



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

MAR 16 2010

Dr. John Abbott  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419

Subject: Abound® Flowable Fungicide  
EPA Registration Number 100-1098  
Decision D415345: Your master label amendment received  
by e-mail on January 5, 2010, superseding amended master  
labels received on June 12, July 14, and August 26, 2009

Dear Dr. Abbott,

The amended master label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable, provided that you comply with the following conditions.

1. Make the following changes to the label.

a. The "Remarks" section of the specific directions for use for Bananas and Plantains on page 18 begins with an odd graphics or special character. Delete it.

b. In the "Remarks" section of the specific directions for use for Clover (and stands containing Clover) on page 30 the name used for this product is "Quadris" in all four cases. Change each of these to "Abound", the brand name that is used for this product throughout the rest of the label.

c. Change the first of the "Specific Use Directions:" in the specific directions for use for Cotton on page 32 from "Do not apply more than 27 oz./crop/season as a foliar spray." to "Do not apply more than 27 fl. oz. of product/crop/season as a foliar spray."

d. In the "Target Diseases" section in the specific directions for use for Cranberry on page 33 change the genus name for Cottonball from "Monilia" to "Monilinia".

e. At the end of the third sentence in the "Remarks" section of the specific directions for use for Tobacco on page 53 change "...prior to a Abound application." to "...prior to an Abound application."

f. In the "Specific Use Restrictions:" subsection of the "Grasses (grown for seed)" specific use directions on page 28, change "Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products." to "Do not apply more than 0.8 lbs. a.i./A per season of azoxystrobin-containing products." This is the maximum seasonal rate on which the tolerances for this site are based.

g. In the "Specific Use Restrictions:" subsection of the "Grasses (grown for seed)" specific use directions on page 28, add the restrictive statement "Do not feed treated straw, seed, or screenings to livestock." This restriction has been on azoxystrobin labels for this site since the use was permitted; the reason for its deletion is unknown to the Agency.

2. Submit one copy of your final printed labeling before you release the product for shipment.

If you have any questions about this letter, please contact John Bazuin at (703)305-7381.

Sincerely yours,

*Shajid Former*  
Shaja Brothers  
Product Manager 20  
Fungicide Branch  
Registration Division (7505P)

Attachment: Master label stamped "ACCEPTED with COMMENTS"

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**GROUP 11 FUNGICIDES**

**Abound®  
Flowable Fungicide**

Broad spectrum fungicide for control of plant diseases

For Control of Certain Post Harvest Diseases in Banana and Citrus

Active Ingredient:

Azoxystrobin: methyl (E)-2-[2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl]-3-methoxyacrylate* .....	22.9%
Other Ingredients:	77.1%
<hr/> Total:	<hr/> 100.0%

Contains 2.08 lbs. of active ingredient per gallon  
\*IUPAC

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

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

See additional precautionary statements and directions for use inside booklet.

Reformulation is prohibited. See individual container labels for repackaging limitations.

EPA Reg. No. 100-1098

EPA Est.

Product of  
Formulated in

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Net Contents

**ACCEPTED  
with COMMENTS  
in EPA Letter Dated  
MAR 16 2010**

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

*100-1098*

<b>FIRST AID</b>	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
<b>HOTLINE NUMBER</b>	
For 24 Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

HARMFUL IF ABSORBED THROUGH SKIN. Avoid contact with eyes, skin, or clothing. Wear long-sleeved shirt and long pants, socks and shoes and chemical resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber. Wash thoroughly with soap and water after handling.

**Personal Protective Equipment (PPE)**

Some materials that are chemically resistant to this product are listed below. If you want more options follow the instructions for Category A on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber
- Shoes plus socks

**User Safety Requirements**

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

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

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

**User Safety Recommendations**

**Users should:**

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

**Environmental Hazards**

The active ingredient, azoxystrobin, in this product can be persistent for several months or longer. Azoxystrobin has degradation products which have properties similar to chemicals which are known to leach through soil to ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

This pesticide is toxic to freshwater and estuarine/marine fish and aquatic invertebrates. Do not apply directly to water except as specified on this label. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Notify State and/or Federal authorities and Syngenta immediately if you observe any adverse environmental effects due to use of this product.

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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, INC. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

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

Use of Abound through airblast application equipment on grapes is prohibited in the following townships and boroughs of Erie County, Pennsylvania:

North East, Harborcreek, Lawrence Park, Erie, Presque Isle, MillCreek, Fairview, Girard and Springfield.

This prohibition is intended to help eliminate phytotoxicity problems with apples observed in this geographic location.

**FAILURE TO FOLLOW THE USE DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN PLANT INJURY OR POOR DISEASE CONTROL.**

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

### AGRICULTURAL USE REQUIREMENTS

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

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.**

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

- Coveralls
- Chemical resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber
- Shoes plus socks

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**GENERAL USE PRECAUTIONS**

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Do not plant the following crops for a period of 12 months (unless an azoxystrobin product is registered for use on that crop): buckwheat, millet, oats and rye. A plantback interval (PBI) of 36 days is required for Leafy Vegetables (except brassica) group; Brassica, Leafy Greens subgroup; Vegetables, Root subgroup; Vegetable (Tuberous and Corm) subgroup; and Vegetables, Leaves of Root and Tuber group. Azoxystrobin is registered for use on all other rotated crops and all other crops may be planted immediately after the last treatment.

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**GENERAL INFORMATION**

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Abound is a broad spectrum, preventative fungicide with systemic and curative properties recommended for the control of many important plant diseases. Abound may also improve the yield and/or quality of the crop even under limited disease pressure due to plant performance characteristics. These additional benefits are due to positive effects on plant physiology. The effects may vary according to other factors such as the crop, crop hybrid, or environment. Abound may be applied as a foliar spray in alternating spray programs or in tank mixes with other registered crop protection products. All applications must be made according to the use directions that follow.

**Restrictions**

Do not use for disease control in food crops or tobacco grown in greenhouses.

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**GENERAL USE INSTRUCTIONS**

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**Application:** Thorough coverage is necessary to provide good disease control. Make no more spray solution than is needed for application. Avoid spray overlap, as crop injury may occur.

**Adjuvants:** When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification is recommended.

**Efficacy:** Under certain conditions conducive to extended infection periods, use another registered fungicide for additional applications if maximum amount of Abound has been used. If resistant isolates to Group 11 fungicides are present, efficacy can be reduced for certain diseases. The higher rates in the rate range and/or shorter spray intervals may be required under conditions of heavy infection pressure, with highly susceptible varieties, or when environmental conditions are conducive to disease.



### INTEGRATED PEST (DISEASE) MANAGEMENT

Abound should be integrated into an overall disease and pest management strategy whenever the use of a fungicide is required. Cultural practices known to reduce disease development should be followed. This should include selection of varieties with disease tolerance, removal of plant debris in which inoculum overwinters, and proper timing and placement of irrigation. Consult your local agricultural authorities for additional IPM strategies established for your area. Abound may be used in State Agricultural Extension advisory (disease forecasting) programs which recommend application timing based on environmental factors favorable for disease development.

**Crop Tolerance:** Plant tolerance has been found to be acceptable for all crops on the label, however, not all possible tank-mix combinations have been tested under all conditions. When possible, it is recommended to test the combinations on a small portion of the crop to ensure that a phytotoxic response will not occur as a result of application. See precautions regarding apple phytotoxicity.

**Spray Drift Management:** To avoid spray drift, do not apply when conditions favor drift beyond the target area. The interaction of many equipment and weather related factors determine the potential for spray drift. AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER. More information on managing spray drift can be found on the SYNGENTA CROP PROTECTION website under Stewardship ([http://www.syngentacropprotection-us.com/enviro/driftmanagement/index.asp?nav=drift\\_management](http://www.syngentacropprotection-us.com/enviro/driftmanagement/index.asp?nav=drift_management)).

### RESISTANCE MANAGEMENT

#### GROUP 11 FUNGICIDES

Abound (azoxystrobin) is a Group 11 fungicide. The mode of action for Abound is the inhibition of the Qo (quinone outside) site within the electron transport system [Group 11]. Fungal pathogens can develop resistance to products with the same mode of action when used repeatedly. Because resistance development cannot be predicted, use of this product should conform to resistance management strategies established for the crop and use area. Consult your local or State agricultural authorities for resistance management strategies that are complementary to those in this label. Resistance management strategies may include alternating and/or tank-mixing with products having different modes of action or limiting the total number of applications per season. Syngenta encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label.

Follow the crop specific resistance management recommendations in the directions for use.

If no resistance recommendation on number of applications is specified in the directions for use, follow the recommendations in the table below.

If planned total number of fungicide applications per crop is:	1	2	3	4	5	6	7	8	9	10	11	12
<b>Recommended Solo QoI fungicide sprays</b>	1	1	2	2	2	2	2	3	3	3	3	4
<b>Recommended QoI fungicide sprays in mixture (tank-mix or formulated)</b>	1	2	2	2	2	3	3	4	4	5	5	6

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In situations requiring multiple sprays, develop season long spray programs for Group 11 (QoI) fungicides. In crops where two sequential Group 11 fungicide applications are made, they should be alternated with two or more applications of a fungicide that is not in Group 11. If more than 12 applications are made, observe the following guidelines:

- When using a QoI fungicide as a solo product, the number of applications must be no more than 1/3 (33%) of the total number of fungicide applications per season.
- For QoI mixes in programs in which tank mixes or pre mixes of QoI with mixing partners of a different mode of action are utilized, the number of QoI containing applications must be no more than 1/2 (50%) of the total number of fungicide applications per season.
- In programs in which applications of QoI are made with both solo products and mixtures, the number of QoI containing applications must be no more than 1/2 (50%) of the total number of fungicide applications per season.

If a Group 11 fungicide is applied to the seed or soil, do not make another application with a Group 11 fungicide for at least 3 weeks.

**Rotational Crop Restrictions**

The following crops may be planted at the specified interval following application of Abound fungicide.

