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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

> OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

AUG 3 1 2010

Dr. Khalid H. Akkari BASF Corporation, Agricultural Products 26 Davis Drive P.O. Box 13528 Research Triangle Park, NC 27709

> Pristine Fungicide EPA Reg. No. 7969-199 Your letter dated August 11, 2010 EPA Decision Number: 439013

Dear Dr. Akkari:

Subject:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to increase the number of sequential applications from one to two for berries, bulb vegetables, carrots, grapes, pistachio, pomefruits, stonefruits, starawberry and tree nuts, is acceptable providing the following changes are made:

1. On page 4 change the heading "General Information" to "Product Information"

2. On page 4 under **Application Instructions**, remove the word "recommended" by revising the first sentence to read as follows: "Apply directed rates of **Pristine** as instructed by..."

A stamped copy of the label "Accepted with Comments" is enclosed for your records. This label supersedes all labels previously accepted for this product. Please submit one copy of the final printed label before the product is released for shipment. If you have any questions, please contact Heather Garvie by phone at: 703-308-0034 or via email at: garvie.heather@epa.gov.

Sincere Erik Kraft

Acting Product Manager 20 Fungicide Branch Registration Division (7504P)

Enclosed: Stamped "Accepted with Comments" label

## GROUP 7 11 FUNGICIDE

# **Pristine**

For use in disease control and plant health in the following crops:

Berries, bulb vegetables, carrots, celery, cotton, cucurbit vegetables, dry beans, grapes, hops, leafy greens, leafy petioles, peanuts, pistachios, pome fruits, soybeans, spinach, stone fruits, strawberries, tree nuts, and tropical fruits

#### Active Ingredients:

 pyraclostrobin: (carbamic acid, [2-[[[1-(4-chlorophenyl) 

 1H-pyrazol-3-y[]oxy]methyl]phenyl]methoxy-, methyl ester)
 12.8%

 boscalid: 3-pyridinecarboxamide,2-chloro-N-(4'-chloro(1,1'-biphenyl)-2-yl) 25.2%

 Other Ingredients:
 62.0%

 Total:
 100.0%

 0/128 oz (0.008 lb) of pyraclostrobin in 1 oz of Pristine
 0.252 oz (0.0158 lb) of boscalid in 1 oz of Pristine

EPA Reg No. 7969-199

EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCIÓN

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.)

See inside for complete First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night, 1-800-832-HELP (4357).

#### **Net Contents:**

BASF Corporation 26 Davis Drive Research Triangle Park, NC 27709

#### ACCEPTED with COMMENTS In EPA Letter Dated: AUG 3 1 2000

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



If on skin or clothing • • •	<ul> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> </ul>
• If swallowed	<ul> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> </ul>
•	<ul> <li>DO NOT induce vomiting unless told to do so by a poison control center or doctor.</li> <li>DO NOT give anything by mouth to an unconscious person.</li> </ul>
If in eyes	<ul> <li>Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
If 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 by mouth to mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

#### **Precautionary Statements**

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

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

Some materials that are chemically resistant to this product are listed below. For more options, refer to **Category A** on an EPA chemical-resistance category selection chart.

Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

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

#### **Engineering Controls Statement**

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

#### **User Safety Recommendations**

#### Users should:

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

#### Environmental Hazards Surface Water Advisory

This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

**DO NOT** apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

#### **Directions For Use**

It is a violation of federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restrictedentry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours** for all crop uses except when performing cane tying, cane turning or cane girdling on grapes. The REI is **5 days** for treated grapes when conducting cane tying, cane turning or cane girdling.

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
- Chemical-resistant gloves, made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

#### STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

#### **Pesticide Storage**

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed.

#### **Pesticide Disposal**

Wastes resulting from using this product may be disposed of on-site or at an approved waste disposal facility. If these wastes cannot be disposed of according to label instructions, contact your state pesticide agency or environmental control agency, or the Hazardous Waste representatives at the nearest EPA Regional Office for guidance.

(continued)

#### STORAGE AND DISPOSAL (continued)

#### **Container Handling**

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity  $\leq$  50 pounds) as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

#### Triple rinse containers too large to shake

(capacity > 50 pounds) 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 forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

#### In Case of Spill

In case of large-scale	spillage regarding this product, call
CHEMTREC	1-800-424-9300
BASF Corporation	1-800-832-HELP (4357)

## Steps to be taken in case material is released or spilled:

In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.

Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.

Remove contaminated clothing, and wash affected skin areas with soap and water.

Wash clothing before reuse.

Keep the spill out of all sewers and open bodies of water.

#### **General Information**

This package contains **Pristine® fungicide**, a water dispersible granule (WG). The active ingredients in **Pristine** belong to two classes of fungicides, the strobilurins and anilides. Preventive applications optimize disease control resulting in improved plant health. **Pristine** is effective against pathogens resistant to other fungicides. **Pristine® fungicide** has a protective effect because it inhibits spore germination. It also has a curative effect because it inhibits mycelial growth and sporulation of the fungus on the leaf surface. However, optimum disease control is achieved when **Pristine** is applied in a regularly scheduled protective spray program and is used in a rotation program with other fungicides. Because of its high specific activity and rainfastness.

**Pristine** is not for use in greenhouse or transplant production.

#### **Sensitive Crop Precaution**

**Pristine** may cause injury to foliage of Concord or related grape varieties such as Worden, Fredonia and Niagara. **DO NOT** use **Pristine** on these varieties and use special care when applying **Pristine** to prevent contact with these sensitive varieties. Consult a BASF representative for more information concerning these sensitive grape varieties. Thoroughly rinse spray equipment, including the inside of the tank, hoses and nozzles after and before using the same equipment on grape varieties sensitive to **Pristine**.

#### **Modes of Action**

Pyraclostrobin and boscalid, the active ingredients of **Pristine**, belong to the groups of respiration inhibitors classified by the U.S. EPA and Canada PMRA as target site of action **Group 11** and **Group 7** fungicides, respectively.

