

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

January 18, 2017

Arianna Shorey Agent for CAC Chemical Americas, LLC c/o Pyxis Regulatory Consulting, Inc. 4110 136th St. NW Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Label changes to reflect transfer of ownership; and revisions to emergency number Product Name: Chlorothalonil 82.5 WDG EPA Registration Number: 92044-3 Application Date: 12/28/2016 Decision Number: 524845

Dear Ms. Shorey:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" (attached) and will be placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, please contact Lindsay Roe by phone at 703-347-0506, or via email at roe.lindsay@epa.gov.

Sincerely,

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Tony Kish, Product Manager 22, Fungicide Branch Registration Division (7505P) Office of Pesticide Programs

#### NOTIFICATION

#### 92044-3

The applicant has certified that no changes, other than those reported to

Chlorothalonil 82.5 WDG Agricultural, Turf and Ornamental Fungicide labeling. The Agency acknowledges this notification by letter dated:

	· · ·
Active Ingredient:	01/18/2017
Chlorothalonil (tetrachloroisophthalonitrile)	82.5%
Other Ingredients:	17.5%
Total	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 detalle. (If you do not understand the label, find someone to explain it to you in detail.) See Additional precautionary statements and directions for use inside booklet

	FIRST AID
If in eyes	Hold eye open and rinse slowly and gently with water for     15-20 minutes.
	<ul> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>
	<ul> <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> </ul>
	Call a poison control center or doctor for treatment advice.
If inhaled	Move person to fresh air.
	<ul> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> </ul>
	Call a poison control center or doctor for further treatment advice.
If on skin or	Take off contaminated clothing.
clothing	Rinse skin immediately with plenty of water for 15-20 minutes.
	Call a poison control center or doctor for treatment advice.

#### Note to Physician

Possible mucosal damage may contraindicate the use of gastric lavage; chemical adsorbents are recommended to reduce adsorption of the product. Persons suffering with temporary allergic skin reactions may respond 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.

FOR 24-HOUR CHEMICAL EMERGENCY ASSISTANCE: Spill, leak, fire, exposure, or accident call CHEMTREC day or night at 1-800-424-9300 or 1-703-527-3887 if calling from outside of the U.S.

EPA Reg. No. 66330-38292044-3 NET WEIGHT: \_\_\_\_\_

EPA Est.

Manufactured for Arvsta LifeScience North America, LLCCAC CHEMICAL AMERICAS LLC 15401 Weston Parkway, Suite 1507 CASTLE VIEW COURT Cary, NC 27513RYE BROOK, NY 10573

# PRECAUTIONARY STATEMENTS

# 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 <u>Arysta LifeScienceCAC Chemical Americas LLC</u> 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, 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, 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 (REI). 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 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:

- 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

Special Eye Irritation Provisions: This product is a severe eye irritant. Although the REI 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 ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. 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 multisite mode of action, may be used to delay or prevent the development of resistance to singlesite 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<sup>™</sup>, 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.

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 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 manufacturer's 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

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 Pathogen(s)	Application Interval (days)	oz. product/ 1,000 sq ft	oz. product/ 1,000 sq ft	
Dollar Spot Sclerotinia homeocarpa Lanzia spp. Moellerodiscus spp.	7 to 10 7 to 21 14	1.0 <sup>a</sup> to 1.8 1.8 to 3.25	3.7 to 5.0	
Leaf Spot, Melting-Out Brown Blight Drechslera spp. (including D. poae, D. siccans) Bipolaris sorokiniana. Curvularia spp.	7 to 10 7 to 21 14	1.8 1.8 to 3.25	3.7 to 5.0	
Brown Patch Rhizoctonia solani R. zeae R. cerealis	3.7 to 5.0			
Gray Leaf Spot Pyricularia grisea P. oryzae	7 to 10 14	1.8 to 3.25	3.7 to 5.0	
Red Thread Laetisaria fuciformis	7 to 10 14	1.8 to 3.25 3.25 to 5.0	5.0	
Anthracnose Colletotrichum graminicola	7 to 14 14	2.75 to 3.25 3.25 to 5.0		
Copper Spot Gloeocerscospora sorghi	14	3.7 to 5.0	5.0	
Stem Rust Puccinia graminis	14	3.7 to 5.0	5.0	
Dichondra Leaf Spot (CA only) Altemaria spp.	14	3.7 to 5.0	5.0	
Gray Snow Mold <sup>b</sup> <i>Typhula spp.</i>	30 <sup>c</sup>	5.0		
Pink Snow Mold <sup>d</sup> Fusarium Patch <i>Microdochium nivale</i>	21 to 28 <sup>e</sup>	5.0		
Algae (algal scum)	7 to 14	1.8 to 5.0	5.0	

<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.

