons per acre For blossom blight begin application at popcorn (pink bud) and follow with an application at full bloom If weather is still conducive for disease development another application may be made at petal fall
Scab (Ventuna carpophilia)			For control of shothole make an application in the autumn at leaf fall in the spring make the first application at budbreak followed by an application at shuck split to control nut infections and to control scab

Specific Use Restrictions Do not apply more than 22.8 pounds Chlorothalonil 82.5 WDG (18.75 lb ai) per acre during each growing season (leaf fall through shuck split) Do not apply within 150 days of harvest

#### Filberts (Hazelnuts)

		lb Product Per (lb aı per)		
n) Acre 100 gal *	APPLICATION DIRECTIONS			
6 0)	12 (10)	Use a water volume of 20 to 300 gallons per acre Begin applications at the onset of disease or when weather conditions favor disease development Make applications on a 14 28 day schedule using the shorter interval under heavy disease pressure (the minimum re treatment interval is 14 days)		
	3 0)	<u> </u>		

season Do not apply within 120 days of harvest Do not apply through irrigation Do not apply within 120 days of harvest Do not apply through irrigation Do not apply with oils other pesticides surfactants or fertilizers. Do not apply within one week of an oil-based pesticide application.

#### Peach, Nectarine, Apricot, Cherry, Plum, Prune

	Lb Product Per (Ib aı per)		
DISEASES (Pathogen)	Acre	100 gai*	APPLICATION DIRECTIONS
Leaf curl	2 8 to 3 8	0 9 to 1 25	For best control of both diseases apply at leaf
(Taphrina deformans)	(2 3 to 3 1)	(0 75 to 1 0)	fall in late autumn using sufficient water and

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Shot hole (Wilsonomyces carpophilus)			proper sprayer calibration to obtain uniform coverage When conditions favor high disease levels use the high rate of application and apply once or twice more in mid to late winter before budswell if the leaf fall application is not practical application is of Chlorothalonii 82.5 WDG for control of leaf curl may be made at any time prior to budswell the following spring Where shothole occurs also apply at budbreak to protect newly emerging leaves and at shuck split to prevent fruit infections
Lacy (russet) scab	2 8 to 3 8	0 9 to 1 25	Make one application at popcorn (pink red or
(plum/prune)	(2 3 to 3 1)	(0 75 to 1 0)	early white bud) and a second application at full bloom If weather conditions favor disease
Brown rot blossom blight ( <i>Monilinia</i> spp )			development make an additional application at petal fall
Cherry leaf spot	2 8 to 3 8	0 9 to 1 25	In addition to the bloom application above
(Blumeriella jaapii)	(2 3 to 3 1)	(0 75 to 1 0)	make one application at shuck split Do not apply Chlorothalonil 82.5 WDG after shuck split and before harvest If additional disease control is needed before harvest use another
Scab			registered fungicide
(Cladosporium carpophilum)			
· · · · · · · · · · · · · · · · ·			For control of cherry leaf spot after harvest
Black knot (cherry plum)			make one application to foliage within 7 days
(Apiosporina			after fruit is removed. In orchards with a
morbosa)			history of high leaf spot incidence make a second application 10 14 days later
Specific Use Restrictions Do not appl	y more than 18 8 pc	unds of Daconil SDG	(15 5 lb ai) per acre during each growing season
Chlorothalonil 82 5 WDG may be app			

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## Pistachio

DISEASES (Pathogens) Ib Product F			APPLICATION DIRECTIONS
	Acre	100 gal*	
Botryosphaeria blight (B dothidea)	5 4 (4 5)	2 7 (2 2)	Use a water volume of 20 to 200 gallons per acre Make the first application at the beginning of the blossom period followed by an application at full
Suppression Alternaria late blight (A alternate)			bioom Make additional applications as required a 28 day schedule (the minimum re treatminterval is 28 days) For Septoria and Botrytis of the higher rate if disease pressure is severe
Septoria leaf spot (S pistacina)	3 6 to 5 4 (3 0 to 4 5)	1 8 to 2 7 (1 5 to 2 2)	NOTE Use of this product may result in speckling of reddening of the fruit hull (epicarp) This effect is
Botrytis blight ( <i>B cinerea</i> )			superficial and has not resulted in any change in nut quality
Specific Use Restrictions Don apply within 14 days of harvest	ot apply more than	27 pounds Chloro	thalonil 82 5 WDG (22 5 lb ai) per season Do not