#### **Resistance Management**

Pristine contains pyraclostrobin and boscalid, a premix of a Group 11 and a Group 7 fungicide, and is effective against pathogens resistant to fungicides with modes of action different from those of target site Groups 7 and 11, such as dicarboximides, sterol inhibitors, benzimidazoles, or phenylamides. Pristine is also effective against certain pathogens with resistance to Group 11 fungicides, such as pyraclostrobin, azoxystrobin, trifloxystrobin, or kresoxim-methyl, However, fungal isolates resistant to Group 7 or 11 fungicides may eventually dominate the fungal population if Group 7 or Group 11 fungicides are used predominantly and repeatedly in the same field in successive years as the primary method of control for the targeted pathogen species, especially if resistance to either Group 7 or 11 fungicides is already present in the pathogen population. This may result in reduction of disease control by Pristine or other Group 7 or 11 fungicides. To maintain the performance of Pristine in the field, DO NOT exceed the specified number of applications of Pristine and the total number of applications of Pristine per season stated in Restrictions and Limitations - All Crops and Crop-specific Use Directions. Adhere to the label

instructions regarding the consecutive use of **Pristine** or other target site of action **Group 7** and **11** fungicides that have a similar site of action on the same pathogens. The following recommendations may be considered to delay the development of fungicide resistance:

- 1. **Tank mixtures. Pristine** provides more effective resistance management of most of its target pathogens, because it is a premix of two fungicides with different modes of action. If **Pristine** is used in tank mixtures with fungicides from different target site of action groups that are registered/permitted for the same use and that are effective against the pathogens of concern, use at least the minimum labeled rates of each fungicide in the tank mix.
- 2. **IPM. Pristine** should be integrated into an overall disease and pest management program. Cultural practices known to reduce disease development should be followed. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Pristine** may be used in agricultural extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
- Monitoring. Monitor efficacy of all fungicides used in the disease management program against the targeted pathogen and record other factors that may influence fungicide performance and/or disease development.
- 4. Reporting. If a Group 7 or 11 target site fungicide appears to be less or no longer effective against a pathogen that it previously controlled or suppressed, contact a BASF representative, local extension specialist, or certified crop advisor to assist in determining the cause of reduced performance.

#### **Cleaning Spray Equipment**

Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used prior to **Pristine**.

#### **Application Instructions**

Apply recommended rates of **Pristine** as instructed by **Table 2. Crop-specific Use Directions**. Ground application is recommended for thorough coverage. Aerial application can be made for those crops or in conditions where applications are not possible using ground equipment. **Pristine** can be applied through sprinkler irrigation equipment. Equipment should be checked frequently for calibration. Under low-level disease conditions, use the minimum application rates; use maximum application rates and shortened spray schedules for severe or threatening disease conditions.

#### **Ground Application**

Apply **Pristine** in sufficient water to ensure thorough coverage of foliage, bloom, and fruit. Thorough coverage is required for optimum disease control.

#### **Directed or Banded Sprays**

The application rates on the **Pristine** label reflect the amount of product to be applied uniformly over an acre of ground on a broadcast basis.

In some crops, **Pristine® fungicide** may be used as a directed or banded spray over the rows or plant beds with the alleys or row middles left unsprayed. For such uses, reduce the labeled **Pristine** rates in proportion to the area actually sprayed. This adjustment is necessary to avoid applying the product at use rates higher than permitted according to label directions.

The following formula may be used to determine the broadcast equivalent rate for doing directed or banded sprays:

sprayed bed	+	unsprayed row middles width	=	total row width
sprayed bed width in inches		broadcast rate		band rate
total row width in inches	X	treated acre	-	field acre

**Example:** A directed spray application will be made to 45-inch plant beds that are separated by 15-inch unsprayed row middles.

45 inches sprayed bed width	+	15 inches unsprayed row middles	=	60 inches total row width

The calculation to determine the appropriate equivalent rate of product to use for this situation based on a label broadcast rate recommendation of 12 ozs/acre follows:

45 inches sprayed bed width	12 ozs Pristine	9 ozs <b>Pristine</b>
60 inches total row width	treated acre	field acre

#### **Aerial Application**

Aerial application can be made and thorough coverage is required to obtain optimum disease control. Avoid applications under conditions when uniform coverage cannot be obtained or when spray drift may occur. Use no less than 5 gallons of spray solution per acre. For aerial applications to hops, tree and vine crops, use no less than 10 gallons of spray solution per acre. For all crops, thorough coverage is required for optimum disease control.

#### Directions for Use Through Sprinkler Irrigation Systems

**Sprayer Preparation.** Clean chemical tank and injector system thoroughly. Flush system with clean water.

**Application Instructions.** Apply **Pristine** at rates and timings as described in this label.

#### **Use Precautions for Sprinkler Irrigation Applications**

• This product can be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand

move irrigation systems. **DO NOT** apply this product through any other type of irrigation system.

- Add this product to the pesticide supply tank containing sufficient water to maintain a continuous flow by the injection equipment. In continuous moving systems, inject this product-water mixture continuously, applying the labeled rate per acre for that crop. DO NOT exceed 1/2 inch (13,577 gallons) per acre. In stationary or noncontinuous moving systems, inject the product-water mixture in the last 15 to 30 minutes of each set allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. Thorough coverage of foliage is required for good control. Maintain good agitation during the entire application period.
- If you have questions about calibration, you should contact a state extension service specialist, equipment manufacturers or other experts.
- 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, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 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 pumpmotor 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.
- Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. 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.
- 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. 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, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.

#### Additives and General Tank Mixing Information

**Pristine® fungicide** can be tank mixed with most recommended fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants, and additives as specified in **Table 2. Crop-specific Use Directions.** 

Under some conditions, the use of additives or adjuvants may improve the performance of **Pristine**. However, all varieties and cultivars have not been tested with possible tank mix combinations. Local conditions can also influence crop tolerance and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Pristine** with other products. Therefore, before using any tank mix (fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants, and additives), test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

Consult a BASF representative or local agricultural authorities for more information concerning additives.

#### **Compatibility Test and Mixing Order**

If tank mixtures are used, adhere to restrictions due to rates, label recommendations and precautions on all labels.

#### **Compatibility Test for Tank Mix Components**

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre:

- 1. **Water.** For 100 gallons per acre spray volume, use 16 cups (1 gallon) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
- 2. Water-dispersible products (dry flowables, wettable powders, suspension concentrates, or suspoemulsions). Cap the jar and invert 10 cycles.
- 3. Water-soluble products. Cap the jar and invert 10 cycles.
- 4. **Emulsifiable concentrates** (oil concentrate or methylated seed oil when applicable). Cap the jar and invert 10 cycles.
- 5. Water-soluble additives. Cap the jar and invert 10 cycles.
- 6. Let the solution stand for 15 minutes.
- 7. **Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. **DO NOT** use any spray solution that could clog spray nozzles.

#### **Mixing Order**

- 1. **Water.** Begin by agitating a thoroughly clean sprayer tank 3/4 full of clean water.
- 2. Agitation. Maintain constant agitation throughout mixing and application.
- 3. **Inductor.** If an inductor is used, rinse it thoroughly after each component has been added.
- 4. Products in PVA bags. Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
- Water-dispersible products (such as Pristine, dry flowables, wettable powders, suspension concentrates, or suspo-emulsions).

#### 6. Water-soluble products.

- 7. Emulsifiable concentrates (such as oil concentrates when applicable).
- 8. Water-soluble additives (such as AMS or UAN when applicable).

#### 9. Remaining quantity of water.

Make sure that each component is thoroughly mixed and suspended before adding tank mix partners. Maintain constant agitation during application. See **Table 1. Cropspecific Restrictions and Limitations** for more details.