# Conversion Chart for Turf Rates

oz product/	lb product/	lb ai/
1,000 sq ft	acre	acre
1.0	2.5	2.1
1.8	5.0	4.1
2.75	7.5	6.2
3.25	8.8	7.3
3.7	10.0	8.25
5.0	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: 5.0 oz/1,000 sq ft.
- Maximum amount of Chlorothalonil 82.5 WDG per growing season:

	oz/1,000 sq ft	lb/A	lb ai/A
Greens	32.5	88.5	73
Tees	23	63.0	52
Fairways and Roughs	11.6	31.5	26
All Other Turf	5.8	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.

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) (1,7)							
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)	Poinsettia <sup>b</sup> (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)	Pachysandrad (1)	Zebra plant (Aphelandra) (1)					
Fatsia (Aralia) (1)	Parlor palm (Chamaedorea) (1)						
<sup>a</sup> Avoid applications during bloom pe	eriod on plants where flower injury is una	cceptable					
<sup>b</sup> Discontinue applications prior to br	act formation; phytotoxicity is possible of	n the bracts.					
<sup>c</sup> Use 1 pound Chlorothalonil 82.5 W	DG (0.825 lb ai) per 100 gallons of wate	r					
	2.5 WDG (2.1 lb ai) per 100 gallons of w						

1. Leaf Spots/Foliar Blights		
Actinopelte leaf spot	Coryneum blight (shothole)	Mycosphaerella ray blight
Alternaria leaf spot/leaf blight	Curvularia leaf spot	Myrothecium leaf spot, brown rot
Anthracnose leaf blotch, spot	Cylindrosporium leaf spot	Nematostoma leaf blight
Anthracnose (Discula) blight	Dactylaria leaf spot	Phyllosticta 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 cank	ker	
4. Phytophthora leaf blight, d	ieback	
5. Powdery mildews		
Erysiphe cichoracearum	Microsphaera spp	
6. Rusts		
Gymnosporangium spp	Pucciniastrum hydrangeae	<i>Puccinia</i> spp
7. Taphrina blister		
8. Scab (Venturia inaequalis)		

# **Plant Phytotoxicity**

Chlorothalonil 82.5 WDG has been shown to be non-phytotoxic 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 without phytotoxic effects on genera, 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 non-phytotoxic effects 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.

	5.	Ib Product per	
Crop	Diseases	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>Fusarium 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.

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 use on blue spruce.

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.				
	Sirococcus tip blight (S. conigenus)	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)	5.0 (4.1)	5.0 (4.1)					
	( <i>Mycosphaerella</i> <i>dearnessii</i> ) Cyclaneusma and Lophodermium	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				
	needlecasts (pines)			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)	5.0 (4.1)	5.0 (4.1)	Begin applications when 10% of buds have broken and twice thereafter at 7-10 day intervals.				

٠	Specific	Use Res	strictions	: Do not	apply	more th	an 20	pour	nds (	Chloroth	nalonil	82.5 W	DG	(16.5	lb ai)	per acı	re durir	ng ea	ach
	growing	season.																	

- 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

		oduct Per ai per)	
DISEASES (Pathogen)	Acre	100 gal*	APPLICATION DIRECTIONS
Blossom Blight/brown rot ( <i>Monilinia</i> spp) Shot hole ( <i>Wilsonomyces carpophilus</i> )	3.6 (3.0)	1.2 (1.0)	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 (Venturia 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)

		oduct Per ai per)	
DISEASES (Pathogen)	Acre	100 gal.*	APPLICATION DIRECTIONS
Eastern filbert blight (Anisogramma anomala)	3.6 (3.0)	1.2 (1.0)	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).

Specific Use Restrictions: Do not apply more than 11 pounds Chlorothalonil 82.5 WDG (9 lb ai) per acre during each growing season. 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 ai per)		
DISEASES (Pathogen)	Acre	100 gal*	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

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 Chlorothalonil 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			development, make an additional application
( <i>Monilinia</i> spp.)			at petal fall.
Cherry leaf spot	2.8 to 3.8	0.9 to 1.25	In addition to the bloom application above,
(Blumeriella	(2.3 to 3.1)	(0.75 to 1.0)	make one application at shuck split. Do not
jaapii)			apply Chlorothalonil 82.5 WDG after shuck split and before harvest. If additional disease
Scab			control is needed before harvest, use another
(Cladosporium carpophilum)			registered fungicide.
			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
Specific Lise Restrictions: Do not appl	v more than 18.8 po	unds of Daconil SDG (	second application 10-14 days later.

