

75747-3

1/12/2015

1/29



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:
75747-3

Date of Issuance:
JAN 12 2015

NOTICE OF PESTICIDE:
[X] Registration
[ ] Reregistration
(under FIFRA, as amended)

Term of Issuance:
Unconditional

Name of Pesticide Product:
ARMOUR-Zen®

Name and Address of Registrant (include ZIP Code):

Botry-Zen (2010) Limited
P.O. Box 1777
Dunedin 9054 New Zealand

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This registration does not eliminate the need for continual reassessment of the pesticide. If EPA determines at any time that additional data are required to maintain in effect an existing registration, the Agency will require submission of such data under section 3(c)(2)(B) of FIFRA. This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

- 1. Submit and/or cite all data required for of your product under FIFRA section 3(c)(5) and section 4 registration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one year study is required to satisfy these data requirements. You have 18 months from the date of registration to provide these data.

Signature of Approving Official:

[Handwritten Signature]

Linda Hollis, Chief, Biochemical Pesticides Branch
Biopesticides and Pollution Prevention Division (7511P)
Office of Pesticide Programs

Date:

1.12.15

EPA Form 8570-6

CONCURRENCES

Table with columns for SYMBOL, SURNAME, and DATE. Includes handwritten entries for 7511P, Burnett, and 1/7/15.

EPA Form 1320-1A (1/90)

OFFICIAL FILE COPY

BOX N. J. KAC

3. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 75747-3."
4. Submit one copy of the revised final printed label for the record before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

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 FIFRA and is subject to review by the Agency. If the website is false or misleading, the product will be considered to be misbranded and its sale or distribution is unlawful 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 your website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these terms are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 5/14/2014

If you have any questions, please contact Gina Burnett at (703) 605-0513 or [burnett.gina@epa.gov](mailto:burnett.gina@epa.gov).



Linda Hollis, Chief  
Biochemical Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

[Enclosure]

# ARMOUR-Zen®

**MASTER LABEL, containing:**

**Sublabel A: Greenhouse and Field Use**

**Sublabel B: Home & Garden Use**

EPA Reg. No.: (Pending as File Symbol) 75747-G

**ACCEPTED**

**JAN 12 2015**

Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for  
the pesticide registered under  
EPA Reg. No. **75 747-3**

4/2a

**Sublabel A: Greenhouse and Field Use**

**ARMOUR-Zen®**

**ACTIVE INGREDIENT:**  
 Chitosan..... 30.00%  
**OTHER INGREDIENTS:**..... 70.00%  
**TOTAL:**..... 100.00%

Product contains 2.5 lb (1134 g) of chitosan per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	

**See (back) (side) panel for additional precautionary statements and directions for use.**

**EPA Reg. No.:** (Pending as File Symbol 75747-G)  
**EPA Establishment No.:** XXXXX-XX-XX  
 (Batch No. / Lot No.: XXX)

**Net Weight:** XX lbs (XX kg)

**Manufactured by:**  
 Botry-Zen (2010) Limited  
 156 Frederick Street, P.O. Box 1777  
 Dunedin 9054  
 New Zealand  
 www.botryzen.co.nz

**Distributed by:**  
 (U.S. name and address –to be determined)

### PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals - CAUTION.** Causes moderate eye irritation. Avoid contact with eyes. Wear safety glasses or goggles. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**Personal Protective Equipment (PPE):** Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks. Follow the manufacturer's instructions for cleaning / maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**User Safety Recommendations:** Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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:** Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when disposing of equipment washwater or rinsate.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. 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.

#### 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 the label about personal protective equipment (PPE), and restricted entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

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, waterproof gloves, shoes plus socks.

**Exception:** If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

**Product Information:** ARMOUR-Zen is chitosan-based product that is antifungal and antibacterial, preventing spore germination and causing existing mycelia to shrink and lose structural integrity. ARMOUR-Zen is effective against plant pathogens including powdery and downy mildews, *Botrytis*, *Phytophthora* spp., leaf spot, early and late blight, anthracnose, stem wilt, damp-off, stem cankering and blast. ARMOUR-Zen can be used throughout the growing season in greenhouse and field applications.

**(Integrated Pest Management:** Integrating ARMOUR-Zen into an overall pest management strategy and following best management practices (or practices known to reduce disease development) makes it less likely that disease will be established. Specific IPM strategies developed for your crop and location may be available from the Extension Service or other local agricultural authorities.)

**Mixing and Application Instructions:**

**MIXING:** Dilute ARMOUR-Zen with water and apply in conventional spray equipment or through sprinkler irrigation. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of ARMOUR-Zen to the tank. Finish filling the tank to the desired volume to obtain the proper spray concentration. Use spray mixture immediately. Do not allow spray mixture to stand overnight or for prolonged periods.

**APPLICATION:** Apply ARMOUR-Zen using conventional spray equipment to the point of saturation. Good coverage and wetting is required. The amount of spray solution to apply will vary depending on the type of crop. Most row crops will require up to 100 gallons of spray per acre. Apply in sufficient water to achieve thorough coverage.

**COMPATIBILITY:** ARMOUR-Zen may be tank mixed with some fungicides. Do not tank mix ARMOUR-Zen with more than one product. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. It is always advisable to conduct a spray compatibility test when you plan to mix this product with another product. To determine the physical compatibility of this product with other products, use a jar test. Using a quart jar, add the proportionate amounts of the products to approximately one quart of water with agitation. Add dry formulations first, then flowables, and then emulsifiable concentrates last. After thorough mixing, allow this mixture to stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding products to the spray tank.

ARMOUR-Zen has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties, in all mixtures and combinations is not feasible. Prior to treating entire crop, test a small portion of the crop for sensitivity.

**Foliar Applications:**

ARMOUR-Zen can be applied as a foliar spray by ground and by air. Mix 1 – 4 quarts in 100 gallons of water and apply at a sufficient spray volume to ensure complete coverage. The optimum concentration for most uses is 2 quarts per 100 gallons of water.

