



OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

October 31, 2024

Blake Cowen
blake.cowen@albaughllc.com
ALBAUGH, LLC.

Subject: Non-PRIA (Pesticide Registration Improvement Act) Labeling Amendment - add OMRI and "For Organic Production" logo; minor changes
Product Name: BLUE SHIELD DF
Admin Number: 45002-4
EPA Receipt Date: 01/13/2023
Action Case Number: 00471795

Dear Blake Cowen:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the 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 EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have questions, please contact Yasmin Bowers via email at bowers.yasmin@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Kristy Crews". The script is elegant and cursive, with the first letters of "Kristy" and "Crews" being capitalized and prominent.

Kristy Crews, Ph.D., Product Manager 22
FB, RD
Office of Pesticide Programs

COPPER GROUP M01 FUNGICIDE

BLUE SHIELD DF

FUNGICIDE/BACTERICIDE

ACTIVE INGREDIENT:
Copper Hydroxide* 76.77%
OTHER INGREDIENTS: 23.23%
TOTAL: 100.00%

(*Metallic Copper Equivalent - 50%)

*CAS No. 20427-59-2

KEEP OUT OF REACH OF CHILDREN

ANGER PELIGRO

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

FIRST AID	
IF IN EYES	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF SWALLOWED	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact CHEMTREC at 1-800-424-9300 for emergency medical treatment information. NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate use of gastric lavage.	

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

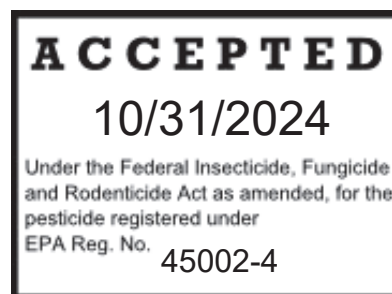
EPA Reg. No. 45002-4

EPA Est. No. _____

NET CONTENTS: _____

Manufactured For:
Albaugh, LLC
1525 NE 36th Street
Ankeny, IA

045002-00004.20241017.DRAFT



PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER. Corrosive. Causes irreversible eye damage. Harmful if swallowed. Harmful if absorbed through skin. Harmful if inhaled. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing dust. Wear protective eye wear (goggles, safety glasses, face shield), long sleeved shirt, long pants, shoes, socks, and chemical resistant gloves (such as made out of any waterproof material).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators and other handlers must wear the following:

1. Long-sleeved shirt and long pants
2. Chemical resistant gloves made of any waterproof material including Barrier Laminate, Butyl Rubber \geq 14 mils, Nitrile Rubber \geq 14 mils, Neoprene Rubber \geq 14 mils, Natural Rubber \geq 14 mils, Polyethylene Polyvinyl Chloride (PVC) \geq 14 mils, or Viton \geq 14 mils
3. Shoes plus socks
4. Protective eyewear such as face shield or goggles

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 exist, 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.

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

USER SAFETY RECOMMENDATIONS

Users should:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and change into clean clothing.
3. 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

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

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater 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) 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 worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

Notify workers of the application by warning them orally in a manner they can understand.

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 including Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Natural Rubber ≥ 14 mils, Polyethylene Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils Shoes plus socks
- Protective eyewear

For greenhouse use the restricted entry interval (REI) is 24 hours.

For at least seven days following the application of copper-containing products in greenhouses:

- At least one container or station designed specifically for flushing eyes is available in operating conditions with the WPS-required decontamination supplies for workers entering the area treated with copper-containing products,
- Workers are informed orally, 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 residues out of their eyes,
 - That if they do get residues in their eyes, they should immediately flush their eyes with the eye flush container that is located with the decontamination supplies and
 - How to operate the eye flush container or eye flush station.

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 until sprays have dried.

RESTRICTIONS

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

PRODUCT INSTRUCTIONS

Blue Shield DF may be applied by Air, or by Dilute or Concentrated Ground Sprayers, or Chemigation on crops and at rates given on this label unless specifically prohibited for that crop use. When selecting a use rate for Blue Shield DF, do not apply less than the labeled minimum amount. Under heavy disease pressure or when conditions favor such, use the higher rate and shorter spray intervals specified for each crop. Use the higher rates for large mature tree

crops. The per acre use rate is applicable for both dilute and concentrate spraying.

Sufficient spray volume and spray pressure are essential to thoroughly penetrate the plant canopy and give thorough spray coverage. On crops sensitive to copper fungicides use the higher volumes of spray water per acre. When making a concentrate or aerial application without specific experience, it is advisable to test for crop tolerance prior to full scale use.

While volume is important in obtaining full spray coverage, other factors such as foliage density, environmental conditions and spray calibrations, have a greater impact. Always be sure that sprayers are calibrated to spray equipment manufacturer's specifications and environmental conditions are within those required by State and local regulatory authorities.

When using adjuvants or other pesticides in combination with this product, always observe the precautionary statements on the product's label and required days before harvest. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. Sprays of Blue Shield DF may be applied up to 24 hours preharvest due to REI for Worker Protection Standard. Before mixing with other products in spray tank, be sure that products are compatible. If compatibility is in question, use the compatibility jar test before mixing a whole tank.

The Pre-Harvest Interval (PHI) for BLUE SHIELD DF is 0-days unless noted.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Blue Shield DF should not be applied in spray water having a pH of less than 6.5 as phytotoxicity may result. Use a buffering agent to increase the pH to 6.5-7.0 if your water source is below 6.5. Also avoid using water having a pH of greater than 9.0 as effectiveness may be reduced. Environmental conditions such as extended periods of wet weather, acid rain, etc. which alter the pH of the leaf surface may affect the performance of Blue Shield DF resulting in possible phytotoxicity or loss of effectiveness.

Agricultural chemicals may perform in an unpredictable manner when tank mixed, especially where several products are involved. Reduced effect on pests or crop injury may occur. Unless recommended on this label or by state/local expert, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization of a new tank mix or tank mixing should not be undertaken.

This product may be reactive on metal and masonry surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray cars, houses, lawn furniture, or other metal surfaces.

MANDATORY SPRAY DRIFT

AERIAL APPLICATIONS:

- Do not release spray at a height greater than 10 ft. above the vegetative canopy or water, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speed exceeds 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the application area.
- Do not apply during temperature inversions.

GROUND BOOM APPLICATIONS:

- Apply with the spray release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure specified for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles - Follow nozzle manufacturers' specifications for setting up nozzles. Generally, to reduce fine droplets, nozzles must be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom must remain level with the crop and have minimal bounce.

RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft. above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

MIXING INSTRUCTIONS FOR SPRAY APPLICATION

Fill the spray tank three-fourths to four-fifths full with clean water. Start agitation (NOTE: Proper agitation creates a rippling or rolling action on the liquid surface). Add Blue Shield DF at the recommended rate.

Mix thoroughly and then add enough water to fill spray tank. Maintain sufficient agitation during mixing and during application of sprays to ensure a uniform spray mixture. When tank mixing with other products, follow the mixing sequence below: (1) micronutrients and fertilizers, (2) wettable powders, dry flowables, and water dispersible granules, (3) liquid flowables, (4) emulsifiable concentrates, and (5) adjuvants. Before adding the second pesticide, be sure that the prior product is well mixed and suspended before adding the next ingredient.