Specific Use Restrictions: Do not apply more than 18.8 pounds of Daconil SDG (15.5 lb ai) per acre during each growing season. Chlorothalonil 82.5 WDG may be applied the day of harvest. The minimum re-treatment interval is 10 days.

# Pistachio

DISEASES (Pathogens)	Ib Product Per (Ib ai per)		APPLICATION DIRECTIONS
	Acre	100 gal*	
Botryosphaeria blight ( <i>B. dothidea)</i>	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 ( <i>A. alternate</i> )			bloom. Make additional applications as required on a 28-day schedule (the minimum re-treatment interval is 28 days). For Septoria and Botrytis, use 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: Do not apply more than 27 pounds Chlorothalonil 82.5 WDG (22.5 lb ai) per season. Do not apply within 14 days of harvest.			

\*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.

#### Asparagus

DISEASES (Pathogens)	lb Product/A (lb ai/A)	APPLICATION DIRECTIONS	
Rust ( <i>Puccinia asparagi</i> ) Purple Spot ( <i>Pleospora herbarum</i> ) Cercospora blight ( <i>C. asparagi</i> )	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.	
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)

	Ib Product/A		
DISEASES (Pathogens)	(Ib ai/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- treatment interval is 7 days) to maintain	
Botrytis blight (gray mold) ( <i>B. cinerea</i> )	2.7 (2.2)	control.	
Specific Use Restrictions: Do not apply more than 10.9 pounds of Chlorothalonil 82.5 WDG (9.0 lb ai) per acre during each growing season. Do not apply within 7 days of harvest.			

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 ai/A)	APPLICATION DIRECTIONS
Rust	1.25 to 1.8	Use in sufficient water to obtain adequate
(Uromyces appendiculaus)	(1.0 to 1.5)	coverage. Begin applications at first onset of 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-
(Colletotrichum		treatment interval is 7 days). For use only on
`lindemuthianum)		beans to be harvested dry with pods removed.
Downy mildew		
(Phytophthora		
nicotianae)		
Cercospora leaf blotch		
(C. cruenta)		
Ascochyta blight		
(A. phaseolorum)		
Specific Use Restrictions: Do not appl	y more than 7.3 pounds of Chlor	othalonil 82.5 WDG (6.0 lb ai) per acre during each
growing season. Do not apply within 14 c	lays of harvest.	

#### **Blueberries**

	Ib Product/A	
DISEASES (Pathogen)	(Ib ai/A)	APPLICATION DIRECTIONS
Suppression: Anthracnose (ripe rot) ( <i>C. gloeosporoides</i> ) Mummy Berry ( <i>M.</i> <i>vacciniicorymbosi</i> )	2.7 to 3.6 (2.2 to 3.0)	Chlorothalonil 82.5 WDG should be integrated into an overall disease management strategy 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.
Septoria leaf spot	3 to 4	Foliar Use After Harvest: (after all berries are
(Septoria albopupnctata)	(2.25 to 3.0)	harvested): To maintain healthy leaves for the following season, apply in sufficient water to
Rust ( <i>Pucciniastrum vaccinii</i> )		obtain adequate coverage (normally 20-100 gallons per acre). Repeat at 10-14 day intervals (the minimum re-treatment interval is 10 days).
Specific Use Restrictions: Do not apply mo	ore than 10.9 pounds Chlorotha	lonil 82.5 WDG (9.0 lb ai) per acre during each

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 ai/A)	APPLICATION DIRECTIONS	
Alternaria leaf spot	1.4	Use in sufficient water to obtain adequate	
(Alternaria spp.)	(1.2)	coverage. Begin applications after transplants are set in field, or shortly after emergence of	
Downy mildew		field-seeded crop, or when conditions favor	
(Peronospora parastica)		disease development. Repeat at 7 to 10 day intervals (the minimum re-treatment interval is	
Ding anot	1.1	7 days) to maintain control.	
Ring spot	1.4	For field-seeded brussels sprouts, begin	
(California only)	(1.2)	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.	
Specific Use Restrictions: Do not apply more than 14.5 pounds Chlorothalonil 82.5 WDG (12 lb ai) per acre during each growing season. Do not apply within 7 days of harvest.			