#### **Restrictions and Limitations - All Crops**

- Maximum seasonal use rate. DO NOT apply more than the maximum rate per acre per season as listed in Table 1. Crop-specific Restrictions and Limitations and Table 2. Crop-specific Use Directions.
- Maximum rate per application. DO NOT apply more than the maximum rate per acre per application as listed in Table 1. Crop-specific Restrictions and Limitations and Table 2. Crop-specific Use Directions.

- DO NOT make more than the total number of applications of Pristine® fungicide per season as listed in Table 1. Crop-specific Restrictions and Limitations and Table 2. Crop-specific Use Directions.
- DO NOT apply more than the maximum season use rate of ai/acre or ozs of product/acre for each specific crop from any combination of products (e.g. **Pristine**, **Endura® fungicide**, **Cabrio® EG fungicide**, **Headline® fungicide**).
- Preharvest Interval (PHI): See Table 1. Crop-specific Restrictions and Limitations and Table 2. Crop-specific Use Directions.
- **Pristine** is not for use in greenhouse or transplant production.

#### **Crop Rotation Restriction**

Crops listed on the **Pristine**, **Cabrio EG**, **Endura** and **Headline** labels may be planted immediately following the last application.

All other crops can be planted 14 days after the last application.

DO NOT use on cowpeas, field peas, grain lupine, sugar beets, garden beets, turnip or radishes.

Crop <sup>1</sup>	Minimum Time from Application to Harvest (PHI) (days)	Maximum Rate per Acre per Application (ozs product)	Maximum Number of Applications <sup>3</sup> per Season	Maximum Rate per Acre per Season (ozs product)
Berries Group <sup>1</sup> Bushberry Caneberry	0	23	4	92
Bulb Vegetables Group <sup>1</sup> Garlic Leeks Onion	7	18.5	6	111
Carrots	0	10.5	6	63
Celery	0	25	2	50
Cotton	30	25	2	50
Cucurbit Vegetables Group <sup>1</sup> Cantaloupe Cucumber Melon Pumpkin Squash Watermelon	0	18.5	4	74
Dry Beans <sup>1</sup>	21	25	2	50
Grapes <sup>2</sup>	14	23	3	69
Hops (ground application)	14	28	34	845
Hops (aerial application)	14	14	14	14 <sup>5</sup>

#### Table 1. Crop-specific Restrictions and Limitations

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#### Table 1. Crop-specific Restrictions and Limitations (continued)

Crop <sup>1</sup>	Minimum Time from Application to Harvest (PHI) (days)	Maximum Rate per Acre per Application (ozs product)	Maximum Number of Applications <sup>3</sup> per Season	Maximum Rate per Acre per Season (ozs product)
Leafy Greens (except <i>Brassica</i> and head lettuce and leaf lettuce)	14	25	2	50
Leafy Petioles (except <i>Brassica</i> )	0	25	2	50
Peanut	14	28	3	84
Pistachio	14	14.5	4	58
Pome Fruits Group <sup>1</sup>	0	18.5	4	74
Soybeans	21	16	2	32
Spinạch	14	25	2	50
Stone Fruits Group <sup>1</sup> Apricot Cherry (sweet and sour) Nectarine Peach Plum Prune	0	14.5	5	72.5
Strawberries	0	23	5	115
Tree Nuts Group <sup>1</sup> except Almond	14	14.5	4	58
Almond	25	14.5	4	58
Tropical Fruits Avocado Black Sapote Canistel Marhey Sapote Mango Papaya Sapodilla Star Apple	0	18.5	2	37

<sup>1</sup> For a complete list of crops within a crop group, see **Table 2. Crop-specific Use Directions**.

<sup>2</sup> DO NOT use on Concord or Noiret (NY73.0136.17) due to foliar injury. Possible foliar injury could occur to Worden, Fredonia, Niagara, Steuben, Rougeon or related varieties. Not all varieties have been thoroughly tested.

<sup>3</sup> At maximum use rate per application.

\* The maximum number of applications per season is 3 ground applications only or 2 ground applications and one aerial application.

<sup>5</sup> The maximum product rate per acre per season is 84 ounces if 3 ground applications are made and 70 ounces per season if 2 ground and one aerial application are used.

Aerial application is permitted for all labeled crop uses.

No aerial application in New York state except as permitted under FIFRA Section 24(c), Special Local Need Registration.

#### Table 2. Crop-specific Use Directions

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Berries Group	Alternaria leaf spot and fruit rot	18.5 to 23 ozs	4	92 ozs	0 days
Bushberry	(Alternaria spp.)	per acre		per acre	
Blueberry	Anthracnose				
(highbush and	(Colletotrichum spp.,				
lowbush)	Elsinoe spp.)				
Currant	Botrytis gray mold				
Goosebern	(Botrytis cinerea)				
Huckleberry	Losf anat and blatab				
	Mycosphaerella spo				
Blackberry	Septoria spp.)				
(all varieties) Loganberry Raspberry	Monilinia blight and mummy berry ( <i>Monilinia</i> spp.)				
	twig blight, and fruit rot (Phomopsis spp.)				
	Powdery mildew ( <i>Sphaerotheca</i> spp., <i>Microsphaera</i> spp., <i>Oidium</i> spp.)				
	Spur blight ( <i>Didymella</i> spp., <i>Phoma</i> spp.)				
	Suppression Only Rust (Puccianiastrum spp., Arthuriomyces spp., Phragmidium spp., Kuehneola spp.)				

Application Directions. Begin applications of Pristine® fungicide prior to onset of disease development and continue on a 7- to 14-day interval.

Use the shorter interval and/or the higher rate when disease pressure is high.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than four (4) applications of Pristine or other Group 7 or 11 fungicides per season.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Bulb Vegetables	Botrytis leaf blight	14.5 to 18.5 ozs	6	111 ozs	7 days
Group	(Botrytis spp.)	per acre		per acre	
Leek	Botrytis neck rot*				
Onions (all varieties)	(Botrytis spp.)				
Shallot	Purple blotch and leaf blight	10.5 to 18.5 ozs			
:	(Alternaria porri)	per acre			
4	Stemphylium leaf blight				
	and stalk rot				
	(Stempnyllum vesicarium)				
	Suppression Only	18.5 ozs			
	Downy mildew	per acre			
·	(Peronospora destructor)				

Application Directions. For control of neck rot, purple blotch and leaf blight, begin applications of **Pristine® fungicide** prior to onset of disease development and continue on a 14-day interval. If application intervals shorter than 14 days are needed, rotate to another fungicide with a different mode of action.

Use the higher rate when disease pressure is high.

Applications made to control purple blotch, leaf blight and stalk rot will also suppress downy mildew. If downy mildew occurs during a **Pristine** application for these diseases, immediately follow the **Pristine** application with a downy mildew fungicide with a different mode of action.

\*Not registered for use in California.

For downy mildew, rotate each application of Pristine with an application of a labeled fungicide with a different mode of action.