**Soil Treatment Use Directions:**

ARMOUR-Zen can be applied by soil drench, in-furrow spray, or soil injection to improve plant health and to protect against certain soil-borne diseases.

In general, ARMOUR-Zen can be applied by the following methods, unless specified differently in the SELECTED CROPS section:

**Soil Drench Applications**

Apply ARMOUR-Zen at a concentration of 1 – 4 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application during or shortly after transplant to control soil-borne diseases, reduce transplant shock, induce disease resistance, and to promote root growth. Multiple drench applications can be made on a 10 – 14 day schedule.

**Shanked-In and Injected Applications**

ARMOUR-Zen can be shanked or injected into the soil alone, or with most types of liquid nutrients.

**In-Furrow Applications**

ARMOUR-Zen can be applied at planting as an in-furrow spray. Mix 1 – 4 quarts of ARMOUR-Zen® in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.

**Application Rates for Selected Crops:**

ARMOUR-Zen used as specified will prevent, control and suppress a broad range of plant diseases, as well as induce the natural defense system of the treated plants listed below.

The general recommendation is to apply 1 – 4 quarts per 100 gallons of water. The optimum concentration for most applications is 2 quarts per 100 gallons of water.

**Application Rates for Foliar Spray:**

Crops	Target Disease	Application Method	Use Rate per 100 Gallons	Notes
Artichoke	Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Leveillula taurica</i> ) Ramularia Leaf Spot ( <i>Ramularia cynarae</i> )	Foliar (Ground)	1 – 4 quarts	For ground applications, apply in 50 – 100 gallons of water per acre.  Apply this product preventatively or at the first sign of disease symptoms are visible. Reapply every 7 – 14 days.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and apply every 7 – 14 days.
		Chemigation	1 – 4 quarts	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
Asparagus	Botrytis Blight ( <i>Botrytis cinerea</i> )  Rust ( <i>Puccinia asparagi</i> )	Foliar (Ground)	1 – 4 quarts	For ground applications, apply this product in 50 – 100 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and apply every 7 – 14 days.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and apply every 7 – 14 days.
<b>Berries, including:</b>  Blackberry Blueberry Bushberry Caneberry Cranberry Currants Elderberry Gooseberry Huckleberry Loganberry Raspberry	Botrytis Blight ( <i>Botrytis cinerea</i> )  Mummy Berry ( <i>Monilinia vaccinii-corymbosi</i> )  Alternaria Fruit Rot ( <i>Alternaria</i> spp.)  Anthracnose Fruit Rot ( <i>Colletotrichum acutatum</i> )  Bacterial Canker ( <i>Pseudomonas syringae</i> )  Leaf Rust ( <i>Pucciniastrum vaccinii</i> )	Foliar (Ground)	1 – 4 quarts	Apply in 50 – 100 gallons per acre.  Mummy Berry – Begin applications at bud break stage of development. Apply preventatively and repeat on a 7 -10 day interval or as needed.  Botrytis Blight – Apply this product preventatively prior to or at first sign of disease symptoms. Reapply every 7 – 14 days or as needed.  Bacterial Canker – Apply prior to Fall rains and repeat applications during dormancy before Spring growth. This product can be tank mixed with another registered fungicide for improved control of bacterial canker.  Anthracnose Fruit Rot and Alternaria Fruit Rot on blueberries – Apply at green tip and continue on a 7 – 10

	<p>Leaf Spot and Blotch (<i>Mycosphaerella</i> spp.) (<i>Septoria</i> spp.)</p> <p>Phomopsis Leaf Spot, Twig Blight and Fruit Rot (<i>Phomopsis</i> spp.)</p> <p>Powdery Mildew (<i>Microsphaera alni</i>)</p> <p>Spur Blight (<i>Didymella</i> spp.) (<i>Phoma</i> spp.)</p>	Foliar (Aerial)	1 – 4 quarts	interval. For aerial applications, apply this product in a minimum of 5 gallons of water per acre.	
<p><b>Bulb Vegetables, including:</b></p> <p>Garlic Leeks Onions (Bulb and Green) Shallots</p> <p>And other bulb vegetable crops</p>	<p>Botrytis Leaf Blight (<i>Botrytis squamosa</i>)</p> <p>Botrytis Neck Rot (<i>Botrytis</i> spp.)</p> <p>Onion Purple Blotch (<i>Alternaria porri</i>)</p> <p>Downy Mildew (<i>Peronospora</i> spp.)</p> <p>Powdery Mildew (<i>Erysiphe</i> spp.)</p> <p>Rust (<i>Puccinia porri</i>)</p> <p>Stemphyllium Leaf Blight (<i>Stemphyllium vesicarium</i>)</p>	Foliar	1 – 4 quarts	<p>Apply preventively in 50 – 100 gallons of water per acre.</p> <p>Repeat applications at 7 – 14 day intervals.</p>	
		<p><i>Fusarium</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p>	Soil Drench	1 – 4 quarts	Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
			In-Furrow	1 – 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 – 4 quarts per 100 gallons of water. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
			Plant Dip	1 – 4 quarts	Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.
			Chemigation	1 – 4 quarts	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.