Carrot

DISEASES (Pathogen)	Lb Product/A (Ib ai/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 ( <i>A. dauci)</i>		(the minimum re-treatment interval is 7 days) to maintain control.	
Specific Use Restrictions: Do not apply more than 18.2 pounds Chlorothalonil 82.5 WDG (15 lb ai) per acre during each			
growing season. Chlorothalonil 82.5 WDG may be applied the day of harvest.			

	Lbs. Product/A		
DISEASES (Pathogen)	(Ib ai/A)	Application Directions	
Early blight	1.8 to 2.7	Use in sufficient water to obtain adequate	
(Cercospora apii)	(1.5 to 2.2)	coverage. Start applications when transplants	
		are set in the field and repeat at a 7-day	
Late blight		interval as needed to maintain control (the minimum re-treatment interval is 7 days).	
(Septoria apicola)		minimum re-treatment interval is 7 days).	
Basal stalk rot			
(Rhizoctonia solani)			
		-	
Suppression (7 day schedule):	2.7		
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 apii)	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 21.8 pounds Chlorothalonil 82.5 WDG (18 lb ai) per acre during each			
growing season. Do not apply within 7 days of harvest.			

# Corn (sweet)

DISEASES (Pathogen)	Ib Product/A (Ib ai/)	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 mor growing season. Do not apply within 14 day		onil 82.5 WDG (9 lb ai) per acre during each veet corn to be processed. Do not allow livestock to

graze in treated fields. Do not ensile treated corn or use as livestock forage.

#### Cranberry

DISEASES (Pathogen)	Ib Product/A (Ib ai/A)	Application Directions
Fruit rots Lophodermium leaf/twig blight (L. hypophyllum)	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 ( <i>Phomopsis vaccinii</i> )	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
Specific Line Pactrictions: Do not apply ma	to than 18.2 nounds Chlorothal	applications at 10-14 day intervals.

Specific Use Restrictions: Do not apply more than 18.2 pounds Chlorothalonil 82.5 WDG (15 lb ai) per acre during each 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.

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

	Ib Product/A	
DISEASES (Pathogen)	(lbs ai/A)	Application Directions
Target spot ( <i>Corynespora cassiicola</i> ) Anthracnose ( <i>Colletotrichum</i> spp)	1.4 to 1.8 (1.2 to 1.5)	Use in sufficient water to obtain adequate coverage. Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals (the minimum re-treatment interval is 7 days).
Downy mildew ( <i>Pseudoperonospora cubensis</i> ) Cercospora leaf spot ( <i>C. citrullina</i> )	1.8 to 2.7 (1.5 to 2.2)	Note: Spraying mature watermelons may result in sunburn of the upper surface of the fruit. Do not apply Chlorothalonil 82.5 WDG to watermelons when any of the following conditions are present:
Gummy stem blight/ vine decline ( <i>Didymella bryoniae)</i>		<ol> <li>Intense heat and sunlight</li> <li>Drought conditions</li> <li>Poor vine canopy</li> <li>Other crop and environmental</li> </ol>
Alternaria leaf blight (A. cucumerina)		conditions which may be conducive to increased natural sunburn. Do not combine Chlorothalonil 82.5 WDG with
Alternaria leaf spot (A. alternate)		anything except water for application to watermelons unless prior use has shown the combination to be non-injurious to
Scab ( <i>Cladosporium cucumerinum</i> )		watermelons under your conditions of use.
Powdery mildew ( <i>Sphaerotheca</i> only)		
Specific Use Restrictions: Do not apply more than growing season. Chlorothalonil 82.5 WDG may b		

# **Grasses Grown for Seed**

DISEASES (Pathogen)	lb Product/A (lb ai/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	(01101011120)	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.

## Mango

DISEASES (Pathogen)	Ib Product/A (Ib ai/A)	Application Directions
Anthracnose ( <i>Colletotrichum</i> 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 fruit development. Begin the season with the 1.8 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 app	ly more than 29 pounds Chlorotha	alonil 82.5 WDG (24.0 lb ai) per acre during each

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 ai/A)	Application Directions
Rust ( <i>Puccinia menthae</i> ) Septoria leaf spot (S. <i>menthae</i> )	1.2 (1.0)	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 inches high. Repeat applications at 7 to 10 day intervals to maintain control (the minimum
		re-treatment interval is 7 days).