Volumetric rates to be used only with full dilute spray volume specified on this label for tree and orchard crops

## **Vegetable and Fruits**

Apply Chlorothalonil 82 5 WDG in sufficient water and with proper calibration to obtain uniform coverage For vegetables and fruits the maximum volume is 150 gallons per acre unless indicated otherwise in the specific use directions. Apply by ground equipment only

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#### Asparagus

lb Product/A (lb aı/A)	APPLICATION DIRECTIONS
1 8 to 3 6 (1 5 to 3 0	Use water volumes of 25 50 gallons per acre Begin applications following final harvest of spears Repeat applications at 14 28 day intervals (the minimum re
	treatment interval is 14 days) depending on disease pressure. Use the higher rate and shorter interval if disease severity begins to increase during the
	season or weather conditions are conducive for severe epidemics
	(lb aı/A) 1 8 to 3 6

Specific Use Restrictions Do not apply more than 11 pounds Chlorothalonil 82.5 WDG (9.0 lb ai) per acre during each growing season. Do not apply within 190 days (120 days in CA and AZ) of the harvest of spears in the following season.

## Beans (Snap)

DISEASES (Pathogens)	lb Product/A (lb aɪ/A)	APPLICATION DIRECTIONS
Rust (Uromyces appendiculatus)	1 25 to 2 7 (1 0 to 2 2)	Use in sufficient water to obtain adequate coverage Begin applications during early bloom stage or when disease first threatens and repeat as necessary (the minimum re
Botrytis blight (gray mold) ( <i>B cinerea</i> )	27 (22)	treatment interval is 7 days) to maintain control
Specific Use Restrictions Do not appl growing season Do not apply within 7 da	• •	rothalonil 82 5 WDG (9 0 lb ai) per acre during each

#### Beans (Dry) (except soybeans), including adzuki bean, broad bean, dry bean, lablab bean, navy bean, kidney bean, lima bean, moth bean, mung bean, pink bean, pinto bean, tepary bean, urd bean, yardlong bean, catjang, chickpea (garbanzo), cowpea, lupin, grain lupin, rice bean, runner bean, jackbean, blackeyed pea, southern pea

	Ib Product/A	
DISEASES (Pathogens)	(Ib aı/A)	APPLICATION DIRECTIONS
Rust	1 25 to 1 8	Use in sufficient water to obtain adequate
(Uromyces	(1 0 to 1 5)	coverage Begin applications at first onset of
appendiculaus)		disease which may occur as early as 2 to 4 weeks before flowering Repeat applications
Anthracnose		at 7 to 10 day intervals (the minimum re treatment interval is 7 days) For use only on
(Colletotrichum		beans to be harvested dry with pods removed
lındemuthıanum)		
Downy mildew		
(Phytophthora		
nıcotianae)		
Cercospora leaf blotch		
(C cruenta)		
Ascochyta blight		
(A phaseolorum)		
		othalonil 82 5 WDG (6 0 lb ai) per acre during each
growing season Do not apply within 14	days of harvest	

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## Blueberries

(Ib aı/A)	APPLICATION DIRECTIONS
	Chlorothalonil 82 5 WDG should be integrated
(2 2 to 3 0)	which includes alternation with a fungicide
	with a different mode of action Diseases may
	only be suppressed and resetting may occur
	under heavy disease pressure or unfavorable
	environmental conditions
	Apply in sufficient water to obtain adequate
	coverage normally 20 100 gallons per acre
	Begin applications at budbreak (green tip) and repeat at 10 day intervals through early bloom
	(the minimum re treatment interval is 10
	days) Under heavy disease pressure use the
	higher rate
3 to 4	Foliar Use After Harvest (after all bernes are
(2 25 to 3 0)	harvested) To maintain healthy leaves for the
	following season apply in sufficient water to
	obtain adequate coverage (normally 20-100
	gallons per acre) Repeat at 10 14 day
	Intervals (the minimum re treatment interval is 10 days)
	2 7 to 3 6 (2 2 to 3 0) 3 to 4