**Crop Rotational Interval**

	<b>Plant back interval</b>
Leafy Vegetables (Except Brassica) group	36 days
Brassica, Leafy Greens subgroup	36 days
Vegetables; Root subgroup, Tuberous and Corm subgroup and Leaves of Root and Tuber group	36 days
Buckwheat, millet, oats, and rye	12 months
All other crops with Azoxystrobin registered uses	0 days

**SPRAY DRIFT MANAGEMENT**

**ATTENTION**

Abound is extremely phytotoxic to certain apple varieties.

AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit).

DO NOT spray Abound where spray drift may reach apple trees.

DO NOT spray when conditions favor drift beyond area intended for application. Conditions which may contribute to drift include thermal inversion, wind speed and direction, sprayer nozzle/pressure

combinations, spray droplet size, etc. Contact your State extension agent for spray drift prevention guidelines in your area.

DO NOT use spray equipment which has been previously used to apply Abound to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties.

#### AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

Abound has demonstrated some phytotoxic effects when mixed with products that are formulated as EC's. These effects are enhanced if applications are made under cool, cloudy conditions and these conditions remain for several days following application. In addition, adjuvants that contain some form of silicone have also contributed to phytotoxicity.

Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat.

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### MIXING AND APPLICATION METHODS

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#### Spray Equipment

Abound may be applied with all types of spray equipment commonly used for making ground and aerial applications. Proper adjustments and calibration of spraying equipment to give good canopy penetration and coverage is essential for good disease control.

#### Nozzles

- Equip sprayers with nozzles that provide accurate and uniform application.
- Nozzles should be the same size and uniformly spaced across the boom.
- Calibrate sprayer before use.
- It is suggested that screens be used to protect the pump and to prevent nozzles from clogging.
- Screens placed on the suction side of the pump should be *16-mesh or coarser*.
- Do not place a screen in the recirculation line.
- Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles.
- Check nozzle manufacturer's recommendations.

#### Pump

- Use a pump with capacity to:
  - (1) Maintain 35-40 psi at nozzles
  - (2) Provide sufficient agitation in tank to keep mixture in suspension - this requires recirculation of 10% of tank volume per minute.
- Use a jet agitator or liquid sparge tube for agitation.
- Do not air sparge.

For more information on spray equipment and calibration, consult sprayer manufacturers and state recommendations. For specific local directions and spray schedules, consult the current state agricultural recommendations.

### Mixing Instructions

- Abound is a suspension concentrate (SC) formulation.
- Prepare no more spray mixture than is required for the immediate operation.
- Thoroughly clean spray equipment before using this product.
- Agitate the spray solution before and during application.
- Rinse spray tank thoroughly with clean water after each day's use and dispose of pesticide rinsate by application to an already treated area.

### Abound Alone (No Tank Mix)

- Add  $\frac{1}{2}$ - $\frac{2}{3}$  of the required amount of water to the spray or mixing tank.
- With the agitator running, add Abound to the tank.
- Continue agitation while adding the remainder of the water.
- Begin application of the spray solution after Abound has completely dispersed into the mix water.
- Maintain agitation until all of the mixture has been sprayed.

**Abound + Tank Mixtures:** Abound is usually compatible with all tank-mix partners listed on this label. To determine the physical compatibility of Abound with other products, use a jar test. Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

### Mixing in the Spray Tank

- Add  $\frac{1}{2}$ - $\frac{2}{3}$  of the required amount of water to the spray or mixing tank.
- With the agitator running, add the tank-mix partner(s) into the tank in the same order as described above.
- Allow the material to completely dissolve and disperse into the mix water. Continue agitation while adding the remainder of the water and Abound to the spray tank.
- Allow Abound to completely disperse.
- Spray the mixture with the agitator running.

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## APPLICATION INSTRUCTIONS THROUGH IRRIGATION SYSTEMS (CHEMIGATION)

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### Application Through Irrigation Systems (Chemigation)

- Use only on crops for which chemigation is specified on this label.
- Apply this product only through center pivot, solid set, hand move, or moving wheel irrigation systems. Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Apply in 0.1-0.25 inches/acre. Excessive water may reduce efficacy.

- 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.

**Spray Preparation:** Chemical tank and injector system should be thoroughly cleaned. Flush system with clean water.

**Drip Irrigation:** Abound may be applied through drip irrigation systems for soil-borne disease control. The soil should have adequate moisture capacity prior to drip application.

Terminate drip irrigation at fungicide depletion from the main feed supply tank or after 6 hours from start, whichever is shorter. For maximum efficacy, subsequent irrigation (water only) should be delayed for at least 24 hours following drip application.

### **Sprinkler Irrigation**

- Apply this product through sprinkler irrigation systems including center pivot, lateral move, end tow, side [wheel] roll, traveler, big gun, solid set, or hand move irrigation systems.
- Do not apply this product through any other type of irrigation system except as specified on this label.
- Apply with center pivot or continuous-move equipment distributing ½ acre-inch or less during treatment.
- In general, use the least amount of water required for proper distribution and coverage.
- If stationary systems (solid set, handlines or wheel lines other than continuous-move) are used, this product should be injected into no more than the last 20-30 minutes of the set.
- Do not apply when winds are greater than 10-15 mph to avoid drift or wind skips.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Plant injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform treated water.
- Thorough coverage of foliage is required for good control.
- Good agitation should be maintained during the entire application period.

If you have questions about calibration you should contact State Extension Service specialist, equipment manufacturers or other experts.

### **Operating Instructions**

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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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. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
8. 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.

#### **Center Pivot Irrigation Equipment**

**Notes:** (1) Use only with drive systems which provide uniform water distribution. (2) Do not use end guns when chemigating Abound through center pivot systems because of non-uniform application.

- Determine the size of the area to be treated.
- Determine the time required to apply  $\frac{1}{8}$ - $\frac{1}{2}$  inch of water over the area to be treated when the system and injection equipment are operated at normal pressures as specified by the equipment manufacturer. When applying Abound through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution. Run the system at 80-95% of the manufacturer's rated capacity.
- Using water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of Abound required to treat the area covered by the irrigation system.
- Add the required amount of Abound and sufficient water to meet the injection time requirements to the solution tank.
- Make sure the system is fully charged with water before starting injection of the Abound solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
- Maintain constant solution tank agitation during the injection period.
- Continue to operate the system until the Abound solution has cleared the sprinkler head.

#### **Solid Set, Hand Move, and Moving Wheel Irrigation Equipment**

- Determine the acreage covered by the sprinklers.

- Fill injector solution tank with water and adjust flow rate to use the contents over a 20 to 30-minute interval. When applying Abound through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of Abound required to treat the area covered by the irrigation system.
- Add the required amount of Abound into the same quantity of water used to calibrate the injection period.
- Operate the system at the same pressure and time interval established during the calibration.
- Stop injection equipment after treatment is completed. Continue to operate the system until the Abound solution has cleared the last sprinkler head.

### **Specific Instructions for Public Water Systems**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

### SOILBORNE/SEEDLING DISEASE CONTROL

Abound can provide control of many soilborne diseases if applied early in the growing season. Specific applications for soilborne diseases include in-furrow applications and banded applications applied over the row, either shortly after plant emergence or during herbicide applications or cultivation. These applications will provide control of pre- or postemergence damping off and diseases that infect plants at the soil-plant interface.

The use of either type of application depends on the cultural practices in the region. In some locations, one type of application may provide better disease control than the other, depending on the timing of the disease epidemic. Seedling diseases are generally controlled by in-furrow applications while banded applications are more effective against soilborne diseases that develop later in the season. Consult your local expert to get some guidance regarding application type.

#### BANDED

- Apply Abound prior to infection as a directed spray to the soil, using single or multiple nozzles, adjusted to provide thorough coverage of the lower stems and the soil surface surrounding the plants.
- Band width should be limited to 7 inches or less.
- Apply Abound at a rate of 0.40-0.80 fl. oz. product (0.10-0.20 oz. a.i.)/1000 row feet (for banded applications on 22-inch rows the maximum application rate is 0.70 fl. oz./1000 row feet).
- These applications come into contact with the foliage and are counted as foliar applications when considering resistance management.
- They may be applied during cultivation or hilling operations to provide soil incorporation.

#### IN-FURROW

- Apply Abound as an in-furrow spray in 3-15 gallons of water at planting.
- Mount the spray nozzle so the spray is directed into the furrow just before the seed are covered.
- Use the higher rate when the weather conditions are expected to be conducive for disease development, if the field has a history of Pythium problems, or if minimum/low till programs are in place.

#### IN-FURROW APPLICATION RATES

RATE PER 1000 ROW FEET		PRODUCT PER ACRE (fl. oz.)						
fl. oz. product	oz. a.i.	22" rows	30" rows	32" rows	34" rows	36" rows	38" rows	40" rows
0.40	0.10	9.5	7.0	6.5	6.1	5.8	5.5	5.2
0.60	0.15	14.3	10.5	9.8	9.2	8.7	8.3	7.8

40" = 13,068 row ft., 38" = 13,754 row ft., 36" = 14,520 row ft., 34" = 15,374 row ft., 32" = 16,315 row ft., 30" = 17,424 row ft., and 22" = 23,760 row ft./Acre

#### DRIP

Refer to the Application Instructions Through Irrigation System section.



**DIRECTIONS FOR USE**

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Almonds	Alternaria leaf and fruit spot <i>(Alternaria alternata)</i> Anthracnose <i>(Colletotrichum acutatum)</i> Leaf blight <i>(Seimatosporium lichenicola)</i> Leaf rust <i>(Tranzschelia discolor)</i> Scab <i>(Cladosporium carpophilum)</i> Shothole <i>(Wilsonomyces carpophilus)</i>	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season following the resistance management guidelines. Applications may be made by ground, air (minimum 15 GPA) or chemigation. Abound may be applied by air only at growth stages prior to and including 5 weeks after petal fall. An adjuvant may be added at specified rates.  Anthracnose, scab and shothole: Begin applications prior to disease development and continue at 7-14 day intervals throughout the season.  Blossom blight: Begin applications at early bloom and continue through petal fall.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Brown rot blossom blight <i>(Monilinia laxa, M. fructicola)</i>	12.0-15.5 (0.20-0.25)	

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 28 days of harvest (28 day PHI).