<b>Cereal Grains, including:</b> Barley Buckwheat Grain Amaranth Milo Oat Millets Rice Rye Sorghum Triticale Wheat	Powdery Mildew ( <i>Erysiphe graminis</i> )  Bacterial Blight and Streak ( <i>Xanthomonas</i> spp.)  Brown Rot, Leaf Spots & Smuts ( <i>Ceratobasidium</i> spp.) ( <i>Cercospora</i> spp.) ( <i>Drechslera</i> spp.)  Rice Blast ( <i>Pyricularia grisea</i> )  Rust ( <i>Puccinia</i> spp.)  Septoria Leaf Spot ( <i>Septoria</i> spp.)  Sheath Spot and Blight ( <i>Rhizoctonia oryzae</i> ) ( <i>Thanatephorus cucumeris</i> )  Stem Rot ( <i>Sclerotium oryzae</i> )  Smut ( <i>Tilletia barclayana</i> )	Foliar (Ground)	1 – 4 quarts	To optimize disease control and to maximize yields, apply in 15 – 40 gallons of water per acre.  Apply preventatively or when disease symptoms first appear. Repeat applications on a 7 – 14 day interval depending upon crop growth and disease pressure.  When plants are under high disease pressure, tank mix this product with another registered fungicide for more effective control.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.
<b>Citrus Fruits, including:</b> Calamondin Citrus citron Citrus hybrids Grapefruit Kumquat Lemon Lime Mandarin Orange, sour and sweet Pummelo Satsuma mandarin	Bacterial Canker ( <i>Xanthomonas</i> spp.)  Alternaria Brown Spot ( <i>Alternaria alternata</i> )  Bacterial Blast ( <i>Pseudomonas syringae</i> )  Black Spot ( <i>Guignardia citricarpa</i> ) ( <i>Phyllosticta citricarpa</i> )  Greasy Spot ( <i>Mycosphaerella citri</i> )  Melanose ( <i>Diaporthe citri</i> )  Postbloom Fruit Drop ( <i>Colletotrichum acutatum</i> )  Scab ( <i>Elsinoe australis</i> ) ( <i>Elsinoe fawcetti</i> )	Foliar (Ground)	1 – 4 quarts	Apply in 50 – 100 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.
<b>Cole Crops</b>	Powdery Mildew ( <i>Erysiphe cruciferarum</i> )	Foliar (Ground)	1 – 4 quarts	Apply in 50 – 100 gallons per acre.

<b>(Brassicas), including:</b> Broccoli Broccoli Rabe Brussels Sprouts Cabbage Chinese Broccoli Chinese Cabbage (Bok Choy) Chinese Cabbage (Napa) Chinese Mustard Cabbage (Gai Choy) Cauliflower Cavalo Collards Kale Kohlrabi Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip	( <i>Erysiphe polygoni</i> )  Alternaria Leaf Spot ( <i>Alternaria</i> spp.)  Downy Mildew ( <i>Peronospora parasitica</i> )  Pin Rot Complex ( <i>Alternaria</i> , <i>Xanthomonas</i> )  Xanthomonas Leaf Spot ( <i>Xanthomonas campestris</i> )	Foliar (Aerial)	1 – 4 quarts	Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.  For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.
<b>Corn, including:</b> Sweet Corn Field Corn Popcorn Silage Corn Seed Corn	Anthracnose Leaf Blight ( <i>Colletotrichum graminicola</i> )  Eye Spot ( <i>Aureobasidium zeae</i> )  Gray Leafspot ( <i>Cercospora zeae-maydis</i> )  Rusts ( <i>Puccinia</i> spp.)  Northern Leaf Blight ( <i>Cochliobus carbonum</i> )  Southern Leaf Blight ( <i>Cochliobus heterostrophus</i> )	Foliar (Ground)	1 – 4 quarts	Apply in 15 – 40 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 3 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.
<b>Cotton</b>	Alternaria Leaf Spot, Boll Rot ( <i>Alternaria</i> spp.) Anthracnose, Boll Rot ( <i>Anthracoze</i> spp.)  Ascochyta Blight, Boll Rot ( <i>Ascochyta</i> spp.)  Cercospora Blight and Leaf Spot ( <i>Cercospora</i> spp.)  Diplodia Boll Rot ( <i>Diplodia</i> spp.)  Hard Lock, Boll Rot	Foliar (Ground)	1 – 4 quarts	Apply in 15 – 40 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.
		Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 3 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.

		( <i>Fusarium</i> spp.) Leaf Spot ( <i>Corynespora cassicola</i> ) Phoma Blight, Boll Rot ( <i>Phoma</i> spp.) Rust ( <i>Puccinia</i> spp.) ( <i>Phykopsora</i> spp.) Stemphyllium Leaf Spot ( <i>Stemphyllium</i> spp.)				
<p><b>Cucurbits</b> <b>Includes all types and hybrids of:</b> Chayote Chinese Waxgourd Cucumber Citron Melon Gherkin Pumpkin Watermelon</p> <p><b>Edible Gourd:</b> Chinese Okra Cucuzza Hyotan</p> <p><b>Mormordica spp.</b> Balsam Apple Balsam Pear Bitter Melon Chinese Cucumber</p> <p><b>Muskmelon:</b> Cantaloupe Casaba Crenshaw Melon Golden Pershaw Melon Honeydew Melon Honey Balls Mango Melon Persian Melon Pineapple Melon Santa Clause Melon Snake Melon</p> <p><b>Summer Squash:</b> Crookneck Squash Scalloped Squash Straightneck Squash Vegetable Marrow Zucchini</p> <p><b>Winter Squash:</b> Acorn Squash Butternut Squash</p>		Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Sphaerotheca fuliginea</i> ) Anthracnose ( <i>Colletotrichum lagenarium</i> ) Alternaria Leaf Spot ( <i>Cercospora citrulina</i> ) Downy Mildew ( <i>Pseudoperonospora cubensis</i> ) Gummy Stem Blight ( <i>Didymella bryoniae</i> ) Phytophthora Blight ( <i>Phytophthora capsici</i> )	Foliar (Ground)	1 – 4 quarts	Apply preventatively in 25 – 100 gallons of water per acre or at first sign of disease symptoms. Increase water volume as plant size increases.  Reapply on a 7 – 14 day interval depending on plant growth and disease pressure. Use shorter spray intervals for greenhouse cucurbits when under high disease pressure.	
			Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 14 day intervals.	
			<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	Soil Drench	1 – 4 quarts	Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
				In-Furrow	1 – 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 – 4 quarts per 100 gallons of water. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
				Plant Dip	1 – 4 quarts	Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.
				Chemigation	1 – 4 quarts	Apply through irrigation immediately after transplant and at 14 day intervals or begin 14 days after transplant when soil drench applications are used.