Specific Use Restrictions: Do not apply more than 3.6 pounds Chlorothalonil 82.5 WDG (3 lb ai) per acre during each growing season. Do not apply within 80 days of harvest. Do not feed fresh or extended mint hay from treated fields to livestock.

# Onion (dry bulb) and Garlic

DISEASES (Pathogen)	Ib Product/A (Ib ai/A)	Application	n Directions		
Botrytis leaf blight	0.9 to 2.7		ient water to		ate coverage
(Botrytis spp.)	(0.75 to 2.2)		rothalonil 82.5		
(Bollylis spp.)	(0.75 to 2.2)		sease monitor		
Durpla blatab			ates and fr	•••	•
Purple blotch		according to	disease hazar	d.	
(Alternaria pom)		Apply Chloro	thalonil 82.5 V	VDG as follow	s:
Supproceion				Low	
Suppression:			Low	Disease	
Botrytis neck rot			Disease	Hazard &	
			Hazard &	Some	High
Down mildew			Prior to	Disease	Disease
(Peronospora		Data a sa	Infection	Present	Hazard
destructor)		Rate per	0.0		0.7 lb
		Acre	0.9	1.25 lb 7-10 days	2.7 lb
		Frequency	10 days	7-10 uays	7 days
			sion of neck	rot ( <i>Rotrytis</i>	
			inimum of thre		
		<b>U</b>	ng 1.25 to 2.7 l		•
			n re-treatment		
Specific Use Restrictions: Do not apply more than 18.2 pounds Chlorothalonil 82.5 WDG (15 lb ai) per acre during each					

Specific Use Restrictions: Do not apply more than 18.2 pounds Chlorothalonil 82.5 WDG (15 lb ai) per acre during each growing season. Do not apply within 7 days of harvest.

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

	Ib Product/A	
DISEASES (Pathogen)	(Ib ai/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 periods, and repeat at 7 to 10 day intervals for as
Purple blotch		long as conditions favor disease (the minimum re-
(Alternaria pom)		treatment interval is 7 days). Use the high rate and a 7 day schedule of applications when heavy dew or rain persist.
Suppression:		
Down mildew		
(Peronospora		
destructor)		
		alonil 82.5 WDG (6.75 lb ai) per acre during each
growing season. Do not apply within 7 days of harvest on garlic. Do not apply within 14 days of harvest on green bunching		
onions, leeks or shallots.		

#### Papaya

	IbProduct/A	
DISEASES (Pathogen)	(lb ai/A)	Application Directions
Alternia fruit spot	1.4 to 2.7	Apply with ground equipment only, in sufficient water
(A. alternate)	(1.2 to 2.2)	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 interval is 14 days)
Stem end rot		interval is 14 days).
(A. alternata, Colletotrichum spp.)		

Specific Use Restrictions: Do not apply more than 8.2 pounds Chlorothalonil 82.5 WDG (6.75 lb ai) per acre during each growing season. Chlorothalonil 82.5 WDG may be applied the day of harvest.

# Parsnip

	Ib Product/A	
DISEASES (Pathogen)	(Ib ai/A)	Application Directions
Alternaria leaf spot	1.4 to 1.8	Apply in sufficient water to obtain adequate
(Alternaria spp.)	(1.2 to 1.5)	coverage. Make the first application at the first sign of
Downy mildew ( <i>Plasmopara crustosa)</i>		disease or when conditions are favorable for infection. Continue applications on a 7 to 10 day schedule (the minimum re-treatment interval is 7 days).
Anthracnose ( <i>Colletotrichum</i> spp.)		
Botrytis blight (gray mold) ( <i>B. cinera</i> )		
Bottom rot		
(Rhizoctonia)		
Specific Use Restrictions: Do not apply more than 7.3 pounds of Chlorothalonil 82.5 WDG (6 lb ai) per acre during each growing season. Do not apply within 10 days of harvest.		

# Passion Fruit (Hawaii only)

	Ib Product/A		
DISEASES (Pathogen)	(lb ai/A)	Application Directions	
Alternaria fruit and leaf spot	1.8	Apply with ground equipment in sufficient water to	
(Alternaria spp)	(1.5)	obtain adequate coverage of fruit and leaves. Begin	
Anthracnose ( <i>Colletotrichum</i> spp.)		applications during late bloom and repeat at 14 day 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 than 9.1 pounds of Chlorothalonil 82.5 WDG (7.5 lb ai) per acre during each growing season. Do not apply within 7 days of harvest.			