17/68

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Artichoke, globe	Ramularia leaf spot ( <i>Ramularia cynarae</i> )	11.0-15.5 (0.18-0.25)	Begin applications prior to or in the early stages of disease development, and continue as needed throughout the season at a 2-3 week interval, up to and including the day of harvest. Do not apply at less than 7-day intervals. Applications may be made by ground, air or chemigation. For ground applications, apply in 50-200 gallons of water per acre to obtain coverage without excessive runoff. For aerial applications, apply in a minimum of 5 gallons of water per acre. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Asparagus	Stemphyllium purple spot ( <i>Stemphyllium vesicarium</i> )	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Use a minimum of 10 gallons of water per acre by ground, and minimum of 3 gallons per acre by air. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 100 days of harvest (100 day PHI).

2/2

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Bananas Plantains	Black sigatoka <i>(Mycosphaerella fijiensis)</i> Yellow sigatoka <i>(Mycosphaerella musicola)</i>	5.5-8.5 (0.09-0.135)	Abound applications should begin prior to disease development and continue throughout the season every 12-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 66.4 fl. oz. of product/A/season.

Do not apply more than 1.08 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

20/8

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Barley	Kernel blight ( <i>Alternaria</i> spp.) Leaf rust ( <i>Puccinia hordei</i> )	6.2-12.3 (0.10-0.20)	<b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes proper selection of varieties with disease tolerance, proper timing and placement of irrigation, removal of plant debris in which inoculum overwinters, plant residue management, and crop rotation.
	Net blotch ( <i>Pyrenophora teres</i> ) Barley stripe ( <i>Drechslera graminea</i> = <i>Pyrenophora graminea</i> )	9.0-12.0 (0.15-0.20)	<b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. Do not make more than two (2) applications of Abound or other Group 11 fungicide per season.
	Powdery mildew ( <i>Erysiphe graminis</i> f. sp. <i>hordei</i> ) Stagonospora blotch ( <i>Stagonospora nodorum</i> )	12.0 (0.20)	<b>Application Directions:</b> Abound should be applied prior to disease development up to late head emergence (Feekes 10.5 or Zadok's 59). Protecting the flag leaf is important for maximizing disease control. Applications may be made by ground, air or chemigation. A crop oil concentrate adjuvant may be added at 1.0% v/v to optimize efficacy.

**Specific Use Restrictions:**

Do not apply later than Feekes growth stage 10.5 (Zadok's growth stage 59).

Do not apply more than 0.40 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 14 days of harvest for forage and hay.

Do not apply within 14 days of harvest for grain and straw in the following states: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, West Texas (west of Rt. 283 between the Red River and Brady and west of Rt. 377 between Brady and Del Rio); Utah, Washington, and Wyoming.

Do not apply within 45 days of harvest in all other states including East Texas (east of Rt. 283 between the Red River and Brady and east of Rt. 377 between Brady and Del Rio).

2/18

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Berries</b> <b>Bushberry subgroup</b>  Blueberry Currant Elderberry Gooseberry Huckleberry Including all cultivars and/or hybrids of these  <b>Lingonberry</b> <b>Juneberry</b> <b>Salal</b>	Botryosphaeria canker <i>(Botryosphaeria spp.)</i> Powdery mildew <i>(Sphaerotheca spp.)</i> Septoria blight <i>(Septoria spp.)</i> Mummyberry <i>(Monilinia vaccinii-corymbosi)</i> Alternaria fruit rot <i>(Alternaria spp.)</i> Phomopsis stem canker <i>(Phomopsis vaccinii)</i> Anthracnose fruit rot <i>(Colletotrichum gloeosporoides)</i>	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 46 fl. oz. of product/A/season.

Do not apply more than 0.75 lb. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Berries</b>  <b>Caneberry subgroup</b></p> <p>Blackberry                      Bingleberry                      Boysenberry                      Dewberry                      Lowberry                      Marionberry                      Olallieberry                      Youngberry                      Loganberry                      Red and black raspberry                      Including all cultivars and/or hybrids of these</p>	<p>Botryosphaeria canker                      (<i>Botryosphaeria dothidea</i>)                      Anthracnose                      (<i>Spaceloma necator</i>)                      (<i>Elsinoe veneta</i>)                      Powdery mildew                      (<i>Sphaerotheca macularis</i>)                      Leaf spot                      (<i>Septoria rubi</i>)                      (<i>Sphaerulina rubi</i>)                      Colletotrichum rot                      (<i>Colletotrichum gloeosporioides</i>)                      Spur blight                      (<i>Didymella applanata</i>)                      Rosette or double blossom                      of blackberries                      (<i>Cercospora rubi</i>)</p>	<p>6.2-15.4                      (0.10-0.25)</p>	<p>Begin applications at onset of disease and continue as required until harvest. Make applications on a 7-14 day schedule. Use a minimum water volume of 10 gals. per acre by ground and a minimum of 3 gals. by air.</p> <p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.  
 Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.  
 May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Brassica</b> <b>Head and Stem subgroup</b></p> <p>Broccoli Chinese broccoli [gai lon] Brussels sprouts Cabbage Chinese cabbage [napa] Chinese mustard cabbage [gai choy] Cauliflower Cavalo broccolo Kohlrabi Including all cultivars and/or hybrids of these</p>	<p>Alternaria leaf spot (<i>Alternaria</i> spp.) Downy mildew (<i>Peronospora parasitica</i>)</p>	<p>6.2-15.4 (0.10-0.25)</p>	<p>Abound applications should begin prior to disease development and continue throughout the season on a 7-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Use a minimum of 10 gals. of water per acre by ground, and minimum of 3 gals. per acre by air.</p> <p>Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>
<p><b>Specific Use Restrictions:</b> Do not apply more than 92.3 fl. oz. of product/A/season. Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products. May be applied the day of harvest (0 day PHI).</p>			

2/2  
1/2



Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Brassica</b> <b>Leafy Greens subgroup</b>  Broccoli raab Cabbage, Chinese Collards Kale Mizuna Mustard greens Mustard spinach Rape greens Including all cultivars and/or hybrids of these	White rust ( <i>Albugo candida</i> ) Black spot ( <i>Alternaria</i> spp.) Cercospora leaf spot ( <i>Cercospora</i> spp.)	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Seedling root rot, basal stem rot ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 46 fl. oz. of product/A/season.

Do not apply more than 0.75 lb. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Bulb Vegetables</b>  Garlic Leek Onion, bulb Onion, green Welch onion Shallot	<b>Foliar Diseases</b> Cladosporium leaf blotch ( <i>Cladosporium allii</i> ) Purple blotch ( <i>Alternaria porri</i> ) Rust ( <i>Puccinia allii</i> )	6.2-12.3 (0.10-0.20)	For downy mildew, make preventative applications on a 5-7 day schedule.  For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. If applications are made by air, the higher rates should be used for adequate control. An adjuvant may be added at specified rates.
	Downy mildew ( <i>Peronospora destructor</i> ) Botrytis leaf blight ( <i>Botrytis aclada</i> )	9.0-15.5 (0.15-0.25)	Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.  Mixtures of Abound with insecticides and silicone adjuvants should be tested for crop safety before application to the crop.
	<b>Soilborne Diseases</b> Rhizoctonia damping-off ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions under <b>GENERAL INFORMATION</b> section. If the application is an in-furrow application, the spray should be made just prior to seed placement so that the majority of the chemical is under the seed. This will reduce the potential for phytotoxicity, especially if fertilizer is added to the application.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.  
 Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.  
 May be applied the day of harvest (0 day PHI).

8/21/08

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Canola</b> (see Oilseed Crops for additional information)	Blackleg ( <i>Leptosphaeria maculans</i> ) Alternaria blackspot ( <i>Alternaria</i> spp.) Sclerotinia stem rot ( <i>Sclerotinia sclerotiorum</i> )	6.2-15.4 (0.10-0.25)	<p>In general, apply 7.0 fl. oz. of Abound at early bud followed by 14.0 fl. oz. at about 45 days before harvest. A third application of 7.0 fl. oz. may be made 30 days before harvest.</p> <p>Specifically for blackleg. Abound applications should be made at the 2-4 leaf stage. For Alternaria or Sclerotinia, 9.0-15.5 fl. oz. product/A should be applied at 10-25% flowering (3-7 days following first flower). Use the higher rate under heavy disease pressure or when conditions are favorable for disease. For control of Alternaria alone, 8.0 fl. oz. product/A may be applied at pod stage (approximately 95% petal fall).</p> <p>Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p>Applications may be made by ground, air or chemigation. Use a minimum of 10 gallons of water per acre for ground applications.</p>

**Specific Use Restrictions:**

Do not apply more than 27.6 fl. oz. of product/A/season.

Do not apply more than 0.45 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 30 days of harvest.

2/12

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Carrots	Early blight <i>(Cercospora carotae)</i> Late blight <i>(Alternaria dauci)</i> White mold <i>(Sclerotium rolfsii)</i>  For additional diseases, see <b>Vegetables, root,                      subgroup</b>	9.0-20.0 (0.15-0.33)	Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Rhizoctonia root rot <i>(Rhizoctonia solani)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 123 fl. oz. of product/A/season.

Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Celery	Early blight <i>(Cercospora apii)</i> Late blight <i>(Septoria apicola)</i>  For additional diseases, see <b>Leafy Vegetables</b>	9.0-15.5 (0.15-0.25)	Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Rhizoctonia root rot <i>(Rhizoctonia solani)</i>		0.40-0.80 fl. oz./1000 row feet

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.  
 Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.  
 May be applied the day of harvest (0 day PHI).

29  
/08

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Christmas Trees	Diplodia tip blight ( <i>Diplodia pinea</i> ) Lophodermium needlecast ( <i>Lophodermium pinastri</i> ) Swiss needlecast ( <i>Phaeocryptopus gaumannii</i> )	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season at 7-21 day intervals following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 123 fl. oz. of product/A/season.

Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Citrus Fruit</b></p> <p>Calamondin Citron Grapefruit Kumquat Lemon Lime Mandarin Orange (sour and sweet) Pummelo Satsuma mandarin Tangerine Including all cultivars and/or hybrids of these</p>	<p>Greasy spot (<i>Mycosphaerella citri</i>) Melanose (<i>Diaporthe citri</i>) Scab (<i>Elsinoe fawcettii</i>) Albinism (<i>Alternaria alternata</i> pv <i>citri</i>) Post bloom fruit drop (PFD) (<i>Colletotrichum acutatum</i>) Alternaria leaf and fruit spot (<i>Alternaria citri</i>) Penicillium Decays Green mold, Whisker mold, suppression of Blue mold (<i>Penicillium</i> spp.) Diplodia stem-end rot (<i>Diplodia natalensis</i>) Phomopsis stem-end rot (<i>Phomopsis citrii</i>) Cercospora leaf spot (<i>Cercospora</i> spp.) Powdery mildew (<i>Erysiphe</i> spp.)</p>	<p>12.0-15.5 (0.20-0.25)</p>	<p>Abound applications should begin prior to disease development and continue throughout the season on 7-21 day intervals following the resistance management guidelines. Under conditions that favor severe disease epidemics, the higher application rates should be used. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. A horticultural spray oil should be used to improve control of greasy spot.</p> <p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. Do not make more than four (4) applications of Abound or other Group 11 fungicide per season.</p>
<p>Pummelo Citrus Hybrid (Uniq fruit only)</p>	<p><b>Soilborne Diseases</b> Seedling root rot, basal stem rot (<i>Rhizoctonia solani</i>)</p>	<p>0.40-0.80 fl. oz./1000 row feet</p>	<p>For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.</p>

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- May be applied the day of harvest (0 day PHI).
- Do not use Abound in citrus plant propagation nurseries.

8/19

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Clover (and stands containing Clover)</b> <i>(Trifolium spp., Melilotus spp.)</i>	Rust <i>(Phakopsora spp.)</i> Alternaria leaf spots <i>(Alternaria spp.)</i> Cercospora leaf spots <i>(Cercospora spp.)</i> Powdery mildew <i>(Oidium spp., Erysiphe spp.)</i> Downy mildew <i>(Peronospora spp.)</i>	6.0-15.5 (0.10-0.25)	<p><b>Integrated Pest (Disease) Management:</b> Quadris should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, proper timing and placement of irrigation, crop rotation and crop residue management.</p> <p><b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Quadris or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p><b>Application Directions:</b> Quadris applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Use the higher rates under severe disease pressure. Applications may be made by ground, air or chemigation. Use of an additive such as crop oil concentrate or non-ionic surfactant is recommended.</p> <p>For management of outbreaks of Asian rust on alternate host species such as kudzu, lespedeza, trefoil and vetch, apply Quadris to forages grown in the vicinity of soybeans and other legume crops (beans and peas) as a part of an Asian rust disease management strategy. Consult with local experts, university extension agents, and the Syngenta rust website (<a href="http://www.soybeanrust.com">www.soybeanrust.com</a>) for the latest advice.</p>

**Specific Use Restrictions:**

- 1) For pure stands of clover or mixed stands with grasses, do not apply more than 0.75 lbs. a.i./A per season of azoxystrobin-containing products.
- 2) Do not apply within 14 days of harvest for forage and hay.
- 3) Not for use on rangeland.
- 4) For pure stands of grasses, see **Grasses (grown for seed)** for use on grasses.



Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Corn</b>  Field Pop Sweet (Includes Seed Production)	Rust ( <i>Puccinia sorghi</i> )	6.2-9.2 (0.10-0.15)	For gray leaf spot, apply Abound at the onset of disease. A second application may be required 14 days later if disease pressure persists.
	Anthracnose leaf blight ( <i>Colletotrichum graminicola</i> ) Gray leaf spot ( <i>Cercospora sorghi</i> ) Northern corn leaf blight ( <i>Setosphaeria turcica</i> ) Northern corn leaf spot ( <i>Cochliobolus carbonum</i> ) Southern corn leaf blight ( <i>Cochliobolus heterostrophus</i> ) Eye spot ( <i>Aureobasidium zeae</i> )		For all other diseases, Abound applications should begin prior to disease development and may continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. For field corn and field corn grown for seed, do not make more than two (2) applications per season.
	<b>Soilborne Diseases</b> Rhizoctonia root and stalk rot ( <i>Rhizoctonia solani</i> )		0.40-0.80 fl. oz./1000 row feet

**Specific Use Restrictions:**

- Do not apply more than 123 fl. oz. of product/A/season.
- Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 7 days of harvest.

5/13

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Cotton	Anthracnose ( <i>Glomerella gossypii</i> ) Ascochyta blight ( <i>A. gossypii</i> ) Boll rot ( <i>A. gossypii</i> ) Hardlock ( <i>Fusarium verticillioides</i> ) Rust ( <i>Puccinia</i> spp.)	6.0-9.0 (0.1-0.15)	<p><b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, optimum plant populations, proper fertilization, plant residue management, crop rotation and proper water management.</p> <p><b>Resistance Management:</b> Do not apply more than two foliar applications of Abound or other QoI fungicides before alternating with a fungicide that has a different mode of action. Do not make more than three (3) foliar applications of Abound or other QoI fungicides per crop per acre per year.</p> <p><b>Application Directions:</b> For optimum disease control, Abound applications should begin prior to or in the early stages of disease development. Applications may be made by ground, air, or chemigation. An adjuvant may be added at specified rates. Minimum application volumes for air and ground are 5 and 10 gallons per acre, respectively.</p> <p>The first Abound application should be targeted approximately at pinhead square to first bloom to protect the plant from diseases. Subsequent application(s) are specified on a 14-21 day schedule. An additional application may be made depending on environmental conditions and the health of the cotton plant.</p> <p>Under poor environmental conditions conducive to seedling disease and poor cotton growth, Abound may be applied to early season cotton to suppress damping off and other diseases which result in plant stand loss.</p>
	Rhizoctonia seedling blight ( <i>Rhizoctonia solani</i> ) Pythium seedling blight ( <i>Pythium aphanidermatum</i> )	<b>In-Furrow</b> 0.40-0.80 fl. oz. product per 1000 row feet (0.10-0.20 oz a.i. per 1000 row feet)	<p><b>Abound Application Directions:</b> Apply Abound as an in-furrow spray in 3-7 gallons of water at planting. Mount the spray nozzle so the spray is directed into the furrow just before the seed are covered. Use the higher rate when the weather conditions are expected to be conducive for disease development, if the field has a history of Pythium problems, or if minimum/low till programs are in place.</p> <p>See <b>GENERAL INFORMATION</b> section for table illustrating total fluid ounces per acre with various row spacings.</p>

**Specific Use Restrictions:**

Do not apply more than 27 oz./crop/season as a foliar spray.  
 May be applied up to 45 days before harvest.

2/19

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Cranberry	Cottonball ( <i>Monilia oxycocci</i> ) Lophodermium twig blight ( <i>Lophodermium</i> spp.) Fruit rots ( <i>Phylospora vaccinii</i> ) ( <i>Glomerella cingulata</i> ) ( <i>Coleophoma empetri</i> )	6.2-15.4 (0.10-0.25)	Begin applications at 5-10% bloom for fruit rot, cottonball, and twig blight. Continue applications on a 7-14 day schedule if conditions are favorable for disease development. Applications may be made by ground, chemigation or air.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

Do not apply within 3 days of harvest (3 day PHI).

Do not treat cranberry fields used for aquaculture of fish and crustacea.

Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat. Applicators should use care in making applications near non-target aquatic habitats.

Do not apply to flooded crop.

Do not allow release of irrigation or flood water to non-target aquatic habitat for at least 14 days after the last application.

2/25

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Cucurbits</b></p> <p>Cantaloupe Chayote Chinese-waxgourd Cucumber Gourds Honeydew Melons <i>Momordica</i> spp. (bitter melon, balsam apple) Muskmelon Watermelon Pumpkin Squash Zucchini Including cultivars and/or hybrids of these</p>	<p>Anthracnose (<i>Colletotrichum lagenarium</i>) Belly rot (<i>Rhizoctonia solani</i>) Downy mildew (<i>Pseudoperonospora cubensis</i>) Gummy stem blight (<i>Didymella bryoniae</i>) Leaf spots (<i>Alternaria</i> spp., <i>Cercospora</i> spp.) Myrothecium canker (<i>Myrothecium roridum</i>) Plectosporium blight (<i>Plectosporium tabacinum</i>) Powdery mildew (<i>Sphaerotheca fuliginea</i>, <i>Erysiphe cichoracearum</i>)</p>	<p>6.2-15.4 (0.10-0.25)</p>	<p>For both downy and powdery mildew, make preventative applications on a 5-7 day schedule. For belly rot control, the first application should be made at the 1-3 leaf crop stage with a second application just prior to vine tip over or 10-14 days later whichever occurs first. For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.</p> <p>Do not tank mix Abound with COC, MSO or silicon adjuvants.</p> <p>Do not tank mix Abound with Malathion, Kelthane®, Thiodan®, Phaser®, Lannate®, Lorsban®, M-Pede® or Botran®.</p> <p>Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. Do not make more than four (4) foliar applications of Abound or other Group 11 fungicides per crop per acre per year.</p>
	<p><b>Soilborne diseases</b> Rhizoctonia root rot (<i>Rhizoctonia solani</i>)</p>	<p>0.40-0.80 fl. oz./1000 row feet</p>	<p>For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.</p>

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 1 day of harvest (1 day PHI).

3/6  
6/8

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Grapes</b> Including Muscadines</p>	<p>Downy mildew (<i>Plasmopara viticola</i>) Phomopsis cane and leaf spot (<i>Phomopsis viticola</i>) Powdery mildew (<i>Uncinula necator</i>) Black rot (<i>Guignardia bidwellii</i>)</p> <p><b>Suppression Only:</b> Botrytis bunch rot (<i>Botrytis cinerea</i>)</p>	<p>10.0-15.5 (0.16-0.25)</p>	<p>Abound applications should begin prior to disease development and continue throughout the season every 10-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.</p> <p>Do not apply more than two sequential foliar applications of Abound or other Group 11 fungicides before alternating with a fungicide that is not in Group 11.</p> <p style="text-align: center;"><b>ATTENTION</b></p> <p>Abound is extremely phytotoxic to certain apple varieties.</p> <p><b>AVOID SPRAY DRIFT.</b> Extreme care must be used to prevent injury to apple trees (and apple fruit).</p> <p>DO NOT spray Abound where spray drift may reach apple trees.</p> <p>DO NOT use spray equipment which has been previously used to apply Abound to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties.</p> <p><b>AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.</b></p>

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 14 days of harvest (14 day PHI).