No restriction on livestock grazing or feeding.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than six (6) applications of Pristine or other Group 7 or 11 fungicides per season.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Carrots	Alternaria leaf spot (Alternaria spp.)	8 to 10.5 ozs per acre	6	63 ozs per acre	0 days
	Cercospora leaf spot (Cercospora spp.)				
	Powdery mildew ( <i>Erysiphe</i> spp.)				
	Suppression Only Southern root rot (Sclerotium rolfsii)				

Application Directions. Begin applications of Pristine® fungicide prior to onset of disease development and continue on a 7- to 14-day interval.

Use the higher rate and the shorter interval when disease pressure is high.

No restriction on livestock grazing or feeding for carrot culls.

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Resistance Management. To limit the potential for development of resistance, DO NOT make more than six (6) applications of Pristine or other Group 7 or 11 fungicides per crop growing season.

Table 2.	<b>Crop-specific</b>	Use	Directions	(continued)	)
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Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Celery	Alternaria leaf spot	10 to 15 ozs	2	50 ozs	0 days
Celery (Chinese)	Anthracnose (Colletotrichum spp.)	per acre		per acre	
÷ •	Ascochyta leaf spot (Ascochyta spp.)				
:	Cercospora leaf spot (Cercospora spp.)				
	Downy mildew ( <i>Peronospora</i> spp., <i>Bremia</i> spp.)				
	Phoma ( <i>Phoma</i> spp.)				
	Rust (Puccinia spp.)				
	Powdery mildew (Erysiphe spp.)				
	Septoria leaf spot ( <i>Septoria</i> spp.)				
	White rust ( <i>Albugo</i> spp.)				
:	Botrytis rot ( <i>Botrytis</i> spp.)	25 ozs per acre			
	Sclerotinia rot and blight (Sclerotinia spp.)				

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Cotton	Alternaria leaf spot (Alternaria spp.)	12.5 to 25 ozs per acre	2	50 ozs per acre	30 days
	Anthracnose, boll rot (Glomerella spp.)				
	Ascochyta blight, boll rot ( <i>Ascochyta</i> spp.)				
	Cercospora leaf spot (Cercospora spp.)				
	Diplodia boll rot (Diplodia spp.)				
	Hard lock, boll rot ( <i>Fusarium</i> spp.)				
Application Direct	ions. Begin applications of Pristine® fun	gicide prior to the onset of	of disease developme	ent and continue on a	7- to 14-day

Use shorter interval when disease pressure is high.

Feed containing commodities from cotton production and processing can be fed to livestock.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Cucurbit Vegetables Group Includes all types and hybrids of: Chavote	Downy mildew (Pseudoperonospora cubensis) Alternaria blight (Alternaria cucumerina)	12.5 to 18.5 ozs per acre	4	74 ozs per acre	0 days
Chinese waxgourd Citron melon Cucumber Gherkin Pumpkin Watermelon <b>Edible Gourd</b> Chinese okra	(Cercospora itea spot (Cercospora citrulina) Gummy stem blight (Didymella bryoniae) Powdery mildew (Sphaerotheca fuliginea, Erysiphe cichoracearum )				
Hyotan Momordica spp. Balsam apple Balsam pear Bitter melon Chinese cucumber					
Muskmelon Cantaloupe Casaba Crenshaw melon Golden pershaw melon Honeydew melon Honey balls Mango melon Persian melon Pineapple melon Santa Claus melon Snake melon	Anthracnose (Colletotrichum orbiculare)	18.5 ozs per acre			
Summer Squash Crookneck squash Scallop squash Straightneck squash Vegetable marrow Zucchini					
Winter Squash Acorn squash Butternut squash Calabaza Hubbard squash Spaghetti squash					

See Cucurbit Vegetables Group Information following. (continued)

#### **Cucurbit Vegetables Group Information**

Application Directions. Begin applications of **Pristine® fungicide** prior to onset of disease development and continue on a 7- to 14-day interval.

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Use the higher rate and the shorter interval when disease pressure is high.

Use the highest labeled rate for anthracnose.

Tank Mixes with Adjuvants and Other Products. BASF evaluations indicate that tank mixes of additives, adjuvants, and/or other products with **Pristine** may result in injury. This is particularly true for muskmelon crops such as cantaloupe and honeydew. Users need to be aware of this, proceed with caution, and test for crop safety when tank mixing, as stated below.

Applications of additives, adjuvants, and/or other products that increase penetration may cause injury when mixed with **Pristine**. Injury potential from these kinds of tank mixes may decrease with lower rates of the tank mix partner. Users are advised to test for crop safety, as stated below.

BASF has not tested all varieties and cultivars with all possible tank mix combinations and rates of additives, adjuvants, and/or other products. Local environmental conditions also influence crop tolerance and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Pristine** with other products.

To minimize the likelihood of crop injury, BASF recommends testing **Pristine** in combination with additives, adjuvants, and/or other products for crop safety on a small portion of the crop. However, environmental variability precludes direct and consistent projection of small area test results to future use.

Consult a BASF representative for more information concerning additives or adjuvants.

DO NOT tank mix Pristine with malathion, Kelthane<sup>®</sup> agricultural miticide, Thiodan<sup>®</sup> insecticide, Phaser<sup>®</sup> insecticide, Lannate<sup>®</sup> insecticide, Lorsban<sup>®</sup> insecticide, M-Pede<sup>®</sup> insecticide/fungicide, or Botran<sup>®</sup> fungicide as crop injury may result.

**Resistance Management.** To limit the potential of development of resistance, **DO NOT** make more than four (4) applications of **Pristine** per season.

**DO NOT** make more than one (1) application of **Pristine** before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Dry Beans (except soybeans) Lupinus spp. Lupine Sweet lupine Phaseolus spp. Field bean Kidney bean Lima bean (dry) Navy bean Pink bean Pink bean Pink bean Pink bean Vigna spp. Adjuki bean Blackeyed pea Catjang Crowder pea Moth bean Miung bean Rice bean	Alternaria leaf and pod spot (Alternaria spp.) Ascochyta blight (Phoma exigua, Ascochyta spp.) Cercospora leaf spot (Cercospora spp.) Downy mildew (Phytophthora nicotianae) Mycosphaerella blight (Mycosphaerella blight (Mycosphaerella spp.) Powdery mildew (Erysiphe polygoni) Rust (Uromyces appendiculatus) Septoria leaf spot (Septoria spp.)	10 to 15 ozs per acre	2	50 ozs per acre	21 days
Southern pea Urd bean	Anthracnose ( <i>Colletotrichum</i> spp.) Botrytis gray mold ( <i>Botrytis cinerea</i> ) White mold ( <i>Sclerotinia sclerotiorum</i> )	15 to 25 ozs per acre			

Application Directions. For optimal disease control, begin applications of **Pristine® fungicide** prior to onset of disease development or at the beginning of flowering and repeat on a 5- to 14-day interval if conditions are conducive for disease development.

Use the higher rate and shorter interval when disease pressure is high.