MINIMUM RECOMMENDED SPRAY VOLUME IN GALLONS PER ACRE (GPA)

A full dilute spray on tree crops means the maximum amount of spray when uniformly applied that an acre of such trees will hold to the point that excess spray begins to drip off. Thus the dilute spray volume per acre will depend on tree size and leaf surface per acre. The following listed dilute spray volumes is the volume that will generally provide such coverage on average size of full leafed trees. A concentrate spray is a spray applied in less volumes than a dilute. The extent of the concentration varies by equipment used. Thus the following spray volumes for a concentrated spray are the minimum volumes recommended per acre.

Use Blue Shield DF as noted below unless indicated otherwise in the specific crop directions. Blue Shield DF is adaptable to spraying from aircraft and ground spraying equipment. Depending on the equipment used and the specific crop, the volume applied per acre will differ. Refer to recommended volumes below:

	Aerial (gallons of water/A)	Ground (gallons of water/A)	
		Dilute	Concentrate
Vegetables and Field Crops	3	20	-
Small Fruits	5	150	50
Vines	5	150	50
Fruit and Nut Trees*	10	400	50
Citrus	10	800	100 (20 FL)**

*On young fruit trees, use a minimum of 1 gallon spray per acre.

**Pesticide application equipment such as Curtec or other similar sprayers which are capable of obtaining thorough coverage at low volumes may be used at as low as 20 GPA of spray volume.

CHEMIGATION INSTRUCTIONS

Do not apply this product through any irrigation system using aluminum parts or components as damage to the system may occur. Such application is prohibited regardless of whether the irrigation system is flushed with water after use of this product.

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation system(s) which contain no aluminum parts or components. Do not apply this product through any other type of irrigation system.

Crop injury or lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

A. Center Pivot, Traveler, Big Gun, Motorized Lateral Move, End Tow, and Side (Wheel) Roll Irrigation Equipment: Operate system and injection equipment at normal pressures recommended by the manufacturer of injection equipment used. Fill tank or injection equipment with water. Operate system for one complete circle for center pivot or one complete run for the other recommended equipment, measuring time required, amount of water injected, and acreage contained in circle or run. Mix recommended amount of product for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run, but continue to operate irrigation system until the product has been cleared from last sprinkler head. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.

B. Solid Set and Hand Move Irrigation Equipment: 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 product for acreage to be covered into 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. Provide constant mechanical agitation in the mix tank to ensure that the product will remain in suspension during the injection cycle. This product 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

pesticide is cleared from last sprinkler head.

SAFETY DEVICES

- (1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- (6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- (7) Do not apply when wind speed favors drift beyond the area intended for treatment.

SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water systems means a system for the provision to the public of piped water for human consumption if such a 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. 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. 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.

For additional instructions on safety precautions refer to statements (2), (3), (4), (6), and (7) in the section on SAFETY DEVICES.

POSTING INSTRUCTIONS

Posting of areas to be chemigated is required when 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 when chemigated area is open to the public, such as golf courses or retail greenhouses.

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. This sign is in addition to any sign posted to comply with the Worker Protection Standard. 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 material to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

RESISTANCE MANAGEMENT

Copper Hydroxide - GROUP M01 FUNGICIDE

For resistance management, Blue Shield DF contains copper hydroxide, a Group M01 fungicide with a multi-site contact activity.

Any fungal/bacterial population may contain individuals naturally resistant to Blue Shield DF and other Group M01 fungicides/bactericides. A gradual or total loss of pest control may occur over time if these fungicides/bactericides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

Copper hydroxide is an inorganic non-systemic protectant compound which are generally considered as a low-risk of developing resistance.

Because Blue Shield DF is a protective and not systemic fungicide, thorough coverage of the plant surface must be maintained. A gradual or total loss of control may occur over time if plant growth or weathering reduces the foliage coverage.

To delay fungicide / bactericide resistance, take one or more of the following steps:

- Rotate the use of Blue Shield DF or other Group M01 fungicides/bactericides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicide/bactericides from a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an IPM program for fungicide/bactericide use that includes scouting, uses historical information related to pesticide use, and crop rotation, and which considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide/bactericide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal/bacterial populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information or to report suspected resistance contact your local Albaugh representative at 1-800-247-8013 or local extension specialist to report resistance.

CROPS

The following specific instructions are based on general application procedures. The recommendations of the State Agricultural Extension Service should be closely followed as to timing, frequency and number of sprays per year.

FROST INJURY PROTECTION:

Bacterial Ice nucleation inhibitor - Application of Blue Shield DF made to all crops listed on this label at rates and stages of growth indicated on this label at least 24 hours prior to anticipated frost conditions will afford control of ice nucleating bacteria (*Pseudomonas syringae*, *Erwinia herbicola*, and *Pseudomonas fluorescens*) and may thereby provide some protection against light frost. The degree of frost protection will vary with weather conditions and other factors. Not recommended for those geographical areas where weather conditions favor severe frost.

ALFALFA			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Cercospora & Leptosphaerulina Leaf Spots	1.0 (0.5 lbs of metallic equivalent)	30 Days	Apply 10 to 14 days before each harvest or earlier if disease threatens. Apply with ground or aerial equipment. Spray injury may occur with sensitive varieties such as Lahontan.
RESTRICTIONS: Maximum single application rate is 1.0 lb/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 2.0 lb/A (1.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

ALMONDS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Dormant and Late Dormant to Pink Bud Season: Bacterial Blast (Pseudomonas) Coryneum Blight (Shot hole)	8.0 – 16.0 (4.0 - 8.0 lbs of metallic equivalent)	7	Use at dormant to early pink bud. For blast control in sprinkler irrigated orchards or where disease is severe, apply 2-4 sprays or as many as required at 1.0 – 3.0 lbs per acre at 2 week post-bloom intervals or just before sprinkling. Slight leaf injury may occur from post-bloom spray.
Bloom/Growing Season: Coryneum Blight Blossom Brown Rot	3.0 (1.5 lbs of metallic equivalent)	5	Use during the early bloom stage (popcorn). A second application in late dormant before foliage buds swell may be necessary when frequent rainfall occurs. To avoid plant injury, do not use after full bloom.
RESTRICTIONS Maximum single dormant application rate is 16.0 lbs/A (8.0 lbs. metallic copper equivalent) Maximum single bloom/growing application rate is 3.0 lbs/A (1.5 lbs. metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

APRICOTS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Dormant, Late Dormant, Up to Pink Bud: Anthracnose Dead Bud (Pseudomonas syringae) Coryneum Blight European Canker	12.0 – 16.0 (6.0 – 8.0 lbs of metallic equivalent)	Only one dormant application allowed per year	Apply before fall rains. Use the higher rates when conditions favor disease. Use on yellow varieties may cause discoloration. To avoid, pick before spraying.
Bloom, Growing Season: Coryneum Blight (Shot Hole) Blossom Brown Rot	2.0 – 3.0 (1.0 – 1.5 lbs of metallic equivalent)	5	Apply at popcorn to full bloom as a full cover spray. To avoid spray injury, do not apply after full bloom.
RESTRICTIONS Maximum single dormant application rate is 16.0 lbs/A (8.0 lbs. metallic copper equivalent) Maximum single bloom/growing application rate is 3.0 lbs/A (1.5 lbs. metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

AVOCADOS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose, Blotch, Scab	4.0 – 6.3 (2.0 – 3.15 lbs of metallic equivalent)	14	Apply when bloom buds begin to swell. Continue application at 14 – 28 day intervals for 5 to 6 applications. Use higher rate when conditions favor disease.
RESTRICTIONS Maximum single application rate is 6.3 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 37.8 lbs/A (18.9 lbs metallic copper equivalent) Do not exceed 6 applications per year at the maximum single application rate.			