<p>Calabaza Gubbard Squash Spaghetti Squash</p> <p>And other cucurbit crops</p>					
<p><b>Fruiting Vegetables, including:</b></p> <p>Eggplant Okra Pepper Tomato Tomatillo Ground Cherry</p>	<p>Bacterial Blight (<i>Xanthomonas</i> spp.)</p>	<p>Foliar (Ground)</p>	<p>1 – 4 quarts</p>		<p>Apply preventatively in 25 – 100 gallons of water per acre or at first sign of disease symptoms. Increase water volume as plant size increases.</p> <p>Reapply on a 7 - 10 day interval depending on plant growth and disease pressure. Use shorter spray intervals for greenhouse cucurbits when under high disease pressure.</p>
	<p>Bacterial Spot (<i>Xanthomonas</i> spp.)</p>				
	<p>Bacterial Speck (<i>Pseudomonas syringae</i>)</p>				
	<p>Black Mold (<i>Alternaria alternata</i>)</p>				
	<p>Early Blight (<i>Alternaria solani</i>)</p>	<p>Foliar (Aerial)</p>	<p>1 – 4 quarts</p>		<p>For aerial applications, apply this product in a minimum of 3 gallons of water per acre.</p>
	<p>Gray Mold (<i>Botrytis cinerea</i>)</p>				<p>Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 – 10 day intervals.</p>
	<p>Late Blight (<i>Phytophthora capsici</i>)</p>				
	<p>Powdery Mildew (<i>Erysiphe</i> spp.) (<i>Leveillula taurica</i>) (<i>Oidopsis taurica</i>) (<i>Sphaerotheca</i> spp.)</p>				
	<p>Target Spot (<i>Corynespora cassiicola</i>)</p>				
	<p><i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.</p>	<p>Soil Drench</p>	<p>1 – 4 quarts</p>		<p>Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.</p>
	<p>In-Furrow</p>	<p>1 – 4 quarts</p>		<p>Apply as an in-furrow spray at planting at the rate of 1 – 4 quarts per 100 gallons of water. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.</p>	
	<p>Plant Dip</p>	<p>1 – 4 quarts</p>		<p>Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.</p>	

			Chemigation	1 - 4 quarts	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant if soil drench applications are used.
<b>Grapes</b>		<p>Powdery Mildew (<i>Uncinula necator</i>)</p> <p>Angular Leaf Spot (<i>Mycosphaerella angulata</i>)</p> <p>Anthrachnose (<i>Elsinoe ampelina</i>)</p> <p>Botrytis Bunch Rot (<i>Botrytis cinerea</i>)</p> <p>Black Rot (<i>Guignardia bidwellii</i>)</p> <p>Downy Mildew (<i>Plasmopara viticola</i>)</p> <p>Eutypa (<i>Eutypa lata</i>)</p> <p>Leaf Blight (<i>Pseudocercospora vitis</i>)</p> <p>Phomopsis Fruit Rot (<i>Phomopsis viticola</i>)</p> <p>Ripe Rot (<i>Colletotrichum gloeosporioides</i>)</p> <p>Sour Rot (<i>Alternaria tenuis</i>) (<i>Aspergillus spp.</i>) (<i>Botrytis cinerea</i>) (<i>Cladosporium herbarum</i>) (<i>Penicillium spp.</i>) (<i>Rhizopus arrhizus</i>)</p>	Foliar	1 - 4 quarts	<p>Apply preventively in 50 - 100 gallons of water per acre or the first signs of disease symptoms.</p> <p>Repeat applications at 7 - 14 day intervals depending on crop growth and disease pressure.</p>
<b>Grass Seed</b>		<p>Powdery Mildew (<i>Erysiphe graminis</i>) (<i>Oidium spp.</i>) (<i>Podosphaera spp.</i>) (<i>Sphaerotheca spp.</i>)</p> <p>Rust (<i>Puccinia spp.</i>)</p>	Foliar (Ground)	1 - 4 quarts	Apply preventatively in 25 - 100 gallons of water per acre when disease symptoms are first visible or when environmental conditions are conducive to rapid disease development. Reapply on a 7-day interval or as needed.
<b>Hops</b>		Downy Mildew ( <i>Pseudoperonosperora humili</i> )	Foliar (Ground)	1 - 4 quarts	Apply preventatively in 50 - 100 gallons of water or when environmental conditions are conducive to rapid disease development. Reapply on a 7-

		Powdery Mildew ( <i>Sphaerotheca macularis</i> )			day interval or as needed.
<b>Leafy Vegetables, including:</b> Arugula Beet Celery Chervil Cilantro Corn Salad Cress Dandelion Dock Edible Chrysanthemum Endive Fennel Garden Peas Head Lettuce Leaf Lettuce Parsley Purslane Radicchio Rhubarb Spinach Swiss Chard Watercress		Downy Mildew ( <i>Bremia lactuca</i> ) ( <i>Peronospora</i> spp.)	Foliar (Ground)	1 – 4 quarts	Apply preventatively in 50 – 100 gallons of water or when environmental conditions are conducive to rapid disease development. Reapply on a 7-14 day interval or as needed.  For concentrated ground applications, apply this product at 0.5 – 1 quart per acre in a minimum of 10 gallons of water per acre.
		Bacterial Blight/Rot ( <i>Xanthomonas</i> spp.)  Cercospora Leafspot ( <i>Cercospora</i> spp.)  Late Blight ( <i>Septoria apiicola</i> )  Pink Rot ( <i>Sclerotinia sclerotiorum</i> )  Powdery Mildew ( <i>Erysiphe cichoracearum</i> )  Sclerotinia Had and Leaf Drop ( <i>Sclerotinia minor</i> ) ( <i>Sclerotinia sclerotiorum</i> )  White Rust ( <i>Albugo occidentalis</i> )	In-Furrow	1 – 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 – 2 quarts per acre or 2.2 – 4.4 fluid ounces per 1000 feet of row. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
<b>Legumes, succulent and dried, (not including soybeans and peanuts):</b> Chick Peas Dry Beans Garbanzo Beans Green Beans Lentils Lima Beans Peas Shell Beans Snap Beans Split Peas  And other legume crops		Bacterial Blight ( <i>Xanthomonas campestris</i> )  Gray Mold ( <i>Botrytis cinerea</i> )  Pythium (aerial blight phase) ( <i>Pythium</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.)  Rust ( <i>Puccinia</i> spp.) ( <i>Uromyces appendiculatus</i> )  White Mold ( <i>Sclerotinia sclerotiorum</i> )	Foliar (Ground)	1 – 4 quarts	Apply preventatively in 50 – 100 gallons of water or when environmental conditions are conducive to rapid disease development. Reapply on a 7-day interval or as needed.

