



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

June 14, 2016

Michael D. Hall  
Product Registration Manager  
BASF Corporation  
26 Davis Drive  
P.O. Box 13528  
Research Triangle Park, NC 27709

Subject: Label Amendment – Update Master Label (Add Approved Uses)  
Product Name: Xemium 2.78 Fungicide ST  
EPA Registration Number: 7969-307  
Application Date: March 15, 2016  
Decision Number: 515170

Dear Mr. Hall:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

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

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

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Driss Benmhend by phone at (703) 308-9525, or via email at [Benmhend.driss@epa.gov](mailto:Benmhend.driss@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Shaja B. Joyner" followed by a stylized flourish.

Shaja B. Joyner, Product Manager 20  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure



We create chemistry

Group **7** Fungicide

<b>A C C E P T E D</b>
06/14/2016
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 7969-307

# Xemium® 2.78

fungicide ST

**For commercial and on-farm use**

**Seed treatment for barley, brassica vegetables, bulb vegetables, corn, cotton, cucurbit vegetables, dried shelled peas and beans, edible podded legume vegetables, leafy vegetables, oat, peanut, rapeseed, rice, root and tuber vegetables, rye, sorghum, soybean, sugar beet, sunflower, triticale and wheat**

Powered by **Xemium® fungicide**

**Active Ingredient:**

fluxapyroxad*: 1 <i>H</i> -Pyrazole-4-carboxamide, 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluoro[1,1'-biphenyl]-2-yl)- . . . . .	28.78%
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<b>Other Ingredients:</b> . . . . .	<u>71.22%</u>
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<b>Total:</b> . . . . .	100.00%
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\* Equivalent to 2.78 pounds of active ingredient per gallon

**EPA Reg. No. 7969-307**

**EPA Est. No.**

**KEEP OUT OF REACH OF CHILDREN  
CAUTION/PRECAUCION**

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

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

**Net Contents:**

BASF Corporation  
26 Davis Drive, Research Triangle Park, NC 27709

## FIRST AID

### If swallowed

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- **DO NOT** induce vomiting unless told to by a poison control center or doctor.
- **DO NOT** give anything to an unconscious person.

## HOTLINE NUMBER

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

## Precautionary Statements

### Hazards to Humans and Domestic Animals

**CAUTION.** Harmful if swallowed.

### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, natural rubber\*  $\geq$  14 mils, polyethylene, polyvinyl chloride (PVC)  $\geq$  14 mils, or viton  $\geq$  14 mils
- Shoes plus socks

\* Includes natural rubber blends and laminates

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

### Engineering Controls Statement

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

## USER SAFETY RECOMMENDATIONS

### Users should:

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

### Environmental Hazards

This pesticide is toxic to fish and aquatic invertebrates. Runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Treated seed exposed on the soil surface may be hazardous to birds and other wildlife. Cover or incorporate all treated seed. For terrestrial uses, **DO NOT** contaminate water when disposing of equipment washwaters, rinsate, or treated seed.

**DO NOT** discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. **DO NOT** discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or the regional office of the EPA.

### Groundwater Advisory

This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

### Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water.

This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of fluxapyroxad from runoff water and sediment. Runoff of this product will be reduced by avoiding the planting of treated seed when rainfall or irrigation is expected to occur within 48 hours.

## Directions For Use

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

**Xemium® 2.78 fungicide ST is not for sale, distribution, or use in Nassau and Suffolk counties in New York State.**

## 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 **12 hours**.

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

- Coveralls
- Chemical-resistant gloves (made of any waterproof material)
- Shoes plus socks

## STORAGE AND DISPOSAL

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

### Pesticide Storage

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

### Pesticide Disposal

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

### Container Handling

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

**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

## STORAGE AND DISPOSAL *(continued)*

### Container Handling *(continued)*

**Triple rinse containers too large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

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

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% 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.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

## In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

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

- In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.
- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

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## Product Information

**Xemium® 2.78 fungicide ST** is a broad-spectrum fungicide that provides preventive seed and seedling protection from several seed and soilborne diseases. Make all applications according to the use directions in this label. Use the higher rates of **Xemium 2.78** when disease pressure is expected to be high.