27/28

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Grasses (grown for seed)	Rust ( <i>Puccinia</i> spp.) Powdery mildew ( <i>Erysiphe graminis</i> ) Ergot Stem Diseases	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 10-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 49 fl. oz. of product/A/season.

Do not apply more than 0.8 lb. a.i./A per season of azoxystrobin-containing products.

May be applied up to 8 days prior to harvest (swathing) (8 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Herbs &amp; Spices (except black pepper)</b></p> <p>Allspice; Angelica; Anise (seed); Anise, star; Annatto; Balm; Basil; Borage; Burnet; Camomile; Caper (buds); Caraway; Caraway, black; Cardamon; Cassia (buds); Catnip; Celery seed; Chervil (dried); Chive; Chive, Chinese; Cinnamon; Clary; Clove (buds); Coriander (cilantro or Chinese parsley) (leaf); Coriander (seed); Costmary; Culantro (leaf and seed); Cumin; Curry (leaf); Dill (seed); Dillweed; Fennel, common; Fennel, Florence (seed); Fenugreek; Grains of paradise; Horehound; Hyssop; Juniper (berry); Lavender; Lemongrass; Lovage (leaf and seed); Mace; Marigold; Marjoram; Mustard (seed), Nasturtium; Nutmeg; Parsley (dried); Pennyroyal; Pepper, white; Poppy seed; Rosemary; Rue; Saffron; Sage; Savory, summer and winter; Sweet bay; Tansy; Tarragon; Thyme; Vanilla; Wintergreen; Woodruff; Wormwood</p>	<p>Corynespora blight (<i>Corynespora cassiicola</i>) Dill blight (<i>Cercosporidium punctum</i>) Phoma blight (<i>Passalora puncta</i>)</p>	<p>6.2-15.4 (0.10-0.25)</p>	<p>Abound applications should begin at the onset of disease development and continue throughout the season on a 7 day schedule, following the resistance management guidelines. Applications may be made by ground only. An adjuvant may be added at specified rates. Use a minimum of 30 gallons of water per acre.</p> <p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

39/68

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Leafy Vegetables (except brassica)</b>  Amaranth Arugula Cardoon Celery Celtuce Chervil Chrysanthemum, edible Coriander, leaves (Cilantro) Corn salad Cress Dandelion Dock Endive Fennel Lettuce, head and leaf Orach Parsley Purslane Radicchio Rhubarb Spinach Swiss Chard Including cultivars and/or hybrids of these	<b>Foliar Diseases</b> Alternaria leaf spot ( <i>Alternaria sonchi</i> , <i>A. spp.</i> ) Cercospora leaf spot ( <i>Cercospora spp.</i> ) Anthracnose ( <i>Microdochium panattonianum</i> , <i>Colletotrichum dematium</i> ) Septoria leaf spot ( <i>Septoria petroselini</i> ) White rust ( <i>Albugo occidentalis</i> )	6.2-15.4 0.10-0.25)	For both downy and powdery mildew, make preventative applications on a 5-7 day schedule.  For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Downy mildew ( <i>Bremia lactucae</i> ) Powdery mildew ( <i>Erysiphe cichoracearum</i> )	12.0-15.5 (0.20-0.25)	<b>ATTENTION:</b> Applications of Abound to leafy vegetable foliage have contributed to phytotoxicity under certain circumstances. Proceed with caution with regard to tank mixes and adjuvants when treating all leafy vegetables with Abound. Abound must not be tank mixed on leaf lettuce with Ambush® WP, Pounce® WP, Aliette®, Warrior® with Zeon™ Technology, or another product that may increase the penetration of Abound into the leaf surface, such as, but not limited to, silicone wetters.
	<b>Soilborne Diseases</b> Webb blight, Bottom rot, Crater rot, Root rot ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.  
 Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.  
 May be applied the day of harvest (0 day PHI).

2/10



Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Legume Vegetables, dry and succulent and Legume Vegetables, Foliage of any cultivar of bean (<i>Phaseolus</i> spp.) and field pea (<i>Pisum</i> spp.)</b></p> <p>Bean (<i>Lupinus</i> spp.) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin)</p> <p>Bean (<i>Phaseolus</i> spp.) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean)</p> <p>Bean (<i>Vigna</i> spp.) (includes adzuki bean, asparagus bean, blackeyed pea, cowpea, catjang, Chinese longbean, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean)</p> <p>Broad bean (fava bean) (<i>Vicia faba</i>)</p> <p>Chickpea (garbanzo bean) (<i>Cicer arietinum</i>)</p> <p>Guar (<i>Cyamopsis tetragonoloba</i>)</p> <p>Jackbean (<i>Canavalia ensiformis</i>)</p> <p>Lablab bean (hyacinth bean) (<i>Lablab purpureus</i>)</p> <p>Lentil (<i>Lens esculenta</i>)</p> <p>Pea (<i>Pisum</i> spp.) (includes dwarf pea, edible-pod pea, English pea, garden pea, green pea, field pea, snow pea, sugar snap pea)</p> <p>Pigeon pea (<i>Cajanus cajan</i>)</p> <p>Sword bean (<i>Canavalia gladiata</i>)</p>	<p>Bean rust (<i>Uromyces appendiculatus</i>)</p>	<p>6.2 (0.10)</p>	<p>Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Use the higher rates under severe disease pressure. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. For rust, use of a non-ionic surfactant is recommended.</p>
	<p>Anthracnose (<i>Colletotrichum lindemuthianum</i>)</p> <p>Alternaria leaf spot (<i>Alternaria alternata</i>)</p> <p>Ascochyta leaf spot (<i>Ascochyta phaseolorum</i>)</p> <p>Rust (<i>Phakopsora</i> spp.)</p> <p>Southern blight (<i>Sclerotium rolfsii</i>)</p> <p>Web blight (<i>Rhizoctonia solani</i>)</p> <p>Ascochyta blight (<i>Mycosphaerella pinodes</i>)</p> <p>Ascochyta leaf and pod spot (<i>Ascochyta</i> spp.)</p> <p>Alternaria blight (<i>Alternaria</i> spp.)</p>	<p>6.2-15.4 (0.10-0.25)</p>	<p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>
	<p><b>Soilborne Diseases</b></p> <p>Rhizoctonia root rot (<i>Rhizoctonia solani</i>)</p>	<p>0.40-0.80 fl. oz./1000 row feet</p>	<p>For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section. Conduct a seed safety test with your crop before making in-furrow applications.</p>

**Specific Use Restrictions:**

- Do not apply more than 92.3 fl. oz. of product/A/season.
- Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 14 days of harvest of dry legume vegetables (dry bean and dry pea seeds).
- For use on soybeans, please refer to the soybean crop directions for use.
- May be applied the day of harvest (0 day PHI) for succulent beans and peas.

9/11

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Mint</b> (Fresh or for processing into mint oil)	Rust <i>(Puccinia menthae)</i> Powdery mildew <i>(Erysiphe spp.)</i>	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-10 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Seedling root rot, basal stem rot <i>(Rhizoctonia solani)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 46 fl. oz. of product/A/season.

Do not apply more than 0.75 lb. a.i./A per season of azoxystrobin-containing products.

For processed mint, do not apply within 7 days of harvest (7 day PHI).

For fresh mint, may be applied the day of harvest (0 day PHI).

2/25

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Nongrass Animal Feeds Forage, Fodder, Straw and Hay</b></p> <p>Stands containing:                      Alfalfa (<i>Medicago sativa</i> subsp. <i>sativa</i>)                      Bean, velvet (<i>Mucuna pruriens</i> var. <i>utilis</i>)                      Kudzu (<i>Pueraria lobata</i>)                      Lespedeza (<i>Lespedeza</i> spp.)                      Lupin (<i>Lupinus</i> spp.)                      Sainfoin (<i>Onobrychis viciifolia</i>)                      Trefoil (<i>Lotus</i> spp.)                      Vetch (<i>Vicia</i> spp.)                      Vetch, crown (<i>Coronilla varia</i>)                      Vetch, milk (<i>Astragalus</i> spp.)</p> <p>Clover (see specific use instructions)</p>	<p>Rust (<i>Phakopsora</i> spp.)                      Alternaria Leaf spots (<i>Alternaria</i> spp.)                      Cercospora leaf spots (<i>Cercospora</i> spp.)                      Powdery Mildew (<i>Oidium</i> spp., <i>Erysiphe</i> spp.)                      Downy Mildew (<i>Peronospora</i> spp.)</p>	<p>6.0-15.5 (0.10-0.25)</p>	<p><b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, proper timing and placement of irrigation, crop rotation and crop residue management.</p> <p><b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p><b>Application Directions:</b> Abound applications should begin prior to disease development and continue throughout the season. Use the higher rates under severe disease pressure. Applications may be made by ground, air or chemigation. Use of an additive such as crop oil concentrate or non-ionic surfactant is recommended.</p> <p>For management of outbreaks of Asian rust on alternate host species such as kudzu, lespedeza, trefoil and vetch, apply Abound to forages grown in the vicinity of soybeans and other legume crops (beans and peas) as a part of an Asian rust disease management strategy. Consult with local experts, university extension agents, and the Syngenta rust website (<a href="http://www.soybeanrust.com">www.soybeanrust.com</a>) for the latest advice.</p>

**Specific Use Restrictions:**

Do not apply more than 0.25 lb. ai/A per cutting.

For pure stands of nongrass animal feeds or mixed stands with grasses, do not apply more than 0.75 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 14 days of harvest for forage and hay.

Not for use on rangeland.

For pure stands of grasses, see **Grasses (grown for seed)** for use on grasses.