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Specific Use Restrictions Do not apply more than 10 9 pounds Chlorothalonil 82 5 WDG (9 0 lb ai) per acre during each growing season Do not apply after full bloom (except for foliar use after harvest) or within 42 days of harvest

## Cabbage, Chinese Cabbage (tight headed varieties only), Cauliflower, Broccoli, Chinese Broccoli, Brussels Sprouts

DISEASES (Pathogen)	lb Product/A (lb aı/A)	APPLICATION DIRECTIONS
Alternaria leaf spot ( <i>Alternaria</i> spp ) Downy mildew ( <i>Peronospora parastica</i> )	1 4 (1 2)	Use in sufficient water to obtain adequate coverage Begin applications after transplants are set in field or shortly after emergence of field-seeded crop or when conditions favor disease development Repeat at 7 to 10 day intervals (the minimum re treatment interval is 7 days) to maintain control
Ring spot (California only)	1 4 (1 2)	For field seeded brussels sprouts begin applications at time of early sprout development or when conditions favor disease development Repeat at 7 to 10 day intervals (the minimum re-treatment interval is 7 days) to maintain control

growing season Do not apply within 7 days of harvest

### Carrot

DISEASES (Pathogen)	Lb Product/A (Ib aı/A)	APPLICATION DIRECTIONS
Cercospora leaf spot	1 4 to 1 8	Use in sufficient water to obtain adequate
(C carotae)	(1 2 to 1 5)	coverage Start applications when disease threatens and repeat at 7 to 10 day intervals
Alternaria leaf blight (A dauci)		(the minimum re treatment interval is 7 days) to maintain control
Specific Use Restrictions Do not apply m	ore than 18 2 pounds Chlorothalor	nl 82 5 WDG (15 lb ai) per acre during each
growing season Chlorothalonil 82 5 WDC	I may be applied the day of harves	t

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	Lbs Product/A	
DISEASES (Pathogen)	(lb aɪ/A)	Application Directions
Early blight	1 8 to 2 7	Use in sufficient water to obtain adequate
(Cercospora apıı)	(1 5 to 2 2)	coverage Start applications when transplants
Late blight (Septoria apicola)		are set in the field and repeat at a 7-day interval as needed to maintain control (the minimum re treatment interval is 7 days)
Basal stalk rot		
(Rhizoctonia solani)		
(		
Suppression (7 day schedule)	27	-
Pink rot	(2 2)	
(Sclerotinia sclerotiorum)		
Early blight	1 4 to 1 8 lb per 100	For celery seedbeds apply in a spray volume
(Cercospora apıı)	gal	of 125 gallons per acre twice weekly or as
	(1 2 to 1 5 lb ai per	needed to maintain control Start applications
Late blight	100 gal )	shortly after crop emergence Use the higher rate under severe disease conditions
(Septoria apicola)		
Specific Use Restrictions Do not apply more than 2		82 5 WDG (18 lb ai) per acre during each
growing season Do not apply within 7 days of harve	est	

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#### Corn (sweet)

DISEASES (Pathogen)	lb Product/A (lb aı/)	Application Directions
Helminthosporium leaf blights Rust ( <i>Puccinia</i> spp)	0 7 to 1 8 (0 6 to 1 5)	Use in sufficient water to obtain adequate coverage Begin applications when conditions favor disease development and repeat at a 7 day interval as required to maintain control (the minimum re treatment interval is 7 days) Under severe conditions use 1 4 to 1 8 pounds Chlorothalonil 82 5 WDG per acre
Specific Use Restrictions Do not apply more growing season Do not apply within 14 days graze in treated fields Do not ensile treated of	of harvest Do not apply to sw	eet corn to be processed Do not allow livestock to