**Xemium 2.78** is a suspension concentrate (SC) formulation and contains a red dye. This dye will impart an unnatural color to the seed for the purpose of preventing accidental use as food for man or feed for animals.

## Resistance Management

Fluxapyroxad, the active ingredient of **Xemium 2.78**, belongs to the group of respiration inhibitors classified by the U.S. EPA and Canada PMRA as a target site of action **Group 7** fungicide. Due to the minimal amounts of **Xemium 2.78** applied to the seed, the potential for development of resistance is low. Seed treatments of **Xemium 2.78**, therefore, can be followed by foliar use, and resistance management guidelines of foliar use fungicides containing fluxapyroxad as specified on the respective labels should be followed.

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## Application Instructions

### For use in commercial seed treatment facilities and on-farm systems.

Apply **Xemium 2.78** as a water-based mixture using standard slurry or mist-type seed treatment application equipment. The exact amount of water needed to provide the mixture or slurry rate (ml/100 kg or oz/cwt of seed) for optimum coverage is difficult to predict because weather conditions (hot or cold), seed type and surface, and

equipment used all have a bearing on coverage. Consult a seed treatment specialist regarding slurry rates recommended for the crop seed to be treated with **Xemium 2.78**. The required amount of **Xemium 2.78** must then be diluted with the specified amount of water that will provide uniform and complete coverage on the seed surface. Uniform application on seed and complete seed coverage are necessary for seed safety and best disease protection. Seed must be of a good quality and well cleaned prior to treatment.

Consult the seed treatment specialist for calibration and operation procedures of the seed treatment equipment being used. Mechanical agitation is required for proper mixing of **Xemium 2.78**. Prepare no more mixture of **Xemium 2.78** than is needed for immediate treating. Add 3/4 of the required volume of water to the mix tank. With agitation running, add the required amount of **Xemium 2.78** in the tank along with other seed treatment components. Add the remaining 1/4 amount of the required volume of water. Use the mixing sequence that follows. Agitate thoroughly before and during application.

## Xemium 2.78 With Tank Mix Partners

**Xemium 2.78** mixes easily with water and other water-based seed treatments. When using **Xemium 2.78** in a tank mixture with seed treatment products, observe all directions for use, crops/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix partner label. Label dosage or application rate must not be exceeded, and the most restrictive label precautions and limitations must be followed. **Xemium 2.78** must not be mixed with any product that prohibits such mixing. All applications must be made according to the use directions.

When mixing **Xemium 2.78** with seed treatment products, test the compatibility prior to use by conducting a jar test as follows:

1. Mix all intended seed treatments with the appropriate amount of water in a clear glass container.
2. Mix well and allow to sit for 1 hour.
3. Remix and observe for incompatibility.

Physical compatibility is only part of compatibility. Testing also needs to be done with the seed to make sure the combination of products does not have detrimental effects on the seed.

## Tank Mixing Instructions

1. Add 3/4 of the required amount of water to the mix tank and turn on the agitation. Mechanical agitation is preferred.
2. Use the following mixing sequence: wettable powders, soluble powders, flowable formulations, emulsifiable concentrates, and remaining 1/4 of the required water. The 1/4 of the required water as the last item for addition to the premix tank can be used as rinsate for the chemical container or to adjust the total slurry to compensate for water displacement by powdered products.
3. Maintain agitation until the entire slurry mixture has been used.
4. Ensure that seed is dry prior to bagging.

## SEED LABELING NOTE

Federal law requires that bags of treated seed be labeled with the following information:

**“This seed has been treated with Xemium® 2.78 fungicide containing fluxapyroxad. DO NOT use treated seed for food, feed or oil purposes. Store treated seed away from food and feedstuffs. DO NOT allow children, pets or livestock to have access to treated seed. Wear long pants, long-sleeved shirt and protective gloves when handling treated seed.**

**Treated seed exposed on soil surfaces may be hazardous to wildlife. Plant treated seed into the soil to the recommended minimum depth or greater to minimize exposure. For cotton, the minimum depth is 1/2 inch. For sugar beet, the minimum depth is 1 inch. For sugar beet, DO NOT apply more than 0.02 lb of active ingredient per acre. Cover or collect treated seed spilled during loading and planting, in particular at row ends and field corners.**