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Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Oilseed Crops</b> Crambe Flax Mustard, Indian Mustard, Field Mustard, Black Rapeseed Rapeseed, Indian Safflower Sunflower	Downy mildew <i>(Plasmopora halstedii,</i> <i>Plasmopora helianthi)</i> Alternaria leaf spot <i>(Alternaria spp.)</i>	6.0-15.5 (0.1-0.25)	Apply 7.0 fl. oz. of Abound at early bud followed by 14.0 fl. oz. at about 45 days before harvest. A third application of 7.0 fl. oz. may be made 30 days before harvest. Applications may be made by ground, air or chemigation. Use a minimum of 10 gallons of water per acre for ground applications.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

- Do not apply more than 27 fl. oz. of product/A/season.
- Do not apply more than 0.45 lb. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 30 days of harvest (30 day PHI).

8/1/08

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Peanuts	<b>Soilborne Diseases – early season (in-furrow application)</b> <i>Aspergillus</i> crown rot <i>(Aspergillus niger)</i> Pythium damping off <i>(Pythium spp.)</i> Stem rot/White mold suppression <i>(Sclerotium rolfsii)</i>	0.40-0.80 fl. oz./ 1000 row feet	Apply Abound in-furrow at planting for control of various seed/seedling diseases including early season suppression of stem rot. See directions and rates under <b>GENERAL INFORMATION</b> section.
	<b>Soilborne Diseases – mid-late season</b> Rhizoctonia peg and pod rot <i>(Rhizoctonia solani)</i> Stem rot/White mold <i>(Sclerotium rolfsii)</i>  <b>Suppression Only:</b> Pythium pod rot <i>(Pythium myriotylum)</i> Cyliandrocladium black rot <i>(Cyliandrocladium crotalariae)</i>	12.0-24.5 (0.20-0.40)	Abound should be applied at approximately 60 and 90 days after planting as a foliar application. This application regime may be applied earlier in the season if environmental conditions favor disease development. These two applications of Abound will provide protection against the soil borne diseases and will also provide control of the foliar diseases listed for a 10-14 day period after each spray. Under heavy disease pressure and/or where there is high rainfall and/or irrigation, use 18.5-24.5 oz./A. For light disease pressure and dry environmental conditions (non-irrigated, low rainfall), use 12.0-24.5 oz./A. For control of Pythium, a rate of 24.5 fl. oz./A is required. Additional applications of other fungicides on a leaf spot application schedule will be required to provide season-long disease control of the leaf spot diseases. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.
	<b>Foliar Diseases</b> Early leaf spot <i>(Cercospora arachidicola)</i> Late leaf spot <i>(Cercosporidium personatum)</i> Rust <i>(Puccinia arachidis)</i> Web blotch <i>(Phoma arachidicola)</i>	6.2-18.3 (0.10-0.30)	For foliar disease control only, a lower rate of Abound may be applied on a 10-14 day interval.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

- Do not apply more than 49 fl. oz. of product/A/season.
- Do not apply more than 0.8 lb. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 14 days of harvest (14 day PHI).

28/25

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Pecans	Anthracnose ( <i>Glomerella cingulata</i> ) Scab ( <i>Cladosporium caryigenum</i> )	6.2-12.3 (0.10-0.20)	Abound applications should begin prior to disease development and continue throughout the season on 7-21 day intervals following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 73.8 fl. oz. of product/A/season.

Do not apply more than 1.2 lbs. a.i./A per season of azoxystrobin-containing products.

Do not apply within 45 days of harvest (45 day PHI).

9/2/07

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Peppers and other Fruiting Vegetables (except cucurbits)</b>  <b>Pepper</b> Bell Pepper Non-Bell Pepper Sweet Non-Bell Pepper  <b>Eggplant</b> <b>Groundcherry</b> <b>Okra</b> <b>Pepino</b> <b>Tomatillo</b>  <b>See specific directions for use for Tomatoes</b>	Powdery mildew ( <i>Sphaerotheca</i> spp.) Anthracnose ( <i>Colletotrichum</i> spp.)	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Rhizoctonia seedling rot ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 61.5 fl. oz. of product/A/season.

Do not apply more than 1.0 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

2/5

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Pistachios	Alternaria late blight <i>(Alternaria alternata)</i> Botryosphaeria panicle and shoot blight <i>(Botryosphaeria dothidea)</i> Septoria leaf spot <i>(Septoria pistaciarum)</i>	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on 7-21 day intervals following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

Do not apply within 7 days of harvest (7 day PHI).



Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Potatoes	Early blight <i>(Alternaria solani)</i> Late blight <i>(Phytophthora infestans)</i> Black dot <i>(Colletotrichum coccodes)</i> Powdery mildew <i>(Erysiphe cichoracearum)</i>	6.2-20.3 (0.10-0.33)	<p><b>Early blight</b> - For a 7-day application schedule, use Abound 6.2 fl. oz. product/A. For a 14-day application schedule, use the 12.0 fl. oz. product/A rate.</p> <p><b>Late blight</b> - Apply Abound at 12.0 fl. oz. product/A on a 7-day schedule. Initiate late blight applications in a preventative schedule prior to disease development according to local practices. If late blight symptoms develop or conditions favor disease, switch immediately to a non-Group 11 fungicide, using a 5-day schedule. Addition of a spreader/sticker may improve coverage.</p> <p>For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Use the high rate and the shorter interval if disease epidemics are severe. Applications may be made by ground, air or chemigation.</p> <p>Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>
	<b>Soilborne Diseases</b> Black scurf <i>(Rhizoctonia solani)</i> Silver scurf <i>(Helminthosporium solani)</i> Black dot <i>(Colletotrichum coccodes)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

- Do not apply more than 123 fl. oz. of product/A/season.
- Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.
- Do not apply within 14 days of harvest (14 day PHI).

8/15

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Rice	<b>Sheath/Stem Diseases</b> Sheath blight <i>(Rhizoctonia solani)</i>	6.0-18.5 (0.10-0.30)	<b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, optimum plant populations, proper fertilization, plant residue management, crop rotation, and sound water management practices.
	Aggregate sheath spot <i>(Ceratobasidium oryzae-sativae = Rhizoctonia oryzae-sativae)</i> Black sheath rot <i>(Gaeumannomyces graminis var. graminis)</i> Sheath spot <i>(Rhizoctonia oryzae)</i> Stem rot <i>(Magnaporthe salvinii = Sclerotium oryzae = Nakateae sigmoidea)</i>	9.0-18.5 (0.15-0.30)	
	<b>Foliar Diseases</b> Brown leaf spot <i>(Cochliobolus miyabeanus)</i> Leaf smut <i>(Entyloma oryzae)</i> Narrow brown leaf spot <i>(Cercospora janseana = Cercospora oryzae)</i>		<b>Application Directions:</b> Abound should be applied prior to disease development. Applications may be made by ground, air or chemigation. For aerial application, volumes should be 5-10 GPA. An adjuvant may be added at specified rates.
	<b>Panicle Diseases</b> Kernel smut <i>(Tilletia barclayana = Neovossia barclayana)</i> Panicle blast <i>(Pyricularia grisea)</i>		For sheath blight control, application rates may vary from 9.0 to 12.0 fl. oz./A depending on the growth stage of the rice and the severity of the disease. Consult with your local extension personnel or Syngenta representative for the Syngenta Technical Bulletin on sheath blight control.
			For other stem/sheath diseases including stem rot, black sheath rot, aggregate sheath spot and sheath spot, apply when disease is less than 4 inches above water line usually between panicle differentiation (PD) +5 days to PD +10 days or at initial sign of disease. Under heavy disease pressure and conditions favorable for disease development, a second application may be applied.
			For foliar and panicle diseases, apply Abound prior to disease development. Abound must be applied as a preventative treatment for blast control and applied prior to favorable conditions for blast development. For panicle blast, an application should be applied at mid-boot to boot-split but prior to full head emergence. A second application should be applied when panicles are approximately 60-90% emerged from the boot (7-14 days later).

**Specific Use Restrictions:**

Do not treat rice fields used for aquaculture of fish and crustaceans.

Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat. Applicators should use care in making applications near non-target aquatic habitats.

Do not apply more than 0.70 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 28 days of harvest.

Do not allow release of irrigation or flood water for at least 14 days after the last application.

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Sorghum	Anthracnose ( <i>Colletotrichum graminicola</i> ) Charcoal rot ( <i>Macrophomina phaseolina</i> ) Gray leaf spot ( <i>Cercospora sorghi</i> )	6.0-15.5 (0.10-0.25)	<p><b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, optimum plant populations, proper fertilization, plant residue management, crop rotation and proper timing and placement of irrigation.</p> <p><b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p><b>Application Directions:</b> Abound applications should begin prior to disease development. Use the high rates under conditions favorable for severe disease pressure, dense plant canopies, or when susceptible varieties are planted. Contact Extension personnel for local economic thresholds and timings for specific diseases in your area. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.</p> <p>Charcoal rot: Disease control may be enhanced by an in-furrow application of Abound as described below.</p>
	<b>Soilborne Diseases</b> Damping-off ( <i>Rhizoctonia solani</i> , <i>Pythium aphanadermatum</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

For grain and stover, do not apply more than 0.75 lb. a.i./A per season of azoxystrobin-containing products.

For forage, do not apply more than 0.5 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 14 days of harvest.

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Soybeans	Aerial blight ( <i>Rhizoctonia solani</i> ) Anthracnose ( <i>Colletotrichum truncatum</i> ) Alternaria leaf spot ( <i>Alternaria</i> spp.) Brown spot ( <i>Septoria glycines</i> ) Cercospora blight and leaf spot ( <i>Cercospora kikuchii</i> ) Frog-eye leaf spot ( <i>Cercospora sojina</i> ) Pod and stem blight ( <i>Diaporthe phaseolorum</i> ) Rust ( <i>Phakopsora</i> spp.)	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development. Use the high rates under conditions favorable for severe disease pressure, dense plant canopies, or when susceptible varieties are planted. Contact Extension personnel for local economic thresholds and timings for specific diseases in your area. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Use of a crop oil concentrate or non-ionic surfactant with the lower use rate is recommended.  Soybean rust: Abound may be used at 4 fl. oz./A when tank mixed with a triazole registered for use on soybean rust.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Southern blight ( <i>Sclerotium rolfsii</i> ) Rhizoctonia solani ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not make more than one application at 15.5 fl. oz. product/acre or 0.25 lb. a.i./A to soybean forage and hay.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

Do not apply within 14 days of harvest (14 day PHI) of soybeans (beans).

