



ZIRONAR™

BIOFUNGICIDE/BIONEMATICIDE

A biological fungicide/nematicide for in-furrow use for early season protection against listed fungal diseases and soil nematodes.

EPA Reg. No. 279-3618

EPA Est. No. 279-NY-1

ACTIVE INGREDIENTS:

<i>Bacillus licheniformis</i> strain FMCH001*	By Wt. 3.50%
<i>Bacillus subtilis</i> strain FMCH002**	4.00%

OTHER INGREDIENTS:	92.50%
	100.00%

*Contains a minimum of 2.3 X 10¹⁰ colony-forming units (cfu) per milliliter of product.
 **Contains a minimum of 2.3 X 10¹⁰ colony-forming units (cfu) per milliliter of product.
 This product contains a total of 0.73 pound of active ingredients per gallon.

KEEP OUT OF REACH OF CHILDREN

See other panels for additional precautionary information.

Net Contents: 2.5 Gallons

Sold by:



FMC Corporation
 2929 Walnut Street
 Philadelphia PA 19104

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- long-sleeved shirt
- long pants
- waterproof gloves
- shoes plus socks
- A NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

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

Engineering Controls

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 170.607(d) and (e) (f for aerial application), the handler PPE requirements may be reduced or modified as specified in the WPS.

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/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

For container sizes <5 gallons

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

For container sizes ≥5 gallons

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 Regional Office of the EPA.

DIRECTIONS FOR USE

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

Read entire label before using this product.

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 State or Tribal agency responsible for pesticide regulation.

Agricultural Use Requirements

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

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

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

For early entry into 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, wear:

- Coveralls
- Waterproof gloves
- Shoes plus socks

Product Information

Zironar™ biofungicide/bionematicide is a fungicide/nematicide that contains *Bacillus licheniformis* strain FMCH001 and *Bacillus subtilis* strain FMCH002 each at a minimum of 2.3×10^{10} colony-forming units (cfu) per milliliter. *Bacillus licheniformis* strain FMCH001 and *Bacillus subtilis* strain FMCH002 are soil bacteria found to suppress the listed fungal diseases and nematodes.

Application and Mixing Instructions

Shake well before using.

Zironar biofungicide/bionematicide can be mixed directly with water. The rate of application is variable according to pest pressure. Use lower labeled rates under light to moderate pest infestations, and higher labeled rates under heavier pest pressure. Use the highest labeled rate under arid conditions.

Fill the spray tank one-half full with water and begin agitation of tank contents. Add the proper amount of Zironar biofungicide/bionematicide then add the remainder of the water. Maintain agitation until the mixture has been applied.

Zironar biofungicide/bionematicide can be applied in-furrow with the seed or as a T-band (band over the open furrow).

Crop Rotation Restrictions

There are no crop rotation restrictions. Any crop can be rotated at any time after application of Zironar biofungicide/bionematicide.

Tank-Mixtures

Zironar biofungicide/bionematicide may be applied in tank mixtures with other products approved for use on the crops listed on this label. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures. To insure successful applications, product compatibility tests should be conducted.

IN-FURROW AND T-BAND OVER THE OPEN FURROW AT PLANT USE

Apply in the open furrow in a narrow band at the seeding depth or as a T-band over the open furrow during planting. Use the following table to convert the per acre rates in the crop specific directions to rate/1000 row-ft.

	Application Rate fl oz/1000 row-ft			
	36-inch rows	30-inch rows	20-inch rows	15-inch rows
6 fl oz/Acre	0.41	0.34	Not applicable	Not applicable
9 fl oz/Acre	0.62	0.52	0.34	Not applicable
12 fl oz/Acre	0.83	0.69	0.46	0.34

Crops, Pests and Application Rates

CROP	EARLY SEASON PROTECTION OF SEEDLINGS AGAINST INJURY FROM	APPLICATION RATE
Corn Field Corn, Popcorn, Sweet Corn, and Corn grown for seed	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Lesion Nematode (suppression)	6 to 12 fl oz/A Apply in a minimum of 3 gallons of water per acre.
Cotton	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression)	6 to 12 fl oz/A Apply in a minimum of 3 gallons of water per acre.
Soybean	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Soybean Cyst Nematode (suppression)	6 to 12 fl oz/A Apply in a minimum of 3 gallons of water per acre.
Sugar beet	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression)	12 fl oz/A Apply in a minimum of 3 gallons of water per acre.
Sugarcane	Root Knot Nematode (suppression) Lesion Nematode (suppression)	6 to 12 fl oz/A Apply in a minimum of 10 gallons of water per acre.

STORAGE AND DISPOSAL

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

Pesticide Storage

Do not freeze. Do not store below 40° F. Keep out of reach of children and animals. Store in original container only. Store in a cool, dry place and avoid excess heat. Carefully open container. After partial use, replace lid of container and close tightly. Shake or roll container to redissolve solids after storage and before use. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. In case of spill, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spills. Call CHEMTREC (Transportation and Spills) at 1-800-424- 9300. To confine spill, dike surrounding area or absorb with sand, cat litter or commercial clay. Place damaged package in a holding container. If a leaky container must be contained within another, mark the outer container to identify the contents.

Pesticide Disposal

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling

Nonrefillable Plastic Containers (Containers equal to or less than 5 gallons): Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank, and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Nonrefillable Plastic Containers (Containers greater than 5 gallons): Do not reuse or refill this container. Triple rinse or pressure rinse. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Pressure rinse as follows: Empty the remaining contents into application equipment or a 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. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Conditions of Sale and Limitation of Warranty and Liability:

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

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and, to the extent consistent with applicable law, Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors. **Seller warrants that this product conforms to the compositional description on the label and is reasonably fit for the purposes stated in the Directions for Use when used in accordance with the directions under normal conditions of use.**

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) Seller or FMC, and, to the extent consistent with applicable law, Buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

FMC, ZIRONAR—Trademarks of FMC Corporation
©2020 FMC Corporation All rights reserved.

SL-4749 101922 10-28-22