**Dispose of all excess treated seed by burying seed away from bodies of water. DO NOT contaminate bodies of water when disposing of planting equipment washwater. Dispose of seed packaging or containers in accordance with local requirements. Excess treated seed may be used for ethanol production only if (1) by-products are not used for livestock feed and (2) no measurable residues of pesticide remain in ethanol by-products that are used in agronomic practice.**

**In the event of crop failure or harvest of a crop grown from this seed, the field may be replanted immediately with barley, berries and small fruits, Brassica leafy vegetables, bulb vegetables, corn (all types), cotton, cucurbit vegetables, dried shelled peas and beans, edible-podded legume vegetables, fruiting vegetables, grapes, leafy vegetables, mint (spearmint and peppermint), nongrass animal feeds (forage, fodder, straw, and hay), oat, oilseed crops (including flax seed, rapeseed and sunflower), peanut, pome fruits, rice, root vegetables, rye, sorghum and millet, soybean, stone fruits, strawberries, succulent shelled peas and beans, sugar beet, sugarcane, tree nuts, tuberous and corm vegetables (including potato), wheat and triticale or any other crop for which a tolerance for fluxapyroxad exists. For all other crops, the minimum plant back interval is 12 months from the date this seed was planted. A cover crop without a tolerance for fluxapyroxad may be planted for purposes of erosion control or soil improvement; however, the crop must not be grazed or harvested for food or feed.”**

## Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment

Crop	Target Disease	Product Use Rate ml/100 kg seed (gram ai/100 kg seed)	Product Use Rate fl ozs/100 lbs seed (lb ai/100 lbs seed)
<b>Barley</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp. and <i>Microdochium</i> spp.	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01)
	Early Season suppression of powdery mildew ( <i>Blumeria graminis</i> ), rust ( <i>Puccinia</i> spp.), net blotch ( <i>Pyrenophora teres</i> ) and scald ( <i>Rhynchosporium secalis</i> )	77 to 153 (25 to 50)	1.15 to 2.30 (0.025 to 0.05)
<b>Brassica vegetables (includes head and stem and brassica leafy greens)</b>  Broccoli Broccoli, Chinese Broccoli raab Brussels sprouts Cabbage Cabbage, Chinese Cabbage, Chinese mustard Cauliflower Cavalo broccolo Collards Kale Kohlrabi Mizuna Mustard greens Mustard spinach Rape greens	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i> , <i>Phoma lingam</i> and other seedborne fungi causing seed decay, seedling damping-off	60 to 120 (20 to 40)	0.92 to 1.85 (0.02 to 0.04)
<b>Bulb vegetables</b>  Garlic Leek Onions (all varieties) Shallot	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i> , and seedborne fungi ( <i>Botrytis</i> , <i>Aspergillus</i> and <i>Penicillium</i> spp.) causing seed decay, seedling damping-off	60 to 120 (20 to 40)	0.92 to 1.85 (0.02 to 0.04)
	Onion Smut <i>Urocystis cepulae</i> and <i>U. colchici</i>	375 to 750 (125 to 250)	5.77 to 11.54 (0.125 to 0.25)

(continued)



**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

<b>Crop</b>	<b>Target Disease</b>	<b>Product Use Rate</b> ml/100 kg seed (gram ai/100 kg seed)	<b>Product Use Rate</b> fl ozs/100 lbs seed (lb ai/100 lbs seed)
<b>Corn (field, popcorn, seed corn production)</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01) <sup>1</sup>
	Early season suppression of common rust ( <i>Puccinia sorghi</i> ), Gray leaf spot ( <i>Cercospora zea-maydis</i> ), Northern leaf blight ( <i>Exserohilum turcicum</i> ) and Southern leaf blight ( <i>Bipolaris maydis</i> )	77 to 153 (25 to 50)	1.15 to 2.30 (0.025 to 0.05) <sup>1</sup>
<b>Corn (sweet)</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	31 to 61 (10 to 20)	0.46 to 0.92 (0.01 to 0.02) <sup>2</sup>
	Early season suppression of common rust ( <i>Puccinia sorghi</i> ), Gray leaf spot ( <i>Cercospora zea-maydis</i> ), Northern leaf blight ( <i>Exserohilum turcicum</i> ) and Southern leaf blight ( <i>Bipolaris maydis</i> )	77 to 153 (25 to 50)	1.15 to 2.30 (0.025 to 0.05) <sup>2</sup>
<b>Cotton</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	60 to 120 (20 to 40)	0.91 to 1.84 (0.02 to 0.04)  (0.02 to 0.04 mg ai per seed) <sup>3</sup>
	Suppression of black root rot caused by <i>Thielaviopsis basicola</i>	120 (40)	1.84 (0.04)  (0.04 mg ai per seed) <sup>3</sup>