#### Peanut

DISEASES (Pathogen)	Ib Product/A (Ib ai/A)	Application Directions
Early leaf spot	0.9 to 1.36	Apply in sufficient water for coverage when leaf
(Cercospora arachidicola)	(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 (cercosporidium personatum)		interval is 14 days). When conditions favor late leaf 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 arachidicola)		
		Chlorothalonil 82.5 WDG (9 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. Do not feed hay or threshings from treated fields to livestock.

#### Potato

	Ib Product/A	
DISEASES (Pathogen)	(Ib ai/A)	Application Directions
Late blight	0.7	Begin applications at the low rate when vines are first
(Phytophtora infectans)	(0.6)	exposed and left wetness occurs. Repeat
Early blight	-then-	applications at 5 to 10 day intervals (the minimum re- treatment interval is 5 days).
(Alternaria solani)	0.9 to 1.36	Begin applying the higher rates at 5 to 10 day intervals when any one of the following events occur.
Botrytis vine rot	(0.75 to 1.1)	
(B. cinerea)		Vines close between rows
Black dot		<ul> <li>Late blight forecasting measures 18 disease severity values (DSV)</li> </ul>
(Colletotrichum coccodes)		The crop reaches 300 P-days
		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.
Specific Use Restrictions: Do not apply more than 13.6 pounds of Chlorothalonil 82.5 WDG (11.25 lb ai) per acre during		

each growing season. Do not apply within 7 days of harvest.

# Soybean: Determinate (Southern) Varieties

	Ib Product/A	
DISEASES (Pathogen)	(lb ai/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 <i>(C. kikuchii)</i>		is 14 days. DO NOT exceed total of 3 applications per season. DO NOT apply more than 5.4 pounds Chorothalonil 82.5 WDG (4.5 lb
Cercospora leaf blight (C. kikuchii)		ai) per acre during each growing season. DO NOT apply within 6 weeks of harvest. DO NOT feed soybean hay or threshings from treated
Septoria brown spot (S. glycines)	1.4 to 2.0	fields to livestock. <b>Two application program</b> - Make the first
Suppression: Rust (Phakipsora pachyrhizi)	(1.125 to 1.7)	application at early pod set (R3 stage, when majority of pods are 1/8 to <sup>3</sup> / <sub>4</sub> inch in length) and the second at beginning of seed formation (R5) which occurs about 14 days later.
	0.9 to 1.8 (0.75 to 1.5)	<b>Three application program</b> – Make the first application at the beginning of flowering (R1), the second at early pod set (R3) and the third at the beginning of seed formation (R5).
Stem canker ( <i>Diaporthe phaseolorum</i> var. <i>vaulivora</i> )	0.9 lb (0.75)	Apply in 10 to 20 gallons of water per acre, as a band treatment directing spray to provide 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.

# Soybean: Indeterminate (Northern) Varieties

# Tomato

	Ib Product/A	
DISEASES (Pathogen)	(Ib ai/A)	Application Directions
FOLIAGE APPLICATIONS	1.3 to 1.8	Apply in sufficient water to obtain adequate
	(1.1 to 1.5)	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		For fruit diseases, begin at fruit set and apply on a 7-
(Phytophthora		14 day interval. Use the highest rate and shortest
infestans)		interval specified when disease conditions are
		severe.
Gray leaf spot		The minimum retreatment interval is 7 days
(Stemphyllium		The minimum retreatment interval is 7 days.
botryosum)		
Gray leaf mold		
(Fluvia vluva; Cladosporium)		
Septoria leaf spot		
(S. lycopersici)		
T		
(Corynespora cassiicola)		

FRUIT APPLICATIONS	1.8 to 2.6	
	(1.5 to 2.2)	
Anthracnose		
(Colletotrichum spp)		
Alternaria fruit rot		
(black mold)		
(A. alternate)		
Botrytis gray mold		
(B. <i>cinerea</i> )		
()		
Late blight fruit rot		
(P. infestans)		
Rhizoctonia fruit rot		
(R. solani)		
Specific Use Restrictions: Do not apply more than 18.3 pounds Chlorothalonil 82.5 WDG (15.1 lb ai) per acre during each		
growing season. Chlorothalonil 82.5 WD	G may be applied the day of I	harvest.

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