BRAMBLES (Aurora, Blackberry, Boysen, Cascades, Chehalems, Dewberry, Logan, Marion, Raspberry, Santiam, & Thornless Evergreens)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose, Leaf & Cane Spot, Purple Blotch, Yellow Rust	4.0 (2.0 lbs of metallic equivalent)	7	Make fall spray application after harvest. Apply delayed dormant spray after pruning/training in spring.
	2.0 (1.0 lbs of metallic equivalent)	7	Apply when leaf buds begin to open and repeat when flower buds show white. NOTE: Crop injury may occur if applied to foliage under hot or moist environmental conditions. Discontinue applications if injury noted.
RESTRICTIONS Maximum single application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 20.0 lbs/A (10.0 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

BLUEBERRIES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Bacterial Canker	1.0 – 4.2 (0.5 – 2.1 lbs of metallic equivalent)	7	Make first application before the fall rains, preferably the first week in October and a second application 4 weeks later. Use higher rate when conditions favor disease.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 16.8 lbs/A (8.4 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

CACAO			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Black Pod	2.0 – 4.5 (1.0 – 2.25 lbs of metallic equivalent)	14	Begin applications at the start of the rainy season and continue while infection conditions persist. Sprays should be made as often as 14 - 21 days in high rainfall areas at varying rates per acre depending on disease severity. For drier areas where 2 to 4 applications are recommended during critical infection periods and at long intervals, use 2 – 4 lbs per acre, according to disease incidence and planting density.
RESTRICTIONS Maximum single application rate is 4.5 lbs/A (2.25 lbs metallic copper equivalent) Maximum annual application rate is 31.5 lbs/A (15.75 lbs metallic copper equivalent) Do not exceed 7 applications per year at the maximum single application rate.			

CARAMBOLA			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	4.2 (2.1 lbs of metallic equivalent)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 21.0 lbs/A (10.5 lbs metallic copper equivalent) Do not exceed 5 applications per year at the maximum single application rate.			

CARROTS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Carrot Blight (Cercospora)	2.0 (1.0 lbs of metallic equivalent)	7	Begin application when disease first threatens and repeat at 7 to 14 day intervals as needed depending on disease severity.
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 10.0 lbs/A (5.0 lbs metallic copper equivalent) Do not exceed 5 applications per year at the maximum single application rate.			

CELERY & CELERIAC			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Early, Late & Bacterial Blights	2.0 (1.0 lbs of metallic equivalent)	7	Apply as soon as plants are first established in the field, then every 7 days or longer depending on severity and weather.
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 10.0 lbs/A (5.0 lbs metallic copper equivalent) Do not exceed 5 applications per year at the maximum single application rate.			

CEREAL GRAINS (Barley, Millet, Oat, Rye, Sorghum, wheat)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Septoria Leaf Blotch Helminthosporium Spot Blotch	1.0 (0.5 lbs of metallic equivalent)	10	Make first application at early heading and follow with second application 10 days later.
RESTRICTIONS Maximum single application rate is 1.0 lb/A (0.50 lbs metallic copper equivalent) Maximum annual application rate is 2.0 lbs/A (1.0 lbs metallic copper equivalent) Do not exceed 2 applications per year at the maximum single application rate.			

CHERRY			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Dormant, Late Dormant, Up to Pink Bud: Anthracnose Dead Bud (Pseudomonas syringae) Coryneum Blight European Canker	8.0 - 16.0 (4.0 – 8.0 lbs of metallic equivalent)	7	In orchards where the disease is severe a spray should also be applied shortly after harvest.
Bloom & Growing Season: Brown Rot Blossom	2.0 – 3.0 (1.0 – 1.5 lbs of metallic equivalent)	5	Apply at popcorn and full bloom.
RESTRICTIONS Maximum single dormant season application rate is 16.0 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 3.0 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 36.0/A (18.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

CHIVES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Downy Mildew	1.0 (0.5 lbs of metallic equivalent)	7	Begin applications when plants are established in the field. Repeat applications every 7-10 days as dictated by disease conditions.
RESTRICTIONS Maximum single application rate is 1.0 lb/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 5.0 lbs/A (2.5 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

CITRUS (Grapefruit, Kumquat, Lemon, Orange, Pummelo, Tangelo, Tangerine & Lime)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Melanose, Scab, Pink Pitting, Greasy Spot,	3.0 – 6.3 (1.5 – 3.15 lbs of metallic equivalent)	7	Apply as pre-bloom and post-bloom sprays. Use higher rates when conditions favor disease.
Brown Rot, Septoria Spot	4.0 – 6.3 (2.0 – 3.15 lbs of metallic equivalent)	7	Apply beginning in the fall and continuing as needed. For Brown Rot, apply to skirts of trees to a height of at least 4 feet. Apply also to bare ground one foot beyond skirt. Use higher rates when conditions favor disease. NOTE: In California, in areas subject to copper injury, add 1/4 lb. of high quality lime per lb of BLUE SHIELD DF.
Citrus Canker (SUPPRESSION ONLY)	6.3 (3.15 lbs of metallic equivalent)	7	Spraying flushes 7-14 days after shoots begin to grow. Young fruit may need additional application. Number and timing of applications will depend on disease pressure. Under heavy disease pressure, each flush of new growth should be sprayed.
Phytophthora Foot Rot	6.3 (3.15 lbs of metallic equivalent) (See Application Instructions)	7	Mix 1.0 lb with one gallon of water and paint trunks of trees from the soil surface to the lowest scaffold limbs. Do not exceed 6.3 lbs of product per acre. If maximum single application rate is met before application to all trees within the acre, observe the 7 day interval before treating additional trees. Trunk applications are included in the annual maximum application rate. Apply in May before summer rains and/or in the fall before wrapping trees for freeze protection. This treatment serves as protection for up to one year, but does not cure existing infections.
Field Nursery Grown To control melanose, scab, pink pitting, greasy spot, brown rot and for citrus canker (suppression).	4.0 – 6.3 (2.0 – 3.15 lbs of metallic equivalent)	7	Apply 2.0 pounds of Blue Shield DF per 100 gallons of water.
RESTRICTIONS Maximum single application rate is 6.3 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 25.2 lbs/A (12.6 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

COFFEE			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Coffee Berry Disease (Collectotrichum coffeanum)	4.2 (2.1 lbs of metallic equivalent)	14	Apply after flowering and before the start of long rains and then at 14-28 day intervals until picking.
Bacterial Blight (Pseudomonas syringae)		14	Begin spray program before the start of long rains and continue until picking. The critical time of spraying to control disease is just before, during, and after flowering(s), especially when these times coincide with wet weather.
Iron Spot (Cercospora coffeicola) & Pink Disease (Corticium salmonicolor)	2.0 (1.0 lbs of metallic equivalent)	14	Begin treatment at start of wet season and continue at 14-28 day intervals for three applications.
Leaf Rust	3.0 – 4.2 (1.5 – 2.1 lbs of metallic equivalent)	14	Apply before the onset of rain and then at 14 - 21 day intervals while rains continue.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 25.2 lbs/A (12.6 lbs metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