*(continued)*

**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

<b>Crop</b>	<b>Target Disease</b>	<b>Product Use Rate</b> ml/100 kg seed (gram ai/100 kg seed)	<b>Product Use Rate</b> fl ozs/100 lbs seed (lb ai/100 lbs seed)
<p><b>Cucurbit vegetables includes all types and hybrids of:</b></p> <ul style="list-style-type: none"> <li>Cantaloupe</li> <li>Chayote</li> <li>Chinese waxgourd</li> <li>Citron melon</li> <li>Cucumber</li> <li>Edible gourds</li> <li>Gherkin</li> <li>Muskmelon</li> <li>Pumpkin</li> <li>Summer squash</li> <li>Watermelon</li> <li>Winter squash</li> <li>Zucchini</li> </ul> <p><b>Momordica spp.</b> (such as)</p> <ul style="list-style-type: none"> <li>Balsam apple</li> <li>Balsam pear</li> <li>Bitter melon</li> <li>Chinese cucumber</li> </ul>	<p>Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>, and other seedborne fungi causing seed decay, seedling damping-off</p>	<p>60 to 120 (20 to 40)</p>	<p>0.92 to 1.85 (0.02 to 0.04)</p>

*(continued)*

**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

Crop	Target Disease	Product Use Rate ml/100 kg seed (gram ai/100 kg seed)	Product Use Rate fl ozs/100 lbs seed (lb ai/100 lbs seed)
<p><b>Dried shelled peas and beans (except soybean)</b></p> <p>Broad bean Chickpea Guar Lablab bean Lentil Pigeon pea <i>Lupinus spp.</i> Grain lupin Sweet lupin White lupin <i>Phaseolus spp.</i> Field bean Kidney bean Lima bean Navy bean Pink bean Pinto bean Tepary bean <i>Pisum spp.</i> Field pea <i>Vigna spp.</i> Adzuki bean Blackeyed pea Catjang Cowpea Crowder pea Moth bean Mung bean Rice bean Southern pea Urd bean</p>	<p>Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i></p> <p>Suppression of seed and seedling disease caused by <i>Fusarium spp.</i></p> <p>Suppression of seedborne infection of lentils by <i>Ascochyta lentis</i> and <i>Ascochyta rabiei</i></p>	<p>15 to 31 (5 to 10)</p>	<p>0.23 to 0.46 (0.005 to 0.01)</p>

*(continued)*

**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

<b>Crop</b>	<b>Target Disease</b>	<b>Product Use Rate</b> ml/100 kg seed (gram ai/100 kg seed)	<b>Product Use Rate</b> fl ozs/100 lbs seed (lb ai/100 lbs seed)
<p><b>Edible podded legume vegetables</b></p> <p>Jack bean Pigeon pea Soybean (immature seed) Sword bean <i>Phaseolus spp.</i> Runner bean Snap bean Wax bean <i>Pisum spp.</i> Dwarf pea Edible-podded pea Snowpea Sugar snap pea <i>Vigna spp.</i> Asparagus bean Chinese longbean Moth bean Yardlong bean</p>	<p>Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i></p> <p>Suppression of seed and seedling disease caused by <i>Fusarium spp.</i></p>	<p>15 to 31 (5 to 10)</p>	<p>0.23 to 0.46 (0.005 to 0.01)</p>
<p><b>Leafy vegetables</b></p> <p>Arugula Cardoon Celery Celery, Chinese Celtuce Chervil Chrysanthemum, edible-leaved and garland Corn salad Cress, garden and upland Dandelion Dock Endive Fennel, Florence Lettuce, head and leaf Orach Parsley Purslane, garden and winter Radicchio, red chicory Rhubarb Spinach Spinach, New Zealand and vine Swiss chard</p>	<p>Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>, <i>Stemphylium spp.</i>, and seedborne fungi (<i>Botrytis spp.</i>) causing seed decay, seedling damping-off</p> <p>Suppression of seed and seedling disease caused by <i>Verticillium spp.</i></p>	<p>60 to 120 (20 to 40)</p> <p>300 to 600 (100 to 200)</p>	<p>0.92 to 1.85 (0.02 to 0.04)</p> <p>4.62 to 9.23 (0.1 to 0.2)</p>