## Cranberry

DISEASES (Pathogen)	Ib Product/A (Ib aı/A)	Application Directions
Fruit rots Lophodermium leaf/twig blight ( <i>L hypophyllum</i> )	3 8 to 6 0 (3 1 to 5 0)	Apply at early bloom and repeat at 10 to 14 day intervals (the minimum re treatment interval is 10 days) Under severe disease conditions use 6.0 pounds of Chlorothalonil 82.5 WDG (5.0 lb ai) per acre rate on a 10 day schedule
Upright Dieback (Phomopsis vaccinii)	3 8 to 6 0 (3 1 to 5 0)	Apply in sufficient water to obtain coverage of uprights and runners Make the first application before bloom at the time shoots begin growth in the spring Make additional applications at 10 14 day intervals
Specific Use Restrictions Do not apply more th	nan 18 2 pounds Chlorothal	

growing season. Do not apply within 50 days before harvest. Do not apply to beds when flooded or allow release of irrigation water from beds for at least 3 days following application.

Ib Product/A (lbs ai/A) **DISEASES** (Pathogen) Application Directions 14 to 18 Target spot Use in sufficient water to obtain adequate coverage Begin applications when plants are (1 2 to 1 5) (Corynespora cassiicola) in first true leaf stage or when conditions are favorable for disease development Repeat Anthracnose applications at 7 day intervals (the minimum (Colletotrichum spp) re-treatment interval is 7 days) Downy mildew Note Spraying mature watermelons may (Pseudoperonospora cubensis) result in sunburn of the upper surface of the Cercospora leaf spot 18 to 27 fruit Do not apply Chlorothalonil 82 5 WDG to (15 to 22) watermelons when any of the following (C citrullina) conditions are present Intense heat and sunlight 1 Gummy stem blight/ vine decline 2 Drought conditions (Didvmella bryoniae) 3 Poor vine canopy Other crop and environmental 4 Alternaria leaf blight conditions which may be conducive (A cucumenna) to increased natural sunburn Do not combine Chlorothalonil 82 5 WDG with Alternaria leaf spot anything except water for application to watermelons unless prior use has shown the (A alternate) combination to be non injurious to watermelons under your conditions of use Scab (Cladosporium cucumerinum) Powdery mildew (Sphaerotheca only) Specific Use Restrictions Do not apply more than 19 1 pounds Chlorothalonil 82 5 WDG (15 75 lb ai) per acre during each growing season Chlorothalonil 82 5 WDG may be applied the day of harvest

# Cucurbits, including Cucumber, Cantaloupe, Muskmelon, Honeydew melon, Watermelon, Squash, Pumpkin

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### **Grasses Grown for Seed**

DISEASES (Pathogen)	Ib Product/A (Ib aı/A)	Application Directions
Stem rust	0 9 to 1 4 (0 75 to 1 125)	Use in sufficient water to obtain adequate coverage Begin applications during stem
Leaf rust	(**************************************	elongation when conditions favor disease development Re-apply at flag (top) leaf
Stripe rust		emergence and repeat applications at 14 day intervals (the minimum re-treatment
Septoria leaf spot		interval is 14 days)
Glume blotch		Apply by ground air or chemigation
Bipolaris and Drechslera leaf spots		
Selenophoma (eyespot)	1 4 to 1 8 (0 75 to 1 5)	

**Restrictions and Limitations** 

- DO NOT apply more than 5 4 lbs of Chlorothalonil 82 5 WDG (4 5 lb ai) per acre during each growing season
- DO NOT apply within 14 days of harvest
- DO NOT allow livestock to graze in treated areas or feed hay produced before harvest. Feeding of treated plant parts after harvest of seed is allowed

	Ib Product/A	
DISEASES (Pathogen)	(ib aı/A)	Application Directions
Anthracnose (Colletotrichum spp)	1 8 to 3 1 (1 5 to 2 6)	Use a water volume of 20 to 300 gallons per acre Begin applications at early bloom and repeat on a 7-14 day interval until early frui- development Begin the season with the 14 lb rate on a 14-day interval (the minimum re treatment interval is 7 days) If disease pressure is severe use the higher rate and shorter interval

Specific Use Restrictions Do not apply more than 29 pounds Chlorothalonil 82 5 WDG (24 0 lb ai) per acre during each growing season Do not apply within 21 days of harvest