CORN (FIELD, POP, SWEET)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Bacterial Stalk Rot Goss's Wilt (suppression only)*	1.0 – 2.1 (0.5 – 1.05 lbs of metallic equivalent)	7	Begin treatment when disease first appears and repeat every 7 to 10 days as needed. Use the higher rates and shorter spray intervals when conditions favor disease.
RESTRICTIONS Maximum single application rate is 2.1 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 8.4 lbs/A (4.2 lb metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

*Not Registered for Use By California

CRANBERRY			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Fruit Rot	4.2 (2.1 lbs of metallic equivalent)	7	One or two additional applications made at 7 to 14 day intervals may be required, depending on disease pressure.
Rose Bloom			Apply three sprays on 10 - 14 day schedule as soon as symptoms are observed.
Bacterial Stem Canker			Apply postharvest and again in spring before bud burst. One or two additional applications at 10 to 14 day intervals may be required depending upon disease severity.
Tip Blight (Monolinia), Stem and Leaf Blight, Red Leaf Spot			Apply delayed dormant spray in the Spring. Repeat at 10 - 14 day intervals as needed through pre-bloom.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 12.6 lbs/A (6.3 lb metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

CRUCIFERS (Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Chinese cabbage, Collard Greens, Kale, Kohlrabi, Mustard Greens, & Turnip Greens)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Downy Mildew Black Rot (Xanthomonas) Black Leaf Spot (Alternaria)	1.0 (0.5 lbs of metallic equivalent)	7	Begin application after transplants are set in the field, or shortly after emergence of field seeded crops or when conditions favor disease development. (CAUTION: A slight reddening of older leaves may occur on broccoli, and a slight flecking of wrapper leaves may occur on cabbage.)
RESTRICTIONS Maximum single application rate is 1.0 lbs/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 5.0 lbs/A (2.5 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

CUCURBITS (Cantaloupes, Casaba, Chayote, Citron melon, Cucumber, Gourd, Honeydews, Muskmelons, Pumpkins, Squash, Watermelons & Waxgourd)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Alternaria Leaf Spot Angular Leaf Spot Anthracnose Downy Mildew Powdery Mildew Gummy Stem Blight Watermelon Bacterial Fruit Blotch (suppression)	1.5 – 2.0 (0.75 – 1.0 lbs of metallic equivalent)	5	Begin application when conditions are favorable for disease development. Repeat at 5-10 day intervals. Use higher rates when conditions favor disease. NOTE: Crop injury may occur from application at higher rates and shorter intervals. Discontinue use if injury occurs.
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lb metallic copper equivalent) Maximum annual application rate is 10.5 lbs/A (5.25 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

CURRANTS & GOOSEBERRY (Ribes)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose Leaf Spot	5.0 – 8.0 (2.5 – 4.0 lbs of metallic equivalent)	10	Make initial application after first leaves have expanded. Continue on a 10 - 14 day schedule during wet conditions in the Spring. Make an additional application after harvest.
RESTRICTIONS Maximum single application rate is 8.0 lbs/A (4.0 lbs metallic copper equivalent) Maximum annual application rate is 20.0 lbs/A (10.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

DILL			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Phoma Leaf Spot, Rhizoctonia Foliage Blight	1.5 (0.75 lbs of metallic equivalent)	7	Begin applications when plants are first established in the field and repeat at 7-10 day intervals depending upon disease severity and environmental conditions.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 7.5 lbs/A (3.75 lbs. metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

DOUGLAS FIR (Non-Forestry)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Rhabdocline needlecast	2.0 – 4.0 (1.0 – 2.0 lbs of metallic equivalent)	7	Begin applications at bud break and repeat at 7 – 28 day intervals. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 40.0 lbs/A (20.0 lbs metallic copper equivalent) Do not make more than 10 applications per year at the maximum single application rate.			

EGGPLANT			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Alternaria Blight Anthracnose Phomopsis	1.5 (0.75 lbs of metallic equivalent)	7	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals as needed depending on disease severity.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 15.0 lbs/A (7.5 lbs metallic copper equivalent) Do not make more than 10 applications per year at the maximum single application rate.			

FILBERTS (Permitted only in Washington & Oregon)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Bacterial Blight (Post Harvest application)	8.0 – 12.0 (4.0 – 6.0 lbs of metallic equivalent)	14	Apply as a post-harvest spray. In seasons of heavy rainfall, apply a second spray when three-quarters of leaves have dropped. Add 1 pint of superior-type oil per 100 gallons of water.
Eastern Filbert Blight			Apply as a dilute spray in adequate water for thorough coverage. Make initial application after harvest in October before heavy winter rains begin. The next application should be made in late February to early March followed by another application 1 month later. If desired, add 1 pint of a sticking agent or superior-type oil per 100 gallons of water.
RESTRICTIONS Maximum single application rate is 12.0 lbs/A (6.0 lbs metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 lbs metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

GINSENG			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Alternaria Leaf Stem Blight	2.1 (1.05 lbs of metallic equivalent)	7	<p>Use as a tank mix with the appropriate amount of a product containing the active ingredient iprodione in 100 gallons of water. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates are to be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Begin BLUE SHIELD DF "iprodione" applications as soon as plants have emerged in spring.</p> <p>Applications should be repeated every seven days until plants become dormant in fall.</p> <p>Apply fungicides at least eight hours before rain, giving the fungicides time to dry on the plants. Use of a spreader-sticker is advised.</p> <p>NOTE: Alternaria Leaf and Stem Blight is most severe in humid conditions such as those found in the dense canopies of two, three, and four year old ginseng. Complete and thorough spray is required for control.</p>
RESTRICTIONS Maximum single application rate is 2.1 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 10.5 lbs/A (5.25 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

GRAPES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Black Rot Powdery Mildew Downy Mildew Phomopsis	2.0 – 6.0 (1.0 - 3.0 lbs of metallic equivalent)	3	Begin applications at late dormant up to bud break with subsequent applications throughout the season depending upon disease severity. NOTE: Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara, and Rosettes. Either test for sensitivity or add 1 to 3 pounds of hydrated lime per pound of Blue Shield DF.
RESTRICTIONS Maximum single application rate is 6.0 lbs/A (3.0 lbs metallic copper equivalent) Maximum annual application rate is 40.0 lbs/A (20.0 lbs metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

GUAVA			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthrachnose Red Algae	2.45 (1.22 lbs of metallic equivalent)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 2.45 lbs/A (1.22 lbs metallic copper equivalent) Maximum annual application rate is 9.8 lbs/A (4.9 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

HOPS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Downy Mildew	1.0 (0.5 lbs of metallic equivalent)	10	Apply as a fungicide crown treatment (after pruning, but before training) as needed. After training, additional fungicide treatments are needed at 10 day intervals. Discontinue use 2 weeks before harvest.
RESTRICTIONS Maximum single application rate is 1.0 lb/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 5.0 lbs/A (2.5 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

KIWI			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Pseudomonas syringae Erwinia herbicola Pseudomonas fluorescens	4.2 (2.1 lbs of metallic equivalent)	30	Make applications on a monthly basis. A maximum of 3 applications may be made.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 12.6 lbs/A (6.3 lbs metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

LETTUCE, ENDIVE & ESCAROLE			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Downy Mildew	1.0 – 2.0 (0.5 – 1.0 lbs of metallic equivalent)	5	Begin treatment when disease first appears and repeat every 5 - 10 days as needed to suppress disease.
NOTE: Flecking and/or yellowing of leaves will occur under certain environmental conditions such as extended periods of moist weather, acid rains, or other conditions favoring reduced pH on leaf surfaces. Injury may be severe enough to reduce crop value. Increasing the volume of spray water may decrease phytotoxicity potential.			
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lb metallic copper equivalent) Maximum annual application rate is 16.0 lbs/A (8.0 lbs metallic copper equivalent) Do not make more than 8 applications per year at the maximum single application rate.			