May be applied the day of harvest to soybean forage and hay.

8/25

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Stone Fruits</b>  Apricot Cherry, sweet Cherry, tart Nectarine Peach Plum Plumcot Prune	Brown rot blossom blight and Fruit rot ( <i>Monilinia fructicola</i> , <i>M. laxa</i> )	12.0-15.5 (0.20-0.25)	For brown rot blossom blight, begin applications at early bloom and continue through petal fall. For brown rot on fruit, Abound may be applied to fruit up to the day of harvest.
	Scab ( <i>Cladosporium carpophilum</i> ) Alternaria spot and fruit rot ( <i>Alternaria alternata</i> ) Anthracnose ( <i>Colletotrichum prunicola</i> , <i>C. gloeosporioides</i> ) Leaf rust ( <i>Tranzschelia discolor</i> ) Powdery mildew ( <i>Sphaerotheca pannosa</i> , <i>Podosphaera clandestina</i> ) Shot hole ( <i>Wilsonomyces carpophilus</i> )	6.2-15.4 (0.10-0.25)	For scab, begin applications at petal fall and continue at 7-14 day intervals.  For all other diseases, begin application at the onset of disease as a protectant fungicide and continue on a 7-14 day schedule.  For peaches only, 9.0-15.5 fl. oz. of Abound may be used for scab control.  Applications may be made by ground, air or chemigation.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Strawberry	Anthracnose <i>(Colletotrichum fragariae)</i> Powdery mildew <i>(Sphaerotheca macularis)</i>  Suppression of Botrytis on the foliage <i>(Botrytis cinerea)</i>	6.2-15.4 (0.10-0.25)	<p><b>Application Directions:</b> Abound applications should begin prior to disease development and continue throughout the season on a 7-10 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.</p> <p><b>For dip applications at transplanting for commercial berry production:</b> For suppression of root and crown rot caused by <i>Colletotrichum</i> spp., mix 5-8 fl. oz. of Abound per 100 gals. of water. Dip plants for 2-5 minutes. Plant treated plants as quickly as possible. It is recommended that transplants be washed to remove excess soil prior to dipping. For continued anthracnose control, follow with foliar applications beginning 2-3 weeks after transplant.</p> <p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p>
	Leather rot <i>(Phytophthora cactorum)</i>	6.0-15.5 (0.1-0.25)	<b>Apply 2 applications on a 7-day schedule from late bloom through harvest.</b>
	<b>Soilborne Diseases</b> Seedling root rot, basal stem rot <i>(Rhizoctonia solani)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

- Do not apply more than 61.5 fl. oz. of product/A/season.
- Do not apply more than 1.0 lbs. a.i./A per season of azoxystrobin-containing products.
- May be applied the day of harvest (0 day PHI).
- Do not use in plant propagation nurseries.

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Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Tobacco	Blue mold ( <i>Peronospora tabacina</i> ) Frogeye leaf spot ( <i>Cercospora nicotianae</i> ) Target spot ( <i>Rhizoctonia solani</i> )	6.0-12.0 (0.1-0.2)	<p>Abound applications should begin prior to disease development or at first indication that blue mold is in the area. Do not apply Abound as a curative application. If blue mold is present in the field, initiate applications with Acrobat MZ<sup>®</sup> prior to a Abound application. Apply on a 7-14 day interval with shorter intervals under conditions conducive to disease development. For ground applications, apply Abound in sufficient water volume for adequate coverage and canopy penetration. For aerial application, volumes should be 10-15 GPA. Applications may be made by ground, air or chemigation. Do not apply Abound on greenhouse seedlings. Do not tank mix with Thiodan. Tank mixing Abound with insecticides formulated as ECs or containing high amounts of solvents, may cause some crop injury</p> <p>Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p>NOTE: Abound may enhance weather flecking on the leaves of certain tobacco types. This does not affect yield and quality.</p>

**Specific Use Restrictions:**

Do not apply more than 32 fl. oz. of product/A/season.

Do not apply more than 0.52 lb. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Tomatoes	Anthracnose <i>(Colletotrichum coccodes)</i> Black mold <i>(Alternaria alternata)</i> Buckeye rot <i>(Phytophthora spp.)</i> Early blight <i>(Alternaria solani)</i> Powdery mildew <i>(Oidiopsis sicula)</i> Septoria leaf spot <i>(Septoria lycopersici)</i> Target spot <i>(Corynespora cassiicola)</i>	5.0-6.2 (0.08-0.10)	Abound applications should begin prior to disease development and continue throughout the season following the resistance management guidelines. For late blight, Abound should be applied at 5-7 day intervals. For all other tomato diseases, Abound should be applied on 7-21 day intervals. Applications may be made by ground, air or chemigation.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.  Use of an adjuvant may result in severe phytotoxicity.
	Late blight <i>(Phytophthora infestans)</i>	6.2 (0.10)	

**Specific Use Restrictions:**

Do not apply more than 37 fl. oz. of product/A/season.

Do not apply more than 0.6 lb. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).



Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<p><b>Tree Nuts</b></p> <p>Beechnut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert Hickory Macadamia Pecan Walnut</p> <p>Almonds, Pistachios (see specific use instructions)</p>	<p>Alternaria leaf and fruit spot (<i>Alternaria alternata</i>) Anthracnose (<i>Colletotrichum acutatum</i>, <i>Glomerella cingulata</i>) Late blight (<i>Alternaria alternata</i>) Scab (<i>Cladosporium carpophilum</i>) Septoria leaf spot (<i>Septoria pistaciarum</i>) Shothole (<i>Wilsonomyces carpophilus</i>) Eastern filbert blight (<i>Anisogramma anomale</i>)</p> <p>Blossom blight (<i>Monilinia laxa</i>, <i>M. fructicola</i>)</p>	<p>6.2-12.3 (0.10-0.20)</p> <p>12.0 (0.20)</p>	<p>Abound applications should begin prior to disease development and continue throughout the season following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.</p> <p>For all other diseases begin applications prior to disease development and continue at 7-21 day intervals throughout the season.</p> <p>Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.</p> <p>For blossom blight, begin applications at early bloom and continue through petal fall.</p>

**Specific Use Restrictions:**

Do not apply more than 73.8 fl. oz. of product/A/season.  
Do not apply more than 1.2 lbs. a.i./A per season of azoxystrobin-containing products.  
Do not apply within 45 days of harvest (45 day PHI).

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Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Tropical Fruit</b>  Acerola Atemoya Avocado Biriba Canistel Cherimoya Custard apple Feijoa Guava Ilima Jaboticaba Jackfruit Longan Loquat Lychee Mango Papaya Passionfruit Pawpaw Persimmon Pulasan Rambutan Sapodilla Sapote, black Sapote, mamey Sapote, white Soursop Star apple Starfruit Sugar apple Spanish lime Tamarind	Anthracnose ( <i>Colletotrichum</i> spp.) Rust ( <i>Puccinia</i> spp.) Cercospora leaf spot ( <i>Cercospora</i> spp.) Powdery mildew ( <i>Erysiphe</i> spp.)	6.2-15.4 0.10-0.25	Abound applications should begin prior to disease development and continue throughout the season on a 10-14 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	<b>Soilborne Diseases</b> Seedling root rot, basal stem rot ( <i>Rhizoctonia solani</i> )	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 92.3 fl. oz. of product/A/season.  
 Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.  
 May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Vegetables, leaves of root and tuber, group and root subgroup</b>  Beet, garden and sugar <sup>1,2</sup> Burdock <sup>1,2</sup> Carrot <sup>1,2</sup> Cassava, bitter and sweet <sup>1</sup> Celeriac (celery root) <sup>1,2</sup> Chervil, turnip-rooted <sup>1,2</sup> Chicory <sup>1,2</sup> Dasheen (taro) <sup>1</sup> Ginseng <sup>2</sup> Horseradish <sup>2</sup> Parsley, turnip-rooted <sup>2</sup> Parsnip <sup>1,2</sup> Radish <sup>1,2</sup> Radish, oriental (daikon) <sup>1,2</sup> Rutabaga <sup>1,2</sup> Salsify <sup>2</sup> Salsify, black <sup>1,2</sup> Salsify, Spanish <sup>2</sup> Skirret <sup>2</sup> Sweet potato <sup>1</sup> Tanier <sup>1</sup> Turnip <sup>1,2</sup> Yam, true <sup>1</sup>	<b>Foliar Diseases</b> Alternaria leaf spot <i>(Alternaria spp., A. alternata)</i> Ascochyta leaf spot <i>(Ascochyta cynarae)</i> Rust <i>(Uromyces betae, Puccinia helianthi)</i> White rust <i>(Albugo tragopogonis)</i>	6.2-20.0 (0.10-0.33)	For powdery mildew, make preventative applications on a 5-7 day schedule. For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Cercospora leaf spot <i>(Cercospora betae, C. pastinaceae)</i> Powdery mildew <i>(Erysiphe polygoni, Leveillula taurica)</i>	9.0-15.5 (0.15-0.25)	
	<b>Soilborne Diseases</b> Circular spot, Southern blight <i>(Sclerotium rolfsii)</i> Rhizoctonia stem canker, Crown rot <i>(Rhizoctonia solani)</i> Pythium root rot <i>(Pythium aphanidermatum)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

<sup>1</sup> = Vegetable leaves of root and tuber subgroup

<sup>2</sup> = Root vegetable subgroup

**Specific Use Restrictions:**

Do not apply more than 123 fl. oz. of product/A/season.

Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.