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Resistance Management. DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

Restrictions. DO NOT use on soybean, cowpeas, field pea and grain lupine. DO NOT feed treated pea commodities to livestock.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Grapes (except Concord, Worden, Fredonia, Niagara and related varieties)	Angular leaf spot (Mycosphaerella angulata) Anthracnose (Elsinoe ampelina)	8 to 12.5 ozs per acre	5	69 ozs per acre	14 days
	Black rot (Guignardia bidwellii) Downy mildew (Plasmopara viticola) Leaf blight (Pseudocercospora vitis) Phomopsis cane and leaf spot (Phomopsis viticola) Powdery mildew (Uncinula necator) Ripe rot (Colletotrichum gloeosporioides) Aids in Control Only Summer bunch rot (Sour rot) (Cladosporium spp. and Aspergillus spp.) Suppression Only Botrytis gray mold				
	Botrytis gray mold (Botrytis cinerea)	18.5 to 23 ozs per acre	3		·

Application Directions. For powdery mildew control, begin applications of Pristine® fungicide as of bud break prior to onset of disease, using 8 ozs per acre on a 10- to 14-day interval, or 8 to 12.5 ozs per acre on a 14- to 21-day interval.

For black rot and downy mildew control, begin applications of **Pristine** as of pre-bloom prior to onset of disease and continue applications on a 10- to 14-day interval.

For all other diseases listed except for Botrytis gray mold, begin applications of **Pristine** prior to onset of disease and continue applications on a 10- to 14-day interval. **Pristine** applied at rates of 8 to 12.5 ozs per acre for control of the listed diseases will also suppress Botrytis gray mold.

For control of Botrytis gray mold, apply 18.5 to 23 ozs per acre of **Pristine** prior to onset of disease development when conditions favor disease development during early bloom, bunch pre-closure and veraison up to 14 days before harvest.

Use the higher rate and the shorter interval when disease pressure is high.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours except when performing cane tying, cane turning or cane girdling. The REI is 5 days for treated grapes when conducting cane tying, cane turning or cane girdling.

DO NOT use on Concord or Noiret (NY73.0136.17) due to foliar injury. Possible foliar injury could occur to Worden, Fredonia, Niagara, Steuben, Rougeon or related varieties. Not all varieties have been thoroughly tested.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than five (5) applications of Pristine or other Group 7 or 11 fungicides per season.

#### Table 2. Crop-specific Use Directions (continued)

#### Pristine® fungicide Hops Ground Application Use Directions

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Ground Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Hops (Ground Application)	Powdery mildew (Erysiphe cichoracearum, Sphaerotheca spp.) Downy mildew (Pseudoperonospora humuli)	14 ozs per 100 gallons of dilute spray <b>DO NOT</b> use more than 28 ozs per	3 (2 if one aerial application is made.)	84 ozs per acre (70 ozs per acre if one aerial application is made )	14 days

Application Directions. Begin applications of Pristine prior to disease development and continue on a 10- to 21-day interval.

Use the shorter interval when disease pressure is high.

Application rates are based on 100 gallons of dilute spray applied to runoff. Adjust water volume to maintain thorough coverage. Use 25 to 50 gallons of dilute spray per acre prior to trellising and 100 to 200 gallons of dilute spray per acre thereafter. **DO NOT** use more than 200 gallons per acre of this mixture. If additional spray volume is needed for thorough coverage, use 28 ozs of **Pristine** per acre in the required spray volume.

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than three (3) applications of **Pristine** per season (counting both ground and aerial applications). **DO NOT** make more than two (2) sequential applications of **Pristine** before alternating to a labeled fungicide with a different mode of action.

Restrictions. DO NOT use more than 200 gallons per acre of this mixture. If additional spray volume is needed for thorough coverage, use 28 ozs of Pristine per acre in the required spray volume.

#### **Pristine Hops Aerial Application Use Directions**

Crop	Target Disease	Aerial Product Use Rate per Application	Maximum Number of Aerial Applications per Season	Aerial Application Timing Growth Stage	Minimum Time from Aerial Application to Harvest (PHI)
Hops (Aerial Application)	Powdery mildew (Erysiphe cichoracearum, Sphaerotheca humuli, Sphaerotheca macularis, Sphaerotheca spp.)	14 ozs per acre as a tank mix with a myclobutanil fungicide product (see myclobutanil rate following)		Wire to 14 days preharvest	14 days

Application Directions. Aerial application may result in reduced control due to lack of canopy penetration and coverage. Aerial application should only be used in situations when ground application is not possible.

Apply a preventive spray of **Pristine** at 14 ozs as a tank mix with a myclobutanii fungicide product at rates **equivalent to 0.15 lb per acre of active ingredient** (including but not limited to: **Rally\* 40W fungicide** at 6 ozs product per acre or **Sonoma™ 40WSP fungicide** at 6 ozs product per acre) for resistance management.

Avoid applications under conditions when uniform coverage cannot be obtained or when spray drift may occur. Use a minimum of 10 gallons of water per acre when applying by air. Thorough coverage is essential.

Because complete coverage is important for effective disease control, aerial application at low volumes may result in reduced control due to lack of canopy penetration and coverage.

Mixing **Pristine** with surfactants or foliar fertilizers is not recommended when applying by air. Similarly, adjuvants that enhance pesticide penetration may cause phytotoxicity when used with **Pristine** applied by air.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) aerial application of Pristine per season and include a myclobutanil product as a tank mix as described.

#### Table 2. Crop-specific Use Directions (continued)

	Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Leaf (exc and Am Aru Che Chr (e ga Cor Cre (g uf Dar Doc Enc Ora Par Pur (g. Wi Rac (re	y Greens ept Brassica head lettuce leaf lettuce) aranth gula arvil ysanthemum dible-leaved and arland) m salad ss arden and bland) delion k delion k sley slane arden and inter) dicchio ad chicory)	Alternaria leaf spot (Alternaria spp.) Anthracnose (Colletotrichum spp.) Ascochyta leaf spot (Ascochyta spp.) Cercospora leaf spot (Cercospora spp.) Downy mildew (Peronospora spp.) Phoma (Phoma spp.) Powdery mildew (Erysiphe spp., Phyllactinia spp., Sphaerotheca spp.) Rust (Puccinia spp.) Septoria leaf spot (Septoria spp.) White rust (Albugo spp.) Botrytis rot (Botrytis rot	10 to 15 ozs per acre 15 to 25 ozs per acre	2	50 ozs per acre	14 days
		Sclerotinia rot and blight (Sclerotinia spp.)				

Application Directions. Begin applications of Pristine® fungicide prior to the onset of disease development and continue on a 7-day interval.