## Mint (Indiana, Michigan and Wisconsin only)

DISEASES (Pathogen)	Lbs Product/A (Ib aı/A)	Application Directions
Rust ( <i>Puccinia menthae</i> ) Septoria leaf spot	12 (10)	Use in sufficient water to obtain adequate coverage normally 20 to 150 gallons per acre for concentrate ground applications Begin applications when emerging plants are 4.8
(S menthae)		inches high Repeat applications at 7 to 10 day intervals to maintain control (the minimum re treatment interval is 7 days)
		1 82 5 WDG (3 lb ai) per acre during each growing ed mint hay from treated fields to livestock

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## Onion (dry bulb) and Garlic

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	Ib Product/A				
DISEASES (Pathogen)	(Ib aı/A)	Application	n Directions		
Botrytis leaf blight	0 9 to 2 7	Use in suffic	ent water to	obtain adequi	ate coverage
( <i>Botrytis</i> spp )	(0 75 to 2 2)		rothalonıl 82 5		
Purple blotch		fungicide r	ease monitor ates and fr disease hazar	requency of	
(Alternaria pom)		Apply Chloro	thalonıl 82 5 V	VDG as follow	s
Suppression			Low	Low Disease	
Botrytis neck rot			Disease	Hazard &	
			Hazard &	Some	High
Down mildew			Prior to	Disease	Disease
(Peronospora			Infection	Present	Hazard
destructor)		Rate per Acre	09	1 25 lb	27 lb
		Acie	09	7 10 days	2710
		Frequency	10 days	r io days	7 davs
			sion of neck		
	1		ng 1 25 to 2 7 I		
			n re treatment		
Specific Use Restrictions Do not apply		othalonil 82 5 WI	DG (15 lb aı) p	er acre during	each
growing season Do not apply within 7	days of harvest				

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# Onion (green bunching), Leek, Shallots Onion and Garlic (grown for seed)

DISEASES (Pathogen)	Ib Product/A (Ib aı/A)	Application Directions
Botrytis leaf blight	1 4 to 2 7	Use in sufficient water to obtain adequate coverage
(Botrytis spp)	(1 2 to 2 2)	of tops Begin applications prior to favorable infection
Purple blotch ( <i>Alternarıa pom</i> )		periods and repeat at 7 to 10 day intervals for as long as conditions favor disease (the minimum re treatment interval is 7 days) Use the high rate and a 7 day schedule of applications when heavy dew or
Suppression		rain persist
Down mildew		
(Peronospora		
destructor)		
		othalonil 82 5 WDG (6 75 lb ai) per acre during each not apply within 14 days of harvest on green bunching

## Papaya

DISEASES (Pathogen)	IbProduct/A (Ib aı/A)	Application Directions
Alternia fruit spot (A alternate)	1 4 to 2 7 (1 2 to 2 2)	Apply with ground equipment only in sufficient water to obtain adequate coverage of fruit and leaves Begin treatment when conditions favor development
Anthracnose ( <i>Colletotrichum</i> spp)		of disease and continue treatments at 14 day intervals until weather conditions no longer favor disease development (the minimum re treatment
Stem end rot (A alternata Colletotrichum spp)		interval is 14 days)
Specific Use Restrictions Do not apply more growing season Chlorothalonil 82 5 WDG ma	than 8 2 pounds Chlor ay be applied the day c	othalonil 82 5 WDG (6 75 lb ai) per acre during each if harvest

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# Parsnip

	Ib Product/A	
DISEASES (Pathogen)	(lb aı/A)	Application Directions
Alternaria leaf spot	14 to 18	Apply in sufficient water to obtain adequate
(Alternaria spp)	(1 2 to 1 5)	coverage Make the first application at the first sign of disease or when conditions are favorable for
Downy mildew		infection Continue applications on a 7 to 10 day
(Plasmopara crustosa)		schedule (the minimum re-treatment interval is 7 days)
Anthracnose		
(Colletotrichum spp)		
Botrytis blight (gray mold)		
(B cınera)		
Bottom rot		
(Rhizoctonia)		
Specific Use Restrictions Do not apply mor growing season Do not apply within 10 days of		hlorothalonil 82 5 WDG (6 lb ai) per acre during each

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# Passion Fruit (Hawaii only)