	<p><i>Fusarium</i> spp.  <i>Phytophthora</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.</p>	In-Furrow	1 - 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 - 2 quarts per acre or 2.2 - 4.4 fluid ounces per 1000 feet of row. Apply in 5 - 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
<p><b>Mint and other Herbs/Spices, including:</b></p> <p>Angelica  Balm  Basil  Borage  Burnet  Chamomile  Catnip  Chervil  Chive  Clary  Coriander  Costmary  Cilantro  Curry  Dillweed  Horehound  Hyssop  Lavender  Lemongrass  Lovage  Marjoram  Nasturtium  Parsley (dried)  Peppermint  Rosemary  Sage  Savory (summer and winter)  Sweet Bay  Tansy  Tarragon  Thyme  Wintergreen  Woodruff  Wormwood</p>	<p>Downy Mildew (<i>Peronospora</i> spp.)  Powdery Mildew (<i>Erysiphe</i> spp.)  Rust (<i>Puccinia menthae</i>)</p>	Foliar (Ground)	1 - 4 quarts	Apply preventatively in 50 - 100 gallons of water per acre or at first sign of disease symptoms. Reapply on a 7 - 10 day interval depending on plant growth and disease pressure.
		Foliar (Aerial)	1 - 4 quarts	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or at the first sign of disease symptoms. Repeat applications at 7 - 10 day intervals.
<p><b>Oil Seed Crops, including:</b></p> <p>Canola  Castor  Flax  Rapeseed  Safflower</p>	<p>Bacterial Pustule (<i>Xanthomonas</i> spp.)  Bacterial Speck (<i>Pseudomonas syringae</i> pv. <i>glycinea</i>)  Brown Spot</p>	Foliar (Ground)	1 - 4 quarts	To optimize disease control and maximize yields, apply this product preventatively in 15 - 40 gallons of water per acre.  Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.

<p>Sesame Sunflower</p> <p>(does not include cotton, peanut or soybean)</p>	<p>(<i>Septoria glycines</i>)</p> <p>Cercospora Leaf Spot (<i>Cercospora</i> spp.)</p> <p>Downy Mildew (<i>Peronospora mansherica</i>)</p> <p>Pod and Stem Blight (<i>Diaporthe phaseolorum</i> var. <i>sojae</i>) (<i>Phomopsis longicola</i>)</p> <p>White Mold/Sclerotinia Stem Rot (<i>Sclerotinia sclerotiorum</i>)</p>	<p>Foliar (Aerial)</p>	<p>1 - 4 quarts</p>	<p>For aerial applications, apply this product in a minimum of 3 gallons of water per acre.</p> <p>Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.</p>
<p>Olive</p>	<p>Olive Knot (<i>Pseudomonas savastanoi</i>)</p>	<p>Foliar</p>	<p>1 - 4 quarts</p>	<p>Apply preventatively in 50 - 100 gallons of water per acre.</p> <p>Repeat application at 7 - 14 day intervals or as needed.</p>
<p><b>Ornamental Plants</b></p> <p><b>Herbaceous Ornamentals</b></p> <p>Flowering Plants Foliage Plants</p> <p><b>Woody Ornamentals</b> Broadleaves, Shrubs and trees Conifers, Shrubs and trees</p>	<p>Anthracnose (<i>Colletotrichum</i> spp.)</p> <p>Bacteria (<i>Erwinia</i> spp.) (<i>Pseudomonas</i> spp.) (<i>Xanthomonas</i> spp.)</p> <p>Black Spot of Rose (<i>Diplocarpon rosae</i>) Blossom Blight (<i>Monilinia</i> spp.)</p> <p>Downy Mildew (<i>Peronospora</i> spp.) (<i>Plasmopara viburni</i>)</p> <p>Gray Mold (<i>Botrytis cinerea</i>)</p> <p>Leaf Spot (<i>Alternaria</i> spp.) (<i>Cercospora</i> spp.) (<i>Entomosporium</i> spp.) (<i>Myrothecium</i> spp.) (<i>Septoria</i> spp.)</p> <p>Powdery Mildew (<i>Erysiphe</i> spp.) (<i>Oidium</i> spp.) (<i>Podosphaera</i> spp.) (<i>Sphaerotheca</i> spp.)</p> <p>Rust (<i>Puccinia</i> spp.)</p> <p>Scab</p>	<p>Foliar</p>	<p>1 - 4 quarts</p>	<p>Apply preventatively in 50 - 100 gallons of water and repeat on 7 - 14 day intervals, or as needed.</p> <p>This product may be used to control certain diseases of container, bench, flat, plug, bed, or field-grown ornamentals in greenhouses, shade houses, outdoor nurseries, retail nurseries, and other landscape areas.</p>