LITCHI			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	2.4 (1.2 lbs of metallic equivalent)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 2.4 lbs/A (1.2 lbs metallic copper equivalent) Maximum annual application rate is 9.6 lbs/A (4.8 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

LIVE OAK (Non-Forestry)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Ball Moss	See comment *	A second application may be required after 12 months	* Mix 4 lbs of product per 100 gallons of water. Do not exceed the 4.0 lbs of product per acre limit Apply in spring after heavy rain, using 1.5 gallons of spray per foot of tree height.. Make sure to set tufts thoroughly. (NOTE: BLUE SHIELD DF may be injurious to some ornamentals grown under live oaks).
RESTRICTIONS Maximum single application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 40.0 lbs/A (20.0 lbs metallic copper equivalent) Do not make more than 1 applications per year at the maximum single application rate.			

MACADAMIA NUTS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	4.7 (2.35 lbs of metallic equivalent)	7	Initiate sprays at first sign of flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage
Blossom blight Raceme blight	2.0 – 4.0 (1.0 – 2.0 lbs of metallic equivalent)	7	Apply during peak raceme development and bloom period. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 4.7 lbs/A (2.35 lbs metallic copper equivalent) Maximum annual application rate is 18.8 lbs/A (9.40 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

MAMEY SAPOTE			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose Algal Leaf Spot	3.0 – 4.2 (1.5 – 2.1 lbs of metallic equivalent)	14	Apply when conditions favor disease development. Repeat on 14-30 day schedule as disease severity and environmental conditions dictate. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 16.8 lbs/A (8.4 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

MANGO			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	4.0 – 6.4 (2.0 –3.2 lbs of metallic equivalent)	7	Repeat on 7 - 30 day schedule as disease severity and environmental conditions dictate. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 6.4 lbs/A (3.2 lbs metallic copper equivalent) Maximum annual application rate is 96.0 lbs/A (48.0 lbs metallic copper equivalent) Do not make more than 14 applications per year at the maximum single application rate.			

OKRA			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose Bacterial Leaf Spot Leaf Spots Pod Spots Powdery Mildew	1.0 – 2.1 (0.5 – 1.05 lbs of metallic equivalent)	5	Begin treatment when disease first threatens and repeat every 5 to 10 days or as needed depending on disease severity. Use the higher rates and shorter spray intervals when conditions favor disease.
RESTRICTIONS Maximum single application rate is 2.1 lbs/A (1.05 lbs metallic copper equivalent) Maximum annual application rate is 10.5 lbs/A (5.25 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

OLIVES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Peacock Spot Olive Knot	5.0 – 12.0 (2.5 – 6.0 lbs of metallic equivalent)	30	Apply before winter rains fall. A second application in early spring should be made if disease is severe. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 12.0 lbs/A (6.0 lbs metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 lbs metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

ONION & GARLIC			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Purple Blotch Downy Mildew	2.0 (1.0 lbs of metallic equivalent)	7	Begin when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals as needed depending upon disease pressure. Can cause phytotoxicity to leaves.
Bacterial Blight	1.0 – 1.5 (0.5 – 0.75 lbs of metallic equivalent)		
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lb metallic copper equivalent) Maximum annual application rate is 12.0 lbs/A (6.0 lbs metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

PAPAYA			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	4.0 – 5.3 (2.0 – 2.63 lbs of metallic equivalent)	14	Begin application before disease is expected to appear. Repeat at 14 day intervals. Use the higher rates when conditions favor disease. The addition of a suitable spreader- sticker may be desirable especially during periods of heavy rains.
RESTRICTIONS Maximum single application rate is 5.3 lbs/A (2.63 lbs metallic copper equivalent) Maximum annual application rate is 42.4 lbs/A (21.2 lbs metallic copper equivalent) Do not make more than 8 applications per year at the maximum single application rate.			

PARSLEY			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Bacterial Blight (Pseudomonas sp.)	2.0 (1.0 lbs of metallic equivalent)	10	Begin applications when plants are first established in the field and repeat at 10 day intervals depending upon disease severity and environmental conditions.
RESTRICTIONS Maximum single application rate is 2.0 lbs/A (1.0 lbs metallic copper equivalent) Maximum annual application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the maximum single application rate.			

PASSION FRUIT			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	4.7 (2.35 lbs of metallic equivalent)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 4.7 lbs/A (2.35 lbs metallic copper equivalent) Maximum annual application rate is 18.8 lbs/A (9.40 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

PEACHES & NECTARINES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Dormant, Late Dormant, Up to Pink Bud: Bacterial Spot Leaf Curl Coryneum Blight (Shot Hole)	8.0 – 16.0 (4.0 – 8.0 lbs of metallic equivalent)	7	Apply at leaf fall as dormant application. Use the higher rate when rainfall is very heavy and disease pressure is high. May be used with an agricultural spray oil. Restrictions: Do not make more than 2 applications per year at the maximum single application rate.
Brown Rot Blossom Blight	8.0 – 12.0 (4.0 - 6.0 lbs of metallic equivalent)	7	Apply as a full cover spray at pink bud. (Application at this time also affords some control of Leaf Curl and Coryneum Blight). NOTE: Do not spray later than three weeks prior to harvest. Restrictions: Do not make more than 6 applications per year at the maximum single application rate.
Bloom & Growing Season: Bacterial Spot	1.0 – 3.0 (0.5 – 1.5 lbs of metallic equivalent)	5	Post-bloom application applied at first and second cover sprays. NOTE: do not spray 3 weeks prior to harvest. Spotting of leaves and some defoliation may occur from use in post-bloom cover sprays. Restrictions: Do not make more than 12 applications per year at the maximum single application rate.
RESTRICTIONS Maximum single dormant season application rate is 16.0 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 3.0 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 metallic copper equivalent)			

PEACHES & NECTARINES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Do not make more than 2 applications per year at the dormant maximum single application rate. Do not make more than 12 applications per year at the growing season maximum single application rate.			