DISEASES (Pathogen)	lb Product/A (lb aı/A)	Application Directions
Alternaria fruit and leaf spot (Alternaria spp)	1 8 (1 5)	Apply with ground equipment in sufficient water to obtain adequate coverage of fruit and leaves Begin applications during late bloom and repeat at 14 day
Anthracnose (Colletotrichum spp)		intervals until weather conditions no longer favor disease development (the minimum re treatment interval is 14 days)
Cercospora fruit spot		
Specific Use Restrictions Do not apply more growing season Do not apply within 7 days of h		hlorothalonil 82 5 WDG (7 5 lb ai) per acre during each

#### Peanut

	Ib Product/A	
DISEASES (Pathogen)	(Ib aı/A)	Application Directions
Early leaf spot	0 9 to 1 36	Apply in sufficient water for coverage when leaf
(Cercospora arachıdıcola)	(0 75 to 1 1)	wetness first occurs or 30 to 40 days after planting repeat at 14 day intervals (the minimum re treatment
Late leaf spot		interval is 14 days) When conditions favor late leaf
(cercosporidium personatum)		spot or when rust or web blotch occur apply 1 36 pounds Chlorothalonil 82 5 WDG per acre at 14 day
Pepper Spot		intervals for the remainder of the season
(Leptosphaerulina crassiasca)		
Rust	1 36	
(Puccinia arachidis)	(1 1)	
Web blotch		
(Phoma arachıdıcola)		
Specific Use Restrictions Do not apply	more than 10 9 pounds C	hlorothalonil 82 5 WDG (9 lb ai) per acre during each

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growing season Do not apply within 14 days of harvest. Do not allow livestock to graze in treated areas. Do not feed hay or threshings from treated fields to livestock.

#### Potato

DISEASES (Pathogen)	Ib Product/A (Ib aı/A)	Application Directions
Late blight ( <i>Phytophtora infectans</i> ) Early blight ( <i>Alternaria solani</i> ) Botrytis vine rot ( <i>B cinerea</i> ) Black dot ( <i>Colletotrichum coccodes</i> )	0 7 (0 6) -then- 0 9 to 1 36 (0 75 to 1 1)	<ul> <li>Begin applications at the low rate when vines are first exposed and left wetness occurs Repeat applications at 5 to 10 day intervals (the minimum re treatment interval is 5 days)</li> <li>Begin applying the higher rates at 5 to 10 day intervals when any one of the following events occur</li> <li>Vines close between rows</li> <li>Late blight forecasting measures 18 disease severity values (DSV)</li> <li>The crop reaches 300 P days</li> <li>Increase water spray volume as canopy density increases Use the highest rate and shortest interval when plants are rapidly growing and disease conditions are severe</li> </ul>
Specific Use Restrictions Do not apply each growing season Do not apply within		f Chlorothalonii 82 5 WDG (11 25 lb ai) per acre during

Soybean Determinate (Southern) Varieties Ib Product/A **DISEASES** (Pathogen) (lb ai/A) Application Directions Apply insufficient water to obtain complete Anthracnose coverage using at least five gallons of water (Colletotrichum truncatum) per acre for aerial application. Use the three application program in areas having a history of Diaporthe pod and stem rot moderate to severe disease Intensity (D phaseolorum) Chlorothalonil 82.5 WDG may be applied through sprinkler irrigation equipment Follow Frogeve leaf spot application and calibration directions preceding (Cercospora sojina) this section. The minimum re-treatment interval is 14 days DO NOT exceed total of 3 Purple seed stain applications per season DO NOT apply more (C kikuchii) than 5.4 pounds Chorothalonil 82.5 WDG (4.5 lb al) per acre during each growing season DO Cercospora leaf blight NOT apply within 6 weeks of harvest DO NOT (C kıkuchıı) feed soybean hay or threshings from treated fields to livestock Septoria brown spot Two application program Make the first (S glycines) 14 to 20 application at early pod set (R3 stage when (1 125 to 1 7) majority of pods are 1/8 to 3/4 inch in length) and Suppression the second at beginning of seed formation (R5) Rust which occurs about 14 days later (Phakipsora pachyrhizi) Three application program - Make the first 09 to 18 application at the beginning of flowering (R1) (0 75 to 1 5) the second at early pod set (R3) and the third at the beginning of seed formation (R5) 09lb Apply in 10 to 20 gallons of water per acre as a Stem canker (075) band treatment directing spray to provide (Diaporthe phaseolorum var vaulivora) coverage of entire plant Make the first application at time of emergence of the second trifoliate leaves (V2) If conditions favor stem canker disease make a second and a third application Make all applications at 14 day intervals