	( <i>Venturia</i> spp.)			
	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Soil Drench	1 – 4 quarts	Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
		Plant Dip	1 – 4 quarts	Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.
		Chemigation	1 – 4 quarts	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant if soil drench applications are used.
Since it is not possible to test all ornamental species or varieties grown, test Armour-Zen on a few plants prior to large-scale usage.				
Peanut	Aspergillus Crown Rot ( <i>Aspergillus niger</i> )	Foliar	1 – 4 quarts	Apply preventatively in 50 – 100 gallons of water and repeat on 7 – 14 day intervals, or as needed.
	Rhizoctonia Foliar Blight, Peg, and Root Rot ( <i>Rhizoctonia solani</i> )			
	White Mold ( <i>Sclerotium rolfsii</i> )			
	Aspergillus Crown Rot ( <i>Aspergillus niger</i> ) <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp. White Mold ( <i>Sclerotium rolfsii</i> )	Soil Drench	1 – 4 quarts	Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
		In-Furrow	1 – 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 – 2 quarts per acre or 2.2 – 4.4 fluid ounces per 1000 feet of row. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
Pome Fruits, including: Apple Crabapple Loquat Mayhaw Pear	Powdery Mildew ( <i>Podosphaera leucotricha</i> ) Alternaria Blotch ( <i>Alternaria mali</i> ) Apple Scab ( <i>Venturia</i> )	Foliar	1 – 4 quarts	Apply in 50 – 100 gallons of water per acre. Begin applications when conditions are conducive to disease development. Repeat applications on 3 – 10 day intervals or as needed.  Use high label rate and shorter spray intervals when conditions are conducive to rapid disease

<p>Pear, oriental Quince</p>	<p><i>inaequalis)</i></p> <p>Bitter Rot (<i>Colletotrichum</i> spp.)</p> <p>Black Rot/ Frogeye Leaf Spot (<i>Botryosphaeria obtusa</i>)</p> <p>Bot Rot (<i>Botryosphaeria dothidea</i>)</p> <p>Brooks Spot (<i>Mycosphaerella pomi</i>)</p> <p>Bull's Eye Rot (<i>Neofabraea</i> spp.)</p> <p>Cedar-Apple Rust (<i>Gymnosporangium juniper-virginianae</i>)</p> <p>Fire Blight (<i>Erwinia amylovora</i>)</p> <p>Flyspeck (<i>Zygophiala jamaicensis</i>)</p> <p>Sooty Blotch (<i>Geastrum polystigmati</i>) <i>Leptodontium elatius</i> (<i>Peltaster fruticola</i>)</p> <p>White Rot (<i>Botryosphaeria dothidea</i>)</p>			<p>development.</p>
<p><b>Root, Tuber and Corm Vegetables, including:</b></p> <p>Beets Carrots Cassava Ginger Ginseng Horseradish Potato Radish Sugar beets Sweet potato Yams Turnip</p>	<p>Bacterial Leaf Blight (<i>Xanthomonas campestris</i>)</p> <p>Black Root Rot / Black Crown Rot (<i>Alternaria spp.</i>)</p> <p>Downy Mildew (<i>Peronospora</i> spp.)</p> <p>Early Blight (<i>Alternaria</i> spp.)</p> <p>Gray Mold (<i>Botrytis cinerea</i>)</p> <p>Late Blight (<i>Phytophthora infestans</i>)</p> <p>Powdery Mildew</p>	<p>Foliar</p>	<p>1 – 4 quarts</p>	<p>Apply preventatively in 25 – 100 gallons of water and repeat on 5 – 10 day intervals, or as needed.</p> <p>Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Use higher rates and shorter intervals when conditions favor rapid disease development.</p>
		<p>Soil Drench</p>	<p>1 – 4 quarts</p>	<p>Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.</p>
		<p>In-Furrow</p>	<p>1 – 4 quarts</p>	<p>Apply as an in-furrow spray at planting at the rate of 1 – 2 quarts per acre or 2.2 – 4.4 fluid ounces per 1000 feet of</p>

	<p>(<i>Erysiphe</i> spp.)</p> <p>White Mold (<i>Sclerotinia sclerotiorum</i>)</p> <p>Clubroot (<i>Plasmodiophora brassicae</i>)</p> <p>Common Scab (<i>Streptomyces scabies</i>)</p> <p><i>Fusarium</i> spp.</p> <p><i>Phytophthora</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p> <p><i>Verticillium</i> spp.</p>	Chemigation	1 – 4 quarts	<p>row. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.</p> <p>Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant if soil drench applications are used.</p>
Soybean	<p>Aerial Web Blight (<i>Rhizoctonia solani</i>)</p> <p>Alternaria Leafspot (<i>Alternaria</i> spp.)</p> <p>Anthrachnose (<i>Colletotrichum truncatum</i>)</p> <p>Asian Soybean Rust (<i>Phakopsora pachyrhizi</i>)</p> <p>Brown Spot (<i>Septoria glycines</i>)</p> <p>Cercospora Blight (<i>Cercospora kikuchii</i>)</p> <p>Frog-eyed Leaf spot (<i>Cercospora sojina</i>)</p> <p>Pod and Stem Blight (<i>Diaporthe</i> spp.)</p> <p>Septoria Brown Spot (<i>Septoria glycines</i>)</p> <p>White Mold (<i>Sclerotinia sclerotiorum</i>)</p>	Foliar (Ground)	1 – 4 quarts	<p>To optimize disease control and maximize yields, apply this product preventatively in 15 – 40 gallons of water per acre.</p> <p>Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.</p>
		Foliar (Aerial)	1 – 4 quarts	<p>For aerial applications, apply this product in a minimum of 3 gallons of water per acre.</p> <p>Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.</p>

	<p><i>Fusarium</i> spp.  <i>Phytophthora</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.</p>	In-Furrow	1 – 4 quarts	Apply as an in-furrow spray at planting at the rate of 1 – 2 quarts per acre or 2.2 – 4.4 fluid ounces per 1000 feet of row. Apply in 5 – 15 gallons of water and direct the spray into the seed furrow just before the seeds are covered.
<p><b>Stone Fruits, including:</b>          Apricot          Cherry, sweet and tart          Nectarine          Peach          Plum          Plumcot          Prune (fresh)</p>	<p>Alternaria Spot/Fruit Rot (<i>Alternaria alternata</i>)          Anthracnose (<i>Colletotrichum</i> spp.)          Bacterial Canker (<i>Pseudomonas</i> spp.)          Bacterial Spot (<i>Pseudomonas</i> spp.)          Brown Rot Blossom Blight and Fruit Rot (<i>Monilinia</i> spp.)          Cercospora Leaf Spot (<i>Cercospora</i> spp.)          Cherry Leaf Rot (<i>Blumeriella jaapii</i>)          Gray Mold (<i>Botrytis cinerea</i>)          Jacket Rot, Green Fruit Rot (<i>Botrytis cinerea</i>, <i>Monilinia</i> spp., <i>Sclerotinia sclerotiorum</i>)          Powdery Mildew (<i>Podosphaera</i> spp.) (<i>Sphaerotheca pannosa</i>)          Rust (<i>Tranzschelia discolor</i>)          Rusty Spot (<i>Podosphaera leucotricha</i>)          Scab (<i>Cladosporium carpophilum</i>)          Shot Hole (<i>Wilsonomyces carpophilus</i>)</p>	Foliar	1 – 4 quarts	<p>Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.</p> <p>Bacterial Blight – Apply postharvest before Fall rains.</p> <p>Brown Rot Blossom Blight – Apply at early bloom and repeat on a 7-day schedule through petal fall or as needed.</p> <p>Powdery Mildew – Begin applications at popcorn stage and repeat on a 7-interval or as needed.</p> <p>Scab- Begin applications at petal fall and repeat on a 7 – 10 day interval or as needed.</p>