PEANUTS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Cercospora Leaf Spot	1.5 (0.75 lbs of metallic equivalent)	7	Begin spraying 25-40 days after planting or when disease symptoms appear. Use sufficient water to get adequate coverage. Continue applications at 7 to 14 day intervals. Reduce spray interval to 7 days during humid weather.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 9.0 lbs/A (4.5 metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

PEAS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Powdery Mildew	1.5 (0.75 lbs of metallic equivalent)	7	Begin spray treatment when disease symptoms first appear. Repeat applications at weekly intervals.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 7.5 lbs/A (3.75 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

PECANS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Shuck and Kernel rot (Phytophthora cactorum) Zonate leaf spot (Cristulariella pyramidalis)	2.0 – 4.2 (1.0 – 2.1 lbs of metallic equivalent)	14	Apply in sufficient water for good coverage at 2-4 week intervals starting at kernel growth and continuing until shucks open. Use the higher rate and shorter intervals if frequent rainfall occurs.
Mosses Algae Lichen	See Application Instructions	Make only one application per year	Mix 2 lbs per 100 gallons spray plus spreader-sticker on a dilute spray basis and apply in dormant season before buds swell, thoroughly wetting limbs and mosses.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 12.6 lbs/A (6.3 lbs metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

PEPPERS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Bacterial Spot	1.5 (0.75 lbs of metallic equivalent)	3	Apply, when disease threatens, in sufficient water to provide adequate coverage. Use at 3 to 14 day intervals depending on disease severity.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 23.5 lbs/A (11.75 lbs metallic copper equivalent) Do not make more than 15 applications per year at the maximum single application rate.			

PISTACHIOS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Botrytis Blight, Botryosphaeria Panicle, Shoot Blight, Septoria Leaf Blight, Late Blight (Alternaria)	3.0 – 4.2 (1.5 – 2.1 lbs of metallic equivalent)	14	Make initial application at bud swell and repeat on a 14 - 28 day schedule. Use higher rates when conditions favor disease.
RESTRICTIONS Maximum single application rate is 4.2 lbs/A (2.1 lbs metallic copper equivalent) Maximum annual application rate is 16.8 lbs/A (8.4 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

PLUMS & PRUNES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Dormant, Late Dormant, Up to Pink Bud: Coryneum blight (Shot hole)	8.0 – 16.0 (4.0 – 8.0 lbs of metallic equivalent)	7	Apply as a dormant spray. Use the higher rate when rainfall is heavy and/or disease pressure is high. Restrictions: Do not make more than 2 applications per year at the maximum single application rate.
Bloom & Growing Season: Brown rot blossom blight, Black Knot	3.0 (1.5 lbs of metallic equivalent)	5	Apply full cover application at pink, red or early white bud stage. Restrictions: Do not make more than 12 applications per year at the maximum single application rate.
RESTRICTIONS Maximum single dormant season application rate is 16.0 lbs/A (8.0 lbs metallic copper equivalent) Maximum single growing season application rate is 3.0 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 36.0 lbs/A (18.0 lbs metallic copper equivalent) Do not make more than 2 applications per year at the dormant maximum single application rate. Do not make more than 12 applications per year at the growing season maximum single application rate.			

POME FRUIT (Apple, Loquat, Pear, Quince)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Fall & Late Dormant: Anthracnose Blossom & Shoot Blast (Pseudomonas) European Canker Shoot Blast	12.0 (6.0 lbs of metallic equivalent)	Only one dormant application allowed per year	Apply before fall rains. Use on yellow varieties may cause discoloration. To avoid, pick before spraying. Restrictions: Do not make more than 2 applications per year at the maximum single application rate.
Between silver-tip and green-tip: Apple Scab, Fireblight	4.0 – 12.0 (2.0 – 6.0 lbs of metallic equivalent)	Only one application allowed per year	ATTENTION: Phytotoxicity may occur from late application. (Discontinue use when green-tip is 1/2 inch.) Restrictions: Do not make more than 2 applications per year at the maximum single application rate.
Bloom & Growing Season: Fireblight	1.0 – 3.0 (0.5 – 1.5 lbs of metallic equivalent)	5	Extended spray schedule where fruit finish is not a concern. Continued applications may be made at 5 – 7 day intervals. NOTE: Crop injury may occur from extended spray schedule. Not intended for fresh market apples due to possible russetting. The addition of 1 – 3 lbs of lime per pound of Blue Shield DF may reduce injury. Restrictions: Do not make more than 10 applications per year at the maximum single application rate.
Crown or Collar Rot (Phytophthora cactorum)	1.0 (0.5 lbs of metallic equivalent)	5	Apply either in early spring or in fall after harvest each year. Do not use if soil pH is below 5.5 or copper toxicity may result. Mix 1 lb product in 25 gallons of water. Apply 1-4 gallons of suspension as a drench on the lower trunk area of each tree. Do not exceed the maximum single application rate of 1.0 pounds of product per acre for growing season use. Follow the 5 day retreatment interval for any untreated trees. Restrictions: Do not make more than 32 applications per year at

			the maximum single application rate.
RESTRICTIONS Maximum single dormant season application rate is 12.0 lbs/A (6.0 lbs. metallic copper equivalent) Maximum single silver-tip to green-tip season application rate is 12.0 lbs/A (6.0 lbs. metallic copper equivalent) Maximum single growing season application rate is 1.0 - 3.0 lbs/A (0.5 - 1.5 lbs. metallic copper equivalent) Maximum annual application rate is 32.0 lbs/A (16 lbs. metallic copper equivalent)			

POTATOES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Early & Late Blight	1.0 – 5.0 (0.5 – 2.5 lbs of metallic equivalent)	5	Apply 1.0 - 1.5 pounds product at 5 to 10 day intervals starting when plants are 2 - 6 inches high until 2 weeks before harvest in locations where disease is light and up to 3 to 5 pounds per acre where disease is more severe. Under conditions of severe disease, control with Blue Shield DF will be improved by tank mixing with other compatible fungicides registered for use on potatoes. Read and follow all label instructions of tank mix partners.
RESTRICTIONS Maximum single application rate is 5.0 lbs/A (2.5 lbs metallic copper equivalent) Maximum annual application rate is 50.0 lbs/A (25.0 lbs metallic copper equivalent) Do not make more than 10 applications per year at the maximum single application rate.			

SPINACH			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthrachnose, Blue Mold, Cercospora Leafspot, Downy Mildew, White Rust,	1.5 (0.75 lbs of metallic equivalent)	7	Begin applications when disease first appears or conditions favor disease development. Repeat at 7 to 10 day intervals as needed. NOTE: Flecking may occur on spinach leaves.
RESTRICTIONS Maximum single application rate is 1.5 lbs/A (0.75 lbs metallic copper equivalent) Maximum annual application rate is 7.5 lbs/A (3.75 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

STRAWBERRIES			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Downy Mildew Leaf Spot Leaf Blight	1.0 - 3.0 (0.5 – 1.5 lbs of metallic equivalent)	7	Begin application when plants are established and continue on a weekly schedule throughout season. Apply in at least 20 gallons of water. Use the higher rates when conditions favor disease. NOTE: Discontinue applications if signs of phytotoxicity appear.
RESTRICTIONS Maximum single application rate is 3.0 lbs/A (1.5 lbs metallic copper equivalent) Maximum annual application rate is 12.0 lbs/A (6.0 lbs metallic copper equivalent) Maximum number of applications per year is 4 times at the highest use rate (3.0 lbs / A)			

ATEMOYA, SUGAR APPLE (Annona)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthraco nose	6.3 (3.15 lbs of metallic equivalent)	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage.
RESTRICTIONS Maximum single application rate is 6.3 lbs/A (3.15 lbs metallic copper equivalent) Maximum annual application rate is 25.2 lbs/A (12.6 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate.			