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# Soybean Indeterminate (Northern) Varieties

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	Ib Product/A	
DISEASES (Pathogen)	(lb aı/A)	Application Directions
Anthracnose (Colletotrichum truncatum)		Apply insufficient water to obtain complete coverage using at least five gallons of water per acre for aerial application. Use the three
Diaporthe pod and stem rot (D phaseolorum)		application program in areas having a history of moderate to severe disease intensity Chlorothalonil 82.5 WDG may be applied
Frogeye leaf spot (Cercospora sojina)		through sprinkler irrigation equipment Follow application and calibration directions preceding this section. The minimum re treatment interval
Purple seed stain (C kikuchii)		is 14 days DO NOT exceed total of 3 applications per season DO NOT apply more than 5.4 pounds Chorothalonii 82.5 WDG (4.5
Cercospora leaf blight (C kikuchii)		lbs a t) per acre during each growing season DO NOT apply within 6 weeks of harvest DO NOT feed soybean hay or threshings from
Septoria brown spot (S glycines)	1 4 to 2 0 (1 125 to 1 7)	treated fields to livestock <b>Two application program</b> - Make the first application when largest pods are e1 to 1-1/2
Suppression Rust (Phakipsora pachyrhizi)		inches in length and make the second application 14 days later BRAVO 825 may be co-applied with Benlate 50WP as a tank mix for disease control in indeterminate (northern) soybeans Use 0.9 lbs of BRAVO 825 plus 8 ounces of BENLATE*50WP per acre Make the first application when pods near the top of plants are ½ to 1 inch in length and a second
	0 9 to 1 8 lb (0 75 to 1 5)	application 14 days later Three application program – Make the first application one week after first flowering and continue applications at 14 day intervals

# Tomato

	Ib Product/A	
DISEASES (Pathogen)	(lb aı/A)	Application Directions
FOLIAGE APPLICATIONS	1 3 to 1 8 (1 1 to 1 5)	Apply in sufficient water to obtain adequate coverage Begin applications when dew or rain
Early blight		occurs and disease threatens
(Alternaria solani)		Apply on a 7 10 day interval for foliage diseases
Late blight (Phytophthora infestans)		For fruit diseases begin at fruit set and apply on a 7 14 day interval. Use the highest rate and shortest interval specified when disease conditions are severe
Gray leaf spot ( Stemphyllium botryosum)		The minimum retreatment interval is 7 days
Gray leaf mold (Fluvia vluva Cladosporium)		
Septoria leaf spot (S <i>lycopersici</i> )		
Target spot (Corynespora cassiicola)		

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FRUIT APPLICATIONS	1 8 to 2 6 (1 5 to 2 2)		<u> </u>
Anthracnose ( <i>Colletotrichum</i> spp)			
Alternaria fruit rot (black mold) (A alternate)			
Botrytis gray mold (B <i>cinerea</i> )			
Late blight fruit rot ( <i>P infestans</i> )			
Rhizoctonia fruit rot ( <i>R solani</i> )			
Specific Use Restrictions Do not a growing season Chlorothalonil 82.5 N		thalonil 82 5 WDG (15 1 lb ai) per acre vest	e during each

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## CONDITIONS OF SALE

1 The directions for use of this product are believed to be adequate and must be followed carefully However it is impossible to eliminate all risks associated with the use of this product Such risks may arise from weather conditions, soil factors, off-target movement unconventional farming techniques, the presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of Arysta LifeScience North America LLC ("Arysta") and can cause crop injury, injury to non-target crops or plants, ineffectiveness of the product, or other unintended consequences All such risks shall be assumed by the user or buyer

2 Arysta warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks described above when used in accordance with the Directions for Use under normal conditions

3 This warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to Arysta and is subject to the inherent risks described above

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