*(continued)*

**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

<b>Crop</b>	<b>Target Disease</b>	<b>Product Use Rate</b> ml/100 kg seed (gram ai/100 kg seed)	<b>Product Use Rate</b> fl ozs/100 lbs seed (lb ai/100 lbs seed)
<b>Oat</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01)
<b>Peanut</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01)
<b>Rapeseed</b> (cultivars, varieties and/or hybrids, including canola and crambe)	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of black leg ( <i>Phoma lingam</i> ), seed and seedling disease caused by <i>Fusarium</i> spp. and <i>Alternaria</i> spp.	30 to 60 (10 to 20)	0.47 to 0.92 (0.01 to 0.02)
<b>Rice</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i> , and other seedborne fungi causing seed decay, seedling damping-off	75 to 150 (25 to 50)	1.15 to 2.3 (0.025 to 0.05)
<b>Root and tuber vegetables subgroup (except sugar beet)</b>  Black salsify Carrot Celeriac Chervil, turnip-rooted Chicory Edible burdock Garden beet Ginseng Horseradish Oriental radish Parsley, turnip-rooted Parsnip Radish Rutabaga Skirret Spanish salsify Turnip	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i> , <i>Alternaria</i> spp., and other seedborne fungi causing seed decay, seedling damping-off	60 to 120 (20 to 40)	0.92 to 1.85 (0.02 to 0.04)

*(continued)*

**Xemium® 2.78 fungicide ST Crop-specific Use Directions for Seed Treatment** *(continued)*

Crop	Target Disease	Product Use Rate ml/100 kg seed (gram ai/100 kg seed)	Product Use Rate fl ozs/100 lbs seed (lb ai/100 lbs seed)
<b>Rye</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01)
<b>Sorghum</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	30 to 61 (10 to 20)	0.46 to 0.92 (0.01 to 0.02) <sup>4</sup>
<b>Soybean (<i>Glycine</i> spp.)</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp.	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01) <sup>5</sup>
<b>Sugar beet</b>	Suppression of seedling diseases caused by <i>Rhizoctonia</i> spp.	Apply 0.50 fl oz (0.011 lb ai) per unit of sugar beet seed. One unit contains 100,000 seeds and weighs approximately 1 kg (2.2 lbs).	
<b>Sunflower</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>	30 to 61 (10 to 20)	0.46 to 0.92 (0.01 to 0.02) <sup>6</sup>
<b>Wheat, Triticale</b>	Seed and seedling disease (damping-off) caused by <i>Rhizoctonia solani</i>  Suppression of seed and seedling disease caused by <i>Fusarium</i> spp. and <i>Microdochium nivale</i>	15 to 31 (5 to 10)	0.23 to 0.46 (0.005 to 0.01)
	Early Season protection from powdery mildew ( <i>Blumeria graminis</i> ), brown rust ( <i>Puccinia recondita</i> ), and Septoria leaf spot ( <i>Septoria tritici</i> )	77 to 153 (25 to 50)	1.15 to 2.30 (0.025 to 0.05)

\* mg ai per seed rates based on the following seed weights:

- <sup>1</sup> **Corn** - 1,767 seeds per pound
- <sup>2</sup> **Sweet corn** - 3,534 seeds per pound
- <sup>3</sup> **Cotton** - 4,500 seeds per pound
- <sup>4</sup> **Sorghum** - 14,500 seeds per pound
- <sup>5</sup> **Soybean** - 2,800 seeds per pound
- <sup>6</sup> **Sunflower** - 4,500 seeds per pound

## Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, 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 the presence of other or untested or unapproved materials, seed of low quality or low vigor or low germination, use of the product in a manner inconsistent with its labeling, misapplication of the product, or weather conditions at planting or environmental conditions during seed storage, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

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