Use the higher rate when disease pressure is high.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Leafy Petioles (except Brassica) Cardoon Celtuce Fennel (Florence) Rhubarb Swiss chard	Alternaria leaf spot (Alternaria spp.) Anthracnose (Colletotrichum spp.) Ascochyta leaf spot (Ascochyta spp.) Cercospora leaf spot (Cercospora spp.) Downy mildew (Peronospora spp., Bremia spp.) Phoma (Phoma spp.) Powdery mildew (Erysiphe spp.) Rust (Puccinia spp.) Septoria leaf spot (Septoria spp.) White rust (Albugo spp.)	10 to 15 ozs per acre	2	50 ozs per acre	0 days
	Botrytis rot ( <i>Botrytis</i> spp.) Sclerotinia rot and blight ( <i>Sclerotinia</i> spp.)	15 to 25 ozs per acre			

Application Directions. Begin applications of Pristine® fungicide prior to the onset of disease development and continue on a 7-day interval.

Use the higher rate when disease pressure is high.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Peanut	Early leaf spot (Cercospora arachidicola)	12.5 to 18.5 ozs per acre	3	84 ozs per acre	14 days
	Late leaf spot (Cercosporidium personatum)				
	Pepperspot (Leptosphaerulina crassiasca)				
	Rust (Puccinia arachidis)				
	Web blotch (Phoma arachidicola)				
	Rhizoctonia limb rot, peg rot, and pod rot ( <i>Rhizoctonia solani</i> )	18.5 to 28 ozs per acre			
	Sclerotium rot, Southern stem rot, Southern blight, and white mold (Sclerotium rolfsii)				
	Sclerotinia blight (Sclerotinia minor)				

Application Directions. For control of pepperspot, rust, web blotch, early and late leaf spot, begin applications of Pristine® fungicide prior to onset of disease development and continue on a 14-day interval.

For control of Rhizoctonia and Sclerotium rot, begin applications of Pristine prior to onset of disease development and continue on a 14-day interval.

For control of Sclerotinia blight, begin applications of **Pristine** prior to onset of disease development or 45 to 60 days after planting. Make a second application 14 to 21 days later.

Use the higher rate and/or shorter spray interval when disease pressure is high or in fields with a history of disease.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than three (3) applications of Pristine per season.

**DO NOT** make more than two (2) sequential applications of **Pristine** before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

Restrictions: Use of Pristine with silicone-based adjuvants may cause crop injury.

DO NOT feed treated peanut hay to livestock.

DO NOT graze livestock or harvest for forage use.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Pistachio	Alternaria late blight (Alternaria spp.)	10.5 to 14.5 ozs per acre	4	58 ozs per acre	14 days
	Botrytis blossom and shoot blight ( <i>Botrytis cinerea</i> )				
	Panicle and shoot blight (Botryosphaeria dothidea)				

Application Directions. Apply Pristine® fungicide prior to onset of disease development and continue on a 10- to 30-day interval.

Use the higher rate and shorter intervals when disease pressure is high.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than four (4) applications of Pristine or other Group 7 or 11 fungicides per season.

DO NOT make more than two (2) sequential applications of Pristine before alternating to a labeled fungicide with a different mode of action.

For aerial application to pistachio trees, use no less than 10 gallons of spray solution per acre.

#### Table 2. Crop-specific Use Directions (continued)

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Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Pome Fruits Grou Apple Crabapple Loquat Mayhaw Oriental pear Pear Quince	<ul> <li>Alternaria blotch (Alternaria mali)</li> <li>Apple scab (Venturia inaequalis)</li> <li>Bitter rot (Colletotrichum spp.)</li> <li>Black rot/Frogeye leaf spot (Botryosphaeria obtusa)</li> <li>Blue mold* (Penicillium spp.)</li> <li>Brooks spot (Mycosphaerella pomi)</li> <li>Flyspeck (Zygophiala jamaicensis)</li> <li>Gray mold* (Botrytis spp.)</li> <li>Pear scab (Venturia pirina)</li> <li>Powdery mildew (Podosphaera leucotricha)</li> <li>Sooty blotch (disease complex)</li> <li>White rot (Botryosphaeria dothidea)</li> <li>Suppression Only Cedar apple rust (Gymnosporangium juniperi- virginianae)</li> <li>Ouince rust</li> </ul>	14.5 to 18.5 ozs per acre	4	74 ozs per acre	0 days
	(Gymnosporangium clavipes)				

Application Directions for scab, powdery mildew, frogeye leaf spot and rust. Begin applications of Pristine® fungicide prior to disease development and continue on a 7- to 10-day interval.

Use the higher rate and shorter interval when disease pressure is high.

Application Directions for blue mold, gray mold, sooty blotch, flyspeck, white rot, black rot, bitter rot and Alternaria blotch. Begin applications of Pristine prior to disease development and continue on a 7- to 14-day interval.

\*Not registered for use in California.

Use the higher rate and shorter interval when disease pressure is high.

No restriction on livestock grazing or feeding for pome fruits feed items.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than four (4) applications of Pristine per season.

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#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Soybeans	Alternaria leaf spot ( <i>Alternaria</i> spp.)	8 to 16 ozs per acre	2	32 ozs per acre	21 days
	Anthracnose (Colletotrichum truncatum)				
	Brown spot (Septoria glycines)				
	Cercospora blight (Cercospora kikuchii)				
	Frogeye leaf spot (Cercospora sojina)				
	Pod and stem blight (Diaporthe phaseolorum)				
	Rhizoctonia aerial blight ( <i>Rhizoctonia solani</i> )				
	Asian soybean rust* (Phakopsora pachyrhizi)	12.5 to 16 ozs per acre			
	Southern blight (Sclerotium rolfsii)	16 ozs per acre			
	White mold (Sclerotinia sclerotiorum)				

Application Directions. For optimal disease control, apply **Pristine® fungicide** at early flowering (R1 to R3 growth stage) or prior to disease development, whichever is earlier. Make a second application 7 to 21 days later if monitoring shows disease development or if conditions are conducive for disease infection.

Use the higher labeled rate and shorter interval when disease pressure is high.

Pristine may be applied with adjuvants.

\*See Management of Asian Soybean Rust section for specific instructions on use of Pristine to control Asian soybean rust.

Soybean forage may be fed no sooner than 14 days after last application. Soybean hay may be fed no sooner than 21 days after last application.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than one (1) application of Pristine before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

#### Management of Asian Soybean Rust

If Asian soybean rust spores are present in the area, soybeans may be infected, even if symptoms are not present. Once Asian soybean rust is established (infection level<sup>1</sup> greater than 3% to:5%) on the soybean plant, control is difficult to achieve with a curative approach. Optimum disease control is achieved by utilizing the combination of a preventive fungicide like **Pristine® fungicide** plus an EPAapproved fungicide (non-Qol mode of action) with known curative activity<sup>2</sup> against Asian soybean rust.

## A comprehensive monitoring and scouting program must be continued after initial fungicide applica-

tions. Fungicide treatments that include **Pristine** will protect soybeans against Asian soybean rust for up to 21 days, but subsequent disease infection of treated leaves can occur earlier if conditions are favorable for disease development. New leaves emerging after treatment will not be protected from new infection pressure.