SUGAR BEETS & TABLE BEETS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Cercospora Leaf Spot	2.45 (1.22 lbs of metallic equivalent)	10	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals as needed.
RESTRICTIONS Maximum single application rate is 2.45 lbs/A (1.22 lbs metallic copper equivalent) Maximum annual application rate is 15.0 lbs/A (7.5 lbs metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

SYCAMORE (Non-Forestry)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Anthracnose	2.0 – 4.0 (1.0 – 2.0 lbs of metallic equivalent)	7	Make two applications as a full cover spray. Use a minimum of 100 gallons water per acre. Make first application at bud crack and second application 7 to 14 days later at 10% leaf expansion.
RESTRICTIONS Maximum single application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Maximum annual application rate is 40.0 lbs/A (20.0 lbs metallic copper equivalent) Do not make more than 10 applications per year at the maximum single application rate.			

TOMATOES (Processing Market)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Early Blight Bacterial Speck Bacterial Spot Anthracnose Gray Leaf Mold Gray Leaf Spot Septoria Leaf Spot Late Blight	1.0 (0.5 lbs of metallic equivalent)	3	When disease threatens, apply at 7 - 10 day intervals, more frequently when disease is severe.
RESTRICTIONS Maximum single application rate is 1.0 lb/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 34.5 lbs/A (17.25 lbs metallic copper equivalent) Do not make more than 34 applications per year at the maximum single application rate.			

TOMATOES (Fresh Market)			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Early Blight Bacterial Speck Bacterial Spot Anthracnose Gray Leaf Mold Gray Leaf Spot Septoria Leaf Spot Late Blight	3.2 (1.6 lbs of metallic equivalent)	3	When disease threatens, apply at 7 - 10 day intervals, more frequently when disease is severe.
RESTRICTIONS Maximum single application rate is 3.2 lb/A (1.6 lbs metallic copper equivalent) Maximum annual application rate is 16.0 lbs/A (8.0 lbs metallic copper equivalent) Do not make more than 5 applications per year at the maximum single application rate.			

TURFGRASS (Sod Farms and other non-residential sites only)			
DISEASE	APPLICATION RATE lbs of product/acre	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Algae	2.0 – 6.0 (1.0 – 3.0 lbs of metallic equivalent)	10	May be used as a maintenance spray as needed. May be used alone or in combination with fungicides such as dithiocarbamates. Use a minimum of 100 gallons of spray mix per acre. Phytotoxicity may depend on varietal differences. Apply the recommended rate to a small area and observe 7 - 10 days for phytotoxicity. If phytotoxicity occurs, discontinue use.
RESTRICTIONS Maximum single application rate is 6.0 lbs/A (3.0 lbs metallic copper equivalent) Maximum annual application rate is 18.0 lbs/A (9.0 lbs metallic copper equivalent) Do not make more than 3 applications per year at the maximum single application rate.			

WALNUTS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Walnut Blight	3.0 – 8.0 (1.5 – 4.0 lbs of metallic equivalent)	7	Apply first spray at early pre-bloom when catkins are partially expanded. Make three additional applications during bloom and early nutlet stages at 7 to 10 day intervals. Additional applications may be necessary when frequent rainfall occurs. Thorough coverage of catkins, leaves and nutlets is essential for effective control. When applied as a dilute spray, 1 pint of summer oil emulsion may be added per 100 gallons of spray. NOTE: Adequate control may not be obtained when copper tolerant species of Xanthomonas bacteria are present.
RESTRICTIONS Maximum single application rate is 8.0 lbs/A (4.0 lbs metallic copper equivalent) Maximum annual application rate is 50.4 lbs/A (25.2 lbs metallic copper equivalent) Do not make more than 6 applications per year at the maximum single application rate.			

WATERCRESS			
DISEASE	APPLICATION RATE (lbs of product/Acre)	MINIMUM DAYS RETREATMENT INTERVAL	APPLICATION INSTRUCTIONS
Cercospora Leaf Spot	1.0 (0.5 lbs of metallic equivalent)	7	<p>For applications made to watercress, production fields must be drained of water at least 24 hours prior to each application and water must not be reapplied to the field for a minimum of 24 hours following each application. Copper must not be applied to watercress during the aquatic production phase.</p> <p>Begin application when plants are first established in the field, repeating at 7-14 day intervals depending on disease severity and environmental conditions.</p> <p>Do not exceed 4 applications per year.</p> <p>Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.</p>
<p>RESTRICTIONS Maximum single application rate is 1.0 lb/A (0.5 lbs metallic copper equivalent) Maximum annual application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent) Do not make more than 4 applications per year at the maximum single application rate. Production fields must be drained of water at least 24 hours prior to each application and water must not be reapplied to the field for a minimum of 24 hours following each application.</p> <p>Copper must not be applied to watercress during the aquatic production phase.</p>			

GREENHOUSE AND SHADEHOUSE CROPS

NOTICE TO USER: Blue Shield DF may be used in greenhouses and shadehouses to control diseases on some crops which appear on this label. The grower should bear in mind that the sensitivity of crops grown in greenhouses and shadehouses differ greatly from crops grown under field conditions. Neither the manufacturer nor seller has determined whether or not Blue Shield DF can be used safely prior to commercial use. In a small area, apply the labelled rates to the plant in question, i.e. foliage, fruit, etc. and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply Blue Shield DF according to specific rates given for these crops in pounds per acre or pounds per 100 gallons.

Blue Shield DF should be applied in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at 7 to 14 day intervals as needed; use shorter interval during periods when severe disease conditions persist.

The Re-entry Interval (REI) for Greenhouse use is 24 hours. Refer to the Agricultural Use Requirements section for notification and PPE requirements for greenhouse use.

CROP	DISEASE	RATE Ounces/ 1,000 sq.ft.	APPLICATION INSTRUCTIONS
Eggplant	Alternaria Blight, Anthracnose, Phomopsis	0.2 to 0.5 (0.004 - 0.010 lbs metallic copper equivalent)	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals as needed depending on disease pressure.
Pepper	Bacterial Spot	0.2 to 0.5 (0.004 - 0.010 lbs metallic copper equivalent)	Begin applications when conditions first favor disease development and repeat at 5 to 10 day intervals as needed depending on disease severity. Use higher rates for severe disease.
Cucumber	Angular Leaf Spot, Downy Mildew	0.4 to 0.77 (0.008 - 0.016 lbs metallic copper equivalent)	Apply weekly when plants begin to vine.
Tomato	Early Blight, Late Blight	0.2 to 0.4 (0.004 - 0.008 lbs metallic copper equivalent)	Begin when disease first threatens and repeat at 3 to 10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.
	Bacterial Speck	0.2 to 0.4 (0.004 - 0.008 lbs metallic copper equivalent)	Begin applications when disease first threatens and repeat at 3 to 10 day intervals or as needed depending on disease severity.
	Bacterial Spot, Anthracnose, Gray Leaf Mold, Septoria Leaf Spot	0.2 to 0.4 (0.004 - 0.008 lbs metallic copper equivalent)	Begin when disease first threatens and repeat at 3 to 10 day intervals or as needed depending on disease severity. Use higher rate for severe disease.

ORNAMENTALS

Notice to User: Plant sensitivities to BLUE SHIELD DF have been found to be acceptable in specific genera and species listed on this label; however, phytotoxicity may occur. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for sensitivity to BLUE SHIELD DF. Neither the manufacturer nor seller has determined whether or not BLUE SHIELD DF can be safely used on ornamental or nursery plants not listed on this label. The user should determine if BLUE SHIELD DF can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e., bedding plants, foliage, etc., and observe for 7-10 days for symptoms of phytotoxicity prior to commercial use.