<b>Strawberry</b>	<p>Anthrachnose (<i>Colletotrichum</i> spp.)</p> <p>Botrytis (<i>Botrytis cinerea</i>)</p> <p>Leaf Spot (<i>Mycosphaerella fragariae</i>)</p> <p>Phomopsis Leaf Blight (<i>Phomopsis obscurans</i>)</p> <p>Powdery Mildew (<i>Sphaerotheca macularis</i>)</p>	Foliar	1 – 4 quarts	Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.
	<p>Black Root Rot (<i>Rhizoctonia</i> spp.) (<i>Pythium</i> spp.) (<i>Fusarium</i> spp.) (<i>Cylindrocarpon</i> spp.)</p> <p>Phytophthora Root Rot and Crown Rot (<i>Phytophthora</i> spp.)</p> <p>Verticillium Wilt (<i>Verticillium</i> spp.)</p> <p><i>Fusarium</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p>	Soil Drench	1 – 4 quarts	Apply at a concentration of 1 – 4 quarts per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
		Plant Dip	1 – 4 quarts	Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.
		Chemigation	1 – 4 quarts	Apply through irrigation immediately after transplant and at 14 - day intervals or begin 14 days after transplant if soil drench applications are used.
<b>Sugar Beets</b>	<p>Powdery Mildew (<i>Erysiphe betae</i>) (<i>Erysiphe polygoni</i>)</p> <p>Leaf Spot (<i>Cercospora beticola</i>)</p> <p>Ramularia (<i>Ramularia</i> spp.)</p> <p>Rust (<i>Uromyces betae</i>)</p>	Foliar	1 – 4 quarts	<p>Apply preventatively in 15 – 40 gallons of water per acre by ground or air.</p> <p>Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.</p>
<b>Sugarcane</b>	<p>Brown Rust (<i>Puccinia melanocephala</i>)</p> <p>Orange Rust (<i>Puccinia kuehnii</i>)</p>	Foliar (Ground)	1 – 4 quarts	<p>Apply preventatively in 15 – 40 gallons of water per acre by ground or air.</p> <p>Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications</p>
		Foliar (Aerial)	1 – 4 quarts	<p>Apply preventatively in a minimum of 3 gallons of water per acre by ground or air.</p> <p>Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.</p>

<b>Tobacco</b>	Blue Mold ( <i>Peronospora tabacina</i> )	Foliar	1 – 4 quarts	Apply preventatively in a minimum of 50 gallons of water per acre.  Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.
	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Plant Dip	1 – 4 quarts	Apply as a 0.5 – 2% suspension (1 – 4 quarts per 100 gallons) as a pre-plant dip immediately prior to transplant.
<b>Tree nuts, including:</b>  Almond Beech nut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert (hazelnut) Hickory nut Macadamia nut Pecan Walnut, Black and English	Walnut Blight ( <i>Xanthomonas campestris</i> )	Foliar (Ground)	1 – 4 quarts	Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.
	Alternaria Late Blight, Alternaria Leaf Spot ( <i>Alternaria</i> spp.)  Anthracnose ( <i>Colletotrichum</i> spp.) ( <i>Gnomonia leptostyla</i> )  Bacterial Canker ( <i>Erwinia nigrifluens</i> )  Botryosphaeria Blight ( <i>Botryosphaeria dothidea</i> )  Brown Rot ( <i>Monilinia</i> spp.)  Jacket Rot, Green Fruit Rot ( <i>Botrytis cinerea</i> , <i>Monilinia</i> spp., <i>Sclerotinia sclerotiorum</i> )  Eastern Filbert Blight ( <i>Anisogramma anomala</i> )  Leaf Rust ( <i>Tranzschelia discolor</i> )  Scab ( <i>Cladosporium carpophilum</i> ) ( <i>Sphaceloma perseae</i> )  Shot Hole ( <i>Wilsonomyces carpophilus</i> )	Foliar (Aerial)	1 – 4 quarts	For aerial applications, apply this product in a minimum of 10 gallons of water per acre.
<b>Tropical Fruits, including:</b>	Anthracnose ( <i>Colletotrichum gloeosporioides</i> )	Foliar (Ground)	1 – 4 quarts	Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7

Avocado Banana Kiwi Mango Papaya Plantain Pineapple Pomegranate	Bacterial Blight ( <i>Pseudomonas syringae</i> ) ( <i>Pseudomonas viridiflava</i> )  Bacterial Canker ( <i>Xanthomonas campestris</i> )  Botrytis Fruit Rot ( <i>Botrytis cinerea</i> )  Scab ( <i>Elsinoe mangiferae</i> )  Sigatoka ( <i>Mycosphaerella fijiensis</i> )			- 10 day spray interval or as needed.
		Foliar (Aerial)	1 - 4 quarts	For aerial applications, apply this product in a minimum of 10 gallons of water per acre.