#### Monitoring for Asian Soybean Rust Presence

Information on the geographic distribution of Asian soybean rust can be gathered from multiple sources including local retailers, university extension, USDA, the internet and BASF. These sources must be evaluated frequently during the growing season to determine the risk and local presence of rust spores in your geography. Rust spores can move hundreds of miles in only a few days based on wind direction and speed. If soybean rust is present in the area or if conditions exist where spore movement from infected areas is expected or predicted, soybean fields should be treated utilizing the **Pristine** program described in **Table 2A.** 

#### **Field Scouting**

Scout soybean fields for presence of Asian soybean rust frequently. Soybean rust establishment is favored by high humidity, free moisture present on soybean leaves and moderate air temperatures. Asian soybean rust, in most cases, becomes especially aggressive and visible when soybean plants reach the reproductive stage of growth (flowering). Check higher risk areas of soybean field for signs of the disease first. These include: earlier planted or maturing soybeans; high moisture areas near lakes, rivers or other water sources that keep humidity high; areas in the field that remain shaded longer resulting in higher free leaf moisture; low areas of fields where humidity (dew) can settle and persist longer. Look for any signs or symptoms of soybean rust presence. If Asian soybean rust is present in your field immediately implement Pristine program described in Table 2A.

**Scouting tip:** Collect leaves from suspected plants, place suspect leaves in a clear plastic bag, inflate bag with breath (adds humidity to bag) and seal, place in warm (75° |F to 90° F) environment and incubate in humid plastic bags for 24 hours. Leaves in the bags should display accelerated disease development and show spore pustule development within 24 hours. Spore development should occur approximately two times faster than under normal field conditions.

## Pristine Directions for the Management of Asian Soybean Rust

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#### Preventive + Curative Treatment Existing Infections and/or if Asian Soybean Rust Spores are Present or Predicted to be in the Area

A tank mixture with an EPA-approved fungicide (non-Qol mode of action) with known curative activity<sup>2</sup> against Asian soybean rust is required for control of existing Asian soybean rust infections, even if symptoms are not present. If symptoms or soybean rust lesions and/or pustules are present on soybean plants, some yield loss may have already occurred.

The **Pristine** program described in **Table 2A** must be used for Asian soybean rust if **one or more** of the following conditions exists:

- 1. Asian soybean rust is present in the soybean field based on field scouting.
- 2. Asian soybean rust is present in the local area.
- Predictive models based on weather/wind have predicted that spores have reached or will soon reach your area.
   or
- USDA and/or university extension report that Asian soybean rust (including spores) has been identified in your geographical area.

Fungicide treatments that include **Pristine** plus an EPAapproved fungicide (non-Qol mode of action) with known curative activity<sup>2</sup> against Asian soybean rust will protect soybeans for up to 21 days, but subsequent infection of treated leaves can occur earlier if conditions are favorable for disease development. New leaves emerging after treatment will not be protected from new infection pressure.

**IMPORTANT:** Because a second fungicide application may be required, a comprehensive monitoring and scouting program must be continued after the initial fungicide application. Base the need for a second application on soybean growth stage, yield potential and conditions favorable for continued Asian soybean rust infection.

Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity<sup>2</sup> if a third application is needed.

- <sup>1</sup> Infection level = number of leaves with symptoms/signs of Asian soybean rust per 100 leaves.
- <sup>2</sup> Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state with known curative properties against Asian soybean rust.

#### **Preventive Treatment**

Asian Soybean Rust (including spores) Not Present or Predicted to be Present in the Field or Area The preventive Pristine® fungicide program described in Table 2B should only be used if none of the conditions described in one through four of the section immediately preceding exist. Growers must continue to monitor and scout soybean fields as described in sections Monitoring for Asian Soybean Rust Presence and Field Scouting.

A second fungicide application may be needed if Asian soybean rust (including spores) is detected or identified in the treated field or geographical area. Continue a comprehensive monitoring and scouting program after the initial application of **Pristine**. Infection of treated soybean leaves can occur and new leaves emerging after treatment will not be protected from Asian soybean rust. The need for a second application should be based on soybean growth stage, yield potential and environmental conditions. If a second application is necessary, apply **Pristine** plus an effective, EPA-approved fungicide (non-Qol mode of action) with known curative activity<sup>1</sup> against Asian soybean rust.

**IMPORTANT:** Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity<sup>1</sup> if a third application is needed.

#### Need for Season-long Monitoring, Regardless of Pristine Program Selected

The key to adequate season-long control of Asian soybean rust is careful monitoring and scouting of soybean fields all season, especially from initiation of flowering through pod fill. After the first application, maintain a thorough monitoring and scouting program. Apply follow-up fungicide treatments as needed based on crop stage of growth, yield potential, and as the residual protection of the first application begins to wane.

Thorough spray coverage of soybean plants is essential for optimum control. Utilize spray application techniques including sufficient water carrier per acre, pressure and proper nozzle selection that ensure thorough coverage. See the **Pristine** main label and your local retailer for recommendations.

<sup>1</sup> Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state with known curative properties against Asian soybean rust.

# Table 2A. Pristine<sup>®</sup> fungicide application instructions when Asian soybean rust has been identified in the soybean field to be treated, is present in the local geographical area, or spores have been predicted to be in the local geographical area

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	Treatment	<b>Pristine</b> (12.5 to 16 ozs/acre) <sup>1</sup> + adjuvant + EPA-approved fungicide (non-Qol mode of action) with known curative activity against Asian soybean rust <sup>2</sup>
Application 1	Timing	This application must be made soon after first rust infection, preventively, or at blooming start (growth stage R1 to R3), even if symptoms have not appeared. Refer to <b>Pristine Directions for the Management of Asian Soybean Rust</b> section and repeat application as necessary, depending on disease evolution.
	Treatment	<b>Pristine</b> (12.5 to16 ozs/acre) <sup>1</sup> + adjuvant + EPA-approved fungicide (non-Qol mode of action) with known curative activity against Asian soybean rust <sup>2</sup>
Application 2 <sup>3</sup>	Dication 2 <sup>3</sup> Timing	21 days after Application 1 or Earlier (no sooner than 7 days) if monitoring shows active disease

<sup>1</sup> Higher labeled rates of **Pristine** provide longer residual control of Asian soybean rust.

<sup>2</sup> Contact your local, state or federal agricultural authorities or local retailer for a list of approved fungicides in your state approved for this purpose.
<sup>3</sup> Continue to carefully monitor and scout soybean fields as described in the **Management of Asian Soybean Rust** section. Base need for second application on results of monitoring and scouting for disease, crop growth stage and yield potential. Consult with your local retailer or university extension representative for guidance, as needed. Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity if the third application is needed.