May be applied the day of harvest (0 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
<b>Vegetables, tuberous and corm, subgroup</b>  Arracacha Arrowroot Artichoke, Chinese and Jerusalem Canna, edible Cassava, edible, bitter and sweet Chayote (root) Chufa Dasheen (Taro) Ginger Leren Potato Sweet Potato Tanier Turmeric Yam, bean Yam, true	<b>Foliar Diseases</b> Alternaria leaf spot <i>(Alternaria spp., A. Alternata)</i> Ascochyta leaf spot <i>(Ascochyta cynarae)</i> Rust <i>(Uromyces betae, Puccinia helianthi)</i> White rust <i>(Albugo tragopogonis)</i>	6.2-20.3 (0.10-0.33)	For powdery mildew, make preventative applications on a 5-7 day schedule. For all other diseases, Abound applications should begin prior to disease development and continue throughout the season every 7-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than one application of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Cercospora leaf spot <i>(Cercospora betae, C. pastinaceae)</i> Powdery mildew <i>(Erysiphe polygoni, Leveillula taurica)</i>	9.0-15.5 (0.15-0.25)	
	<b>Soilborne Diseases</b> Circular spot, Southern blight <i>(Sclerotium rolfsii)</i> Rhizoctonia stem canker, Crown rot <i>(Rhizoctonia solani)</i> Pythium root rot <i>(Pythium aphanidermatum)</i>	0.40-0.80 fl. oz./1000 row feet	For soilborne/seedling disease control, see directions and rates under <b>GENERAL INFORMATION</b> section.

**Specific Use Restrictions:**

Do not apply more than 123 fl. oz. of product/A/season.  
 Do not apply more than 2.0 lbs. a.i./A per season of azoxystrobin-containing products.  
 Do not apply within 14 days of harvest (14 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Watercress	Cercospora leaf spot ( <i>Cercospora</i> spp.)	6.2-15.4 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7-10 day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.  Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

**Specific Use Restrictions:**

Do not apply more than 93.2 fl. oz. of product/A/season.

Do not apply more than 1.5 lbs. a.i./A per season of azoxystrobin-containing products.

Do not apply within 7 days of harvest (7 day PHI).

Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Wheat Triticale	Leaf rust <i>(Puccinia triticina = Puccinia recondita f.sp. tritici)</i> Stripe rust <i>(Puccinia striiformis)</i> Stem rust <i>(Puccinia graminis)</i> Septoria leaf and glume blotch <i>(Septoria tritici, Septoria nodorum)</i> Tan spot <i>(Pyrenophora tritici-repentis)</i>	4.0-12.0 (0.07-0.20)	<p><b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes proper selection of varieties with disease tolerance, proper timing and placement of irrigation, removal of plant debris in which inoculum overwinters, plant residue management, and crop rotation.</p> <p><b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. Do not make more than two (2) applications of Abound or other Group 11 fungicide per season.</p> <p><b>Application Directions: For Wheat Only:</b> Abound should be applied prior to disease development up to late head emergence (Feekes 10.5 or Zadok's 59). Applications may be made by ground, air or chemigation. A crop oil concentrate adjuvant may be added at 1.0% v/v to optimize efficacy.</p>
	Powdery mildew <i>(Erysiphe graminis)</i>	7.5-11.0 (0.125-0.175)	

**Specific Use Restrictions:**

**For Wheat Only:** Do not apply later than Feekes growth stage 10.5 (Zadok's growth stage 59).  
 Do not apply more than 0.40 lb. a.i./A per season of azoxystrobin-containing products.  
 Do not apply within 14 days of harvest for forage and hay.  
 Do not apply within 45 days of harvest for grain and straw.

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Crop	Target Diseases	Use Rate fl. oz. product/A (lbs. a.i./A)	Remarks
Wild Rice	Brown spot <i>(Bipolaris oryzae or Bipolaris sorokiana)</i>  Also known as <i>Helminthosporium oryzae</i> and <i>H. sativum</i>  Stem rot <i>(Nakataea sigmoidea)</i>	12.5-15.5 (0.20-0.25)	<p><b>Integrated Pest (Disease) Management:</b> Abound should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, optimum plant populations, proper fertilization, plant residue management, crop rotation, and sound water management practices.</p> <p><b>Resistance Management:</b> Follow the resistance management guidelines in the Resistance Management Section. When Abound is being applied for panicle blast on continuous rice acreage (no rotation to other crops), no more than two sequential foliar applications of Abound or other Group 11 fungicides should be made over multiple years before alternating with a fungicide with a different mode of action. Do not make more than two foliar applications of Abound or other Group 11 fungicides per acre per season.</p> <p><b>Application Directions:</b> Abound should be applied prior to disease development. Applications may be made by ground, air, or chemigation. For aerial application, volumes should be 5-10 GPA. An adjuvant may be added at specified rates.</p> <p>For foliar diseases, apply Abound prior to disease development. Apply during tillering, boot, early heading, or at initial sign of disease. Under heavy disease pressure and conditions favorable for disease development, a second application may be applied.</p>

**Specific Use Restrictions:**

Do not treat wild rice fields used for aquaculture of fish and crustaceans.

Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat. Applicators should use care in making applications near non-target aquatic habitats.

Do not apply more than 0.70 lb. a.i./A per season of azoxystrobin-containing products.

Do not apply within 28 days of harvest.

Do not allow release of irrigation or flood water for at least 14 days after the last application.

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**Abound Rate Conversion Chart**

<b>Fluid Ounces Product/A</b>	<b>Lb. a.i./A</b>	<b>Treated Acres/ Gal. Product</b>
4.0	0.07	32.0
5.0	0.08	25.6
5.5	0.09	23.2
6.0	0.10	21.3
6.2	0.10	21.3
7.0	0.11	18.3
8.5	0.14	15.4
9.0	0.15	14.2
9.2	0.15	14.2
10.0	0.16	13.0
11.0	0.18	11.6
12.0	0.20	10.4
12.3	0.20	10.4
13.0	0.21	9.8
14.0	0.23	9.1
15.4	0.25	8.3
15.5	0.25	8.3
18.3	0.30	6.9
18.5	0.30	6.9
20.0	0.33	6.4
20.3	0.33	6.4
24.5	0.40	5.2



**POST HARVEST APPLICATIONS**

Crop	Target Diseases	Use Rate	Remarks								
<b>Bananas</b> <b>Plantains</b>	Crown Rot/Crown Mold <i>(Colletotrichum musae,</i> <i>Fusarium pallidoroseum,</i> <i>Acremonium spp.,</i> <i>Ceratocystis paradoxa,</i> <i>Glomerella cingulata,</i> <i>Penicillium spp.)</i>	200-400 ppm solution	Apply Abound as a single application of a 200-400 ppm solution to achieve good coverage. The application may be made as a spray, dip or may be painted onto the cut ends of the bananas. Application of the 200 ppm rate is appropriate for short distance transportation (e.g. within the USA). When a longer time in transport is expected (export), use the 300-400 ppm rate. If alum (1% w/v) is added to the spray solution, stir the suspension frequently as sedimentation and flocculation may occur. Addition of a non-ionic surfactant (0.10% v/v) may improve the compatibility of this mixture.  <b>Amount of Abound to Mix 100 Gallons for Post-Harvest Banana Applications</b> <table border="1"> <thead> <tr> <th>Abound Use Rate</th> <th>100.0 gals. Spray Solution</th> </tr> </thead> <tbody> <tr> <td>200 ppm</td> <td>11 fl. oz.</td> </tr> <tr> <td>300 ppm</td> <td>15 fl. oz.</td> </tr> <tr> <td>400 ppm</td> <td>21 fl. oz.</td> </tr> </tbody> </table>	Abound Use Rate	100.0 gals. Spray Solution	200 ppm	11 fl. oz.	300 ppm	15 fl. oz.	400 ppm	21 fl. oz.
Abound Use Rate	100.0 gals. Spray Solution										
200 ppm	11 fl. oz.										
300 ppm	15 fl. oz.										
400 ppm	21 fl. oz.										

**Specific Use Restrictions:**

Do not make more than one application to bananas as post-harvest treatment.  
 Abound may be degraded by exposure to direct sunlight. Do not store treated fruit in direct sunlight.

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Crop	Target Diseases	Use Rate	Remarks
<p><b>Citrus Fruit</b></p> <p>Calamondin                      Citron                      Citrus hybrids                      Grapefruit                      Kumquat                      Lemon                      Lime                      Mandarin                      Orange (sour and sweet)                      Pummelo                      Satsuma mandarin                      Tangerine                      Uniq fruit hybrid                      Including all cultivars and/or hybrids of these</p>	<p>Penicillium Decays                      Green mold, Whisker mold, suppression of Blue mold                      (<i>Penicillium</i> spp.)                      Diplodia stem-end rot                      (<i>Diplodia natalensis</i>)                      Phomopsis stem-end rot                      (<i>Phomopsis citrii</i>)</p>	<p>See Remarks</p>	<p>Use Abound as a dip, drench, flood, or spray for the control of certain post-harvest diseases.</p> <p><b>For high volume (dilute) applications:</b> Mix 32-64 fl. oz. of Abound in 25-100 gal. of an appropriate water, wax/oil emulsion, or aqueous dilution of a wax/oil emulsion for the crop being treated. Use T-Jet, flooders, or similar application systems.</p> <p><b>For low volume (concentrate) applications:</b> Mix 32-64 fl. oz. of Abound in 7-25 gal. of water, wax/oil emulsion, or aqueous dilution of wax/oil emulsion for the crop being treated. Apply to 250,000 lbs. of fruit. Use a controlled-droplet type of applicator or similar system.</p> <p><b>For dip applications:</b> Mix 32-64 fl. oz. of Abound in 100 gal of water, wax/oil emulsion, or aqueous dilution of wax/oil emulsion. Dip for approximately 30 seconds and allow fruit to drain. For maximum decay control, treat citrus fruit once before storage and once after storage, just prior to marketing.</p>

**Specific Use Restrictions:**

Do not make more than two applications to citrus fruit as post-harvest treatments.  
 Abound may be degraded by exposure to direct sunlight. Do not store treated fruit in direct sunlight.

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## **STORAGE AND DISPOSAL**

### **Prohibitions**

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

### **Pesticide Storage**

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

### **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 of the nearest EPA Regional Office for guidance.

### **Container Handling [less than 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and 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 incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### **Container Handling [Bulk/Mini-Bulk]**

Refillable container. Refill this container with Abound only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and 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 incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.**

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For non-emergency (e.g., current product information) call  
Syngenta Crop Protection at 1-800-334-9481.

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