**CHEMIGATION USE DIRECTIONS**

Apply this product only through sprinkler 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 systems. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

**Spray preparation**

First prepare a suspension of ARMOUR-Zen in a mix tank. Fill tank 1/2 to 3/4 the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of ARMOUR-Zen, and then the remaining volume of water. Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of ARMOUR-Zen into the irrigation water line so as to deliver the desired rate per acre. Inject the suspension of ARMOUR-Zen with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or other experts.

Do not combine ARMOUR-Zen with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. ARMOUR-Zen has not been fully evaluated for compatibility with all adjuvants or surfactants. It is advisable to conduct a spray compatibility test if a mixture with adjuvants or surfactants is planned.

**GENERAL PRECAUTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS**

Maintain continuous agitation in the mix tank during mixing and application to insure a uniform suspension. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume for a more dilute solution per unit time. Crop injury or lack of effectiveness can result from non-uniform distribution of treated 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. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation waters.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

**STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in a cool, dry place at or below 68°F (20°C). Store in original container only. Keep container tightly closed when not in use.

**Pesticide Disposal:** Wastes resulting from use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container promptly after emptying.

*(Containers 5 gallons or less)*

Triple rinse as follows: Fill container ¼ full with water and recap. Agitate vigorously. Follow Pesticide Disposal instructions for rinsate disposal. Drain for 10 seconds after the flow begins to drip. Repeat procedure two more times. Then offer for recycling or reconditioning. If not available, puncture and dispose in a sanitary landfill.

*(Containers greater than 5 gallons):*

Triple rinse as follows: Fill container ¼ full with water. 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. Follow Pesticide Disposal instructions for rinsate disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning. If not available, puncture and dispose in a sanitary landfill.

**WARRANTY STATEMENT**

Botry-Zen (2010) Limited warrants that this product conformed to its description and was reasonably fit for the purposes stated on the label when used in accordance with Seller's directions. Buyers and users of this product assume the risk of any use contrary to such directions. **SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GARANTEE, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO.** To the extent consistent with applicable law, the Seller's liability for any breach of warranty shall not exceed the purchase price of the material as to which a claim is made.

To the extent consistent with applicable law, Buyers and users of this product are responsible for all loss or damage from use or handling of this product which results from conditions beyond the control of Seller, or without the fault or negligence of the Seller, or from failure to follow the label.

**Sublabel B: Home and Garden Use**

**ARMOUR-Zen®**

**ACTIVE INGREDIENT:**

Chitosan ..... 30.00%

**OTHER INGREDIENTS:** ..... 70.00%

**TOTAL:** ..... 100.00%

Product contains 2.5 lb (1134 g) of chitosan per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	

**See (back) (side) panel for additional precautionary statements and directions for use.**

**EPA Reg. No.:** (Pending as File Symbol 75747-G)  
**EPA Establishment No.:** XXXXX-XX-XX  
(Batch No. / Lot No.: XXX)

**Net Weight:** XX lbs (XX kg)

**Manufactured by:**  
Botry-Zen (2010) Limited  
156 Frederick Street, P.O. Box 1777  
Dunedin 9054  
New Zealand  
www.botryzen.co.nz

**Distributed by:**  
(U.S. name and address –to be determined)

## PRECAUTIONARY STATEMENTS

**Hazards to humans and domestic animals - CAUTION.** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear goggles or safety glasses, long sleeved shirt and long pants, gloves and shoes plus socks. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**Environmental Hazards:** To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems.

## DIRECTIONS FOR USE

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

## HOW IT WORKS

ARMOUR-Zen is chitosan-based product that is antifungal and antibacterial, preventing spore germination and causing existing mycelia to shrink and lose structural integrity. AMOUR-Zen is effective against plant pathogens including powdery and downy mildews, *Botrytis*, *Phytophthora* spp., leaf spot, early and late blight, anthracnose, stem wilt, damp-off, stem cankering and blast. ARMOUR-Zen can be used throughout your growing season.

## HOW TO APPLY

**RATE:** Mix 2 – 4 teaspoons of ARMOUR-Zen per gallon of water.

**MIXING:** Dilute ARMOUR-Zen with water and apply in conventional spray equipment. Partially fill the spray tank with clean water. Add the specified amount of ARMOUR-Zen to the tank. Finish filling the tank to the desired volume to obtain the proper spray concentration. Shake the spray tank and use spray mixture immediately. Do not allow spray mixture to stand overnight or for prolonged periods.

**APPLICATION:** Apply ARMOUR-Zen using spray equipment to the point of saturation. Good coverage and wetting is required. The amount of spray solution to apply will vary depending on the type of crop. Apply in sufficient water to achieve thorough coverage. Repeat at 7 – 10 day intervals as needed. ARMOUR-Zen can be applied in commonly used pressurized hand-held sprayers, spray trigger bottles and hose-end sprayers.

## WHERE TO APPLY

**Apply to the following types home and garden plants to control mildews, blights, spots and other common plant diseases:**

Garden plants (including):

Asparagus, beets, broccoli, Brussels sprouts, cabbage, carrots, cane fruit (raspberry, blackberry, etc.) cauliflower, celery, collards, cucumbers, edible-podded legume vegetables including: snap bean, wax bean, yard long bean, jack bean, edible-pod pea, snow pea, sugar

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snap pea; dried shelled beans and peas including: field bean, kidney bean, lima bean (dry), navy bean, pinto bean, adzuki bean, black-eyed pea, cowpea, mung bean, southern pea, lentil (dry); eggplant, grapes, herbs, horseradish, kale, lettuce, melons, mustard greens, onions, parsnips, pepper, potatoes, radish, rutabaga, salsify, squash (winter and summer), sweet potato, strawberry, tomatoes, turnip greens, and turnips.

Ornamentals-including annuals and perennials

Fruit and Nut Trees

Turf

### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool dry place inaccessible to children.

**Pesticide Disposal and Container Handling:** **If empty:** Nonrefillable container. Do not reuse or refill this container. Place in trash and offer for recycling if available. **If partially filled:** Call your local solid waste agency or (800) 858-7378 (National Pesticide Information Center) for disposal instructions. Never place unused product down any indoor or outdoor drain.