# Table 2B. Pristine application instructions when Asian soybean rust has not been identified in the soybeanfield to be treated, is not present in the local geographical area, and spores are not present orpredicted to be present in the local geographical area

	Application 1	Treatment	Pristine (12.5 to 16 ozs/acre) <sup>1</sup> + adjuvant
		Timing	R1 to R3 leaf stage (1 <sup>st</sup> flower to beginning pod)
	Application 2 <sup>3</sup>	Treatment	<b>Pristine</b> (12.5 to 16 ozs/acre) <sup>1</sup> + adjuvant + EPA-approved fungicide (non-Qol mode of action) with known curative activity against Asian soybean rust <sup>2</sup>
		Timing	21 days after Application 1 or Earlier (no sooner than 7 days) if monitoring shows active disease

<sup>1</sup> Higher labeled rates of **Pristine** provide longer residual control of Asian soybean rust.

<sup>2</sup> Contact your local, state or federal agricultural authorities or local retailer for a list of approved fungicides in your state approved for this purpose.
<sup>3</sup> Continue to carefully monitor and scout soybean fields as described in the **Management of Asian Soybean Rust** section. If Asian soybean rust, including spores, is detected in your fields or local geography, the treatment described in Application 2 may be needed. Base the need for this treatment on crop stage of growth, environmental conditions and yield potential. Consult with your local retailer or university extension representative for guidance, as needed. Refer to application information preceding. Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity if the third application is needed.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Spinach (New Zealand and vine)	Alternaria leaf spot (Alternaria spp.) Anthracnose (Colletotrichum spp.) Ascochyta leaf spot (Ascochyta spp.) Cercospora leaf spot (Cercospora spp.) Downy mildew (Peronospora spp.) Phoma (Phoma spp.) Powdery mildew (Erysiphe spp., Phyllactinia spp., Sphaerotheca spp.) Rust (Puccinia spp.) Septoria leaf spot (Septoria leaf spot (Septoria spp.) White rust (Albugo spp.) Botrytis rot (Botrytis rot (Botrytis spp.) Sclerotinia rot and blight	10 to 15 ozs per acre 25 ozs per acre	2	50 ozs per acre	14 days
	(Sclerotinia spp.)				

Application Directions. Begin applications of Pristine® fungicide prior to the onset of disease development and continue on a 7-day interval.

Use the higher rate when disease pressure is high.

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than one (1) application of **Pristine** before alternating to a labeled fungicide with a different mode of action for at least one (1) application.

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#### Table 2. Crop-specific Use Directions (continued)

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	Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Sto	ne Fruits Group	Alternaria leaf spot	10.5 to 14.5 ozs	5	72.5 ozs	0 days
Ap	ricot	(Alternaria spp.)	per acre		per acre	
Ch (s	erry weet and tart)	Anthracnose				
Ne	ctarine	(Colletotrichum spp.)				
Pea	ach	Blossom blight				
Piu	M Il variation)	(Monilinia spp.)				
Plu	mcot	Brown rot				
Pru	ine	(Monilinia spp.)				
		Leaf spot				
	•	(Blumeriella jaapii)				
	1 1 2	Powdery mildew				
		(Sphaerotheca spp., Podosphaera spp.)				
	<b>;</b>	Ripe fruit rot				
		(Monilinia fructicola, Monilinia laxa, Botrytis cinerea, Rhizopus spp.)				
		Puet				
	1	(Tranzschelia discolor)				
	1	Scab				
ł	:	(Cladosporium carpophilum)				
		Shothole				
		(Wilsonomyces carpophilus)	-			
Ne	ctarine	Suppression Only				
Pe	ạch	Leaf curl				
	1	(raprinina delormans)			l	

Application Directions. Begin application of Pristine<sup>®</sup> fungicide at pink bud or prior to onset of disease development and continue on a 7- to 14-day interval.

Use the shorter interval and/or the higher rate when disease pressure is high.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than five (5) applications of Pristine or other Group 7 or 11 fungicides per season.

DO NOT make more than two (2) sequential applications of Pristine before alternating to a labeled fungicide with a different mode of action.

For aerial application to stone fruit trees, use no less than 10 gallons of spray solution per acre.

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#### Table 2. Crop-specific Use Directions (continued)

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Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Strawberries	Anthracnose (Colletotrichum spp.) Botrytis gray mold (Botrytis cinerea)	18.5 to 23 ozs per acre	5	115 ozs per acre	0 days
	Leaf spot ( <i>Mycosphaerella fragariae</i> ) Powdery mildew				

Application Directions. Begin applications of Pristine® fungicide no later than 10% bloom, or prior to disease development, and continue on a 7- to 14-day interval.

Use the higher rate and the shorter interval when disease pressure is high.

The restricted-entry interval (REI) for treated strawberries is **12 hours**. Refer to the **Agricultural Use Requirements** box for PPE required for early entry to treated areas as permitted under the Worker Protection Standard.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than five (5) applications of Pristine or other Group 7 or 11 fungicides per season.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Tree Nuts Group	Alternaria leaf spot	10.5 to 14.5 ozs	4	58 ozs	14 days
Almond Beech nut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert Hickory nut Macadamia nut Pecan Walnut (black and English)	(Alternaria spp.) Anthracnose (Colletotrichum spp.) Blossom blight (Monilinia spp.) Eastern filbert blight (Anisogramma anomala) Leaf rust (Tranzschelia discolor) Scab (Cladosporium carpophilum, C. caryigenum) Green fruit rot (Botrytis cinerea) Shothole (Wilsonomyces carpophilus)	per acre		per acre	(25 days for almond)

Application Directions. In almond, begin applications of **Pristine® fungicide** at pink bud and continue on a 7- to 14-day interval up to 25 days before harvest. In filbert, begin applications at budswell to budbreak, prior to infection and onset of disease development. Continue on a 7- to 14-day interval to cover and protect new growth. In pecan, begin applications of **Pristine** prior to onset of disease development and continue on a 7- to 21-day interval for the control of scab. For all other crops listed above, apply **Pristine** prior to disease development and continue on a 7- to 28-day interval. In all cases, use the shorter interval when shoot growth is very rapid.

Use the shorter interval and/or the higher rate when disease pressure is high.

For aerial application to tree nuts, use no less than 10 gallons of spray solution per acre.

No restriction on livestock feeding for almond hulls.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than four (4) applications of Pristine or other Group 7 or 11 fungicides per season.

#### Table 2. Crop-specific Use Directions (continued)

Сгор	Target Disease	Product Use Rate per Application	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Tropical Fruits Avocado Black sapote Canistel Marney sapote Mango Papaya Sapodilla Star apple	Anthracnose (Colletotrichum gloeosporioides) Black spot (Asperisporium caricae, Alternaria alternata, Cercospora papayae) Dry rot (Mycosphaerella spp.) Powdery mildew (Oidium spp., Erysiphe spp.) Pseudocercospora spot/blotch (Pseudocercospora purpurea, Cercospora spp.) Scab (Elsinoe mangiferae)	18.5 ozs per acre	2	37 ozs per acre	0 days

Application Directions. Begin application of Pristine® fungicide prior to the onset of disease development and repeat application 7 days later, as needed, or alternate with another labeled fungicide having a different mode of action.

Resistance Management. To limit the potential for development of resistance, DO NOT make more than two (2) applications of Pristine per season.

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