Use BLUE SHIELD DF on container, bench, or bed-grown ornamentals in greenhouses or outdoor nurseries, for professional use on ornamentals grown for indoor and outdoor landscaping, and for control of bacterial and fungal diseases of foliage, flowers and stems.

Apply as a thorough coverage spray using 1.0 lbs product per 100 gallons of water. Begin application at first sign of disease and repeat at 7 to 14 day intervals as needed; use shorter interval during periods of frequent rains or when

severe disease conditions persist.

BLUE SHIELD DF may be used as a maintenance spray alone or in combination with other fungicides such as the dithiocarbamates.

Ornamentals Restrictions:

- Minimum retreatment interval is 7 days.
- Maximum single application rate is 4.0 lbs/A (2.0 lbs metallic copper equivalent)
- Maximum annual application rate is 40.0 lbs/A (20 lbs metallic copper equivalent)
- Maximum annual rate for Easter Lilies is 75 lbs. metallic copper. If used at this rate for Easter Lilies, do not add any additional copper pesticides to this land for 36 months.
- Maximum annual rate for Ornamentals (except Easter Lilies) is 20 lbs. metallic copper
- Do not make more than 37 applications per year at the maximum single application rate for Easter Lilies
- Do not make more than 10 applications per year at the maximum single application rate for Ornamentals (except Easter Lilies).

ORNAMENTAL/DISEASES:

Althea (Rose of Sharon)/Bacterial Leaf Spot
Aralia/Xanthomonas & Cercospora Leaf Spots, Alternaria
Arborvitae/Alternaria Twig Blight, Cercospora Leaf Blight
Azalea*/Cercospora Leaf Spot, Botrytis Blight, Phytophthora Dieback & Powdery Mildew
Begonia/Xanthomonas Leaf Spot, Anthracnose
Bougainvillea/Anthracnose, Bacterial Leaf Spot
Bulbs (Easter Lily**, Tulip, Gladiolus)/Anthracnose, Botrytis Blight
Camellia/Anthracnose, Bacterial Leaf Spot
Camphor Tree/Pseudomonas Leaf Spot
Canna/Pseudomonas Leaf Spot
Carnation*/Alternaria Blight, Pseudomonas Leaf Spot, & Botrytis Blight
Chinese Tallow Tree/Bacterial Leaf Spot (Xanthomonas sp., Pseudomonas sp.)
Chrysanthemum*/Septoria Leaf Spot & Botrytis Blight
Cotoneaster/Botrytis Blight
Dahlia/Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
Date Palm/Pestalotia Leaf Spot
Dianthus/Bacterial Spot, Bacterial Soft Rot
Dogwood/Anthracnose
Dusty Miller/Bacterial Leaf Spot (Pseudomonas cichorii)
Echinacea/Bacterial Leaf Spot (Pseudomonas cichorii)
Elm "Drake"/Xanthomonas Leaf Spot
Euonymus/Botrytis Blight & Anthracnose
European Fan Palm/Pestalotia Leaf Spot
Gardenia/Alternaria Leaf Spot, Botrytis Bud Rot, Cercospora Leaf Spot
Geranium/Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
Gladiolus/Alternaria Leaf Spot, Botrytis Gray Mold, Bacterial Leaf Blight
Golden Rain Tree/Bacterial Leaf Spot
Hibiscus/Bacterial Leaf Spot
Holly Fern/Pseudomonas Leaf Spot
Impatiens/Bacterial Leaf Spot
India hawthorn (greenhouse)/Entomosporium Leaf Spot
Ivy*/Xanthomonas Leaf Spot
Ixora/Xanthomonas Leaf Spot
Juniper (Eastern Red Cedar)/Anthracnose
Lantana/Bacterial Leaf Spot
Lilac/Cercospora Leaf Spot
Loblolly Bay/Anthracnose
Loquat/Entomosporium maculata, Colletotrichum sp.
Magnolia (Southern)/Algal Leaf Spot, Anthracnose, Bacterial Leaf Spot
Mandevillas/Anthracnose

Marigold/Alternaria Leaf Spot, Botrytis Leaf and Flower Rot,
 Cercospora Leaf Spot
 Mulberry, Weeping/Bacterial Leaf Spot
 Oak, Laurel/Algal Leaf Spot (Cephaleuros virescens)
 Oleander/Bacterial Leaf Spot, Fungal Leaf Spot
 Pachysandra/Volutella Leaf Blight
 Pansy/Downy Mildew
 Pear (Flowering)/Fireblight, Leaf Spot
 Pentas (Egyptian Star)/Bacterial Leaf Spot (Xanthomonas sp.)
 Peony/Botrytis Blight
 Periwinkle/Phomopsis Stem Blight
 Philodendron/Bacterial Leaf Spot
 Phlox/Alternaria Leaf Spot
 Photinia (Red Tip)/Anthracnose, Entomosporium Leaf Spot
 Pistachio/Anthracnose
 Plantain Lily/Bacterial Leaf Spot
 Powder Puff Plant/Bacterial Leaf Spot
 Pyracantha/Fireblight & Scab
 Queen Palm/Exosporium Leaf Spot, Phytophthora Bud Rot
 Rhododendron/Alternaria Flower Spot
 Rose*/Powdery Mildew, Black Spot
 Verbena/Xanthomonas Leaf Spot
 Viburnum/Anthracnose
 Washingtonia Palm/Pestalotia Leaf Spot
 Weeping Willow/Anthracnose
 Yucca (Adams Needle)/Cercospora & Septoria Leaf Spot

*Discoloration of foliage and/or blooms have been noted on some varieties. To prevent residues on commercial plants, do not spray just before selling season.

**For Easter Lily, use 2.0 – 5.0 lbs product per 100 gallons.

Restrictions (Easter Lily):

- Minimum retreatment interval is 7 days.
- Maximum single application rate is 5.0 lbs/A (2.5 lbs metallic copper equivalent)
- Maximum annual application rate is 150 lbs/A (75 lbs metallic copper equivalent)
- Do not apply any additional copper pesticide to this land for 36 months.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, secure, dry area in original container.

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

NONREFILLABLE CONTAINERS 5 GALLONS OR LESS:

CONTAINER HANDLING:

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 and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

NONREFILLABLE CONTAINERS 5 GALLONS OR LARGER:

CONTAINER HANDLING:

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 $\frac{1}{4}$ full with water. Recap 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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{LABEL HISTORY
(Not included in final printed label)

File Name	Version Mark	Comment
045002-4.20211129.DRAFT	112921	(e) Label Revisions (PID)
045002-4.20220111 DRAFT	011122	(e) Label Revisions (PID)
045002-00004.20230607.DRAFT	060723	(e) Label Revisions (PID)
045002-00004.20230802.MASTER	AD080223	EPA SAL (PID)
045002-00004.20240813.DRAFT	081324	Addition of OMRI logo and Updated Language
045002-00004.20240905.DRAFT	090524	(e) Label Revisions
045002-00004.20240926.DRAFT	092624	(e) Label Revisions
045002-00004.20241016.DRAFT	101624	(e) Label Revisions
045002-00004.20241017.DRAFT	101724	(e) Label Revisions

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