



ZIRONAR[®]

LFR[®]

FUNGICIDE/NEMATOCIDE



For early season protection against listed fungal diseases and soil nematodes.

EPA Reg. No. 279-9719

EPA Est. No. _____

ACTIVE INGREDIENTS:	By Wt.
<i>Bacillus licheniformis</i> strain FMCH001*	4.50%
<i>Bacillus subtilis</i> strain FMCH002**	5.00%
OTHER INGREDIENTS:.....	90.50%
	100.00%

*Contains a minimum of 2.3×10^{10} colony-forming units (cfu) per milliliter of product.

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This product contains a total of 0.96 pound of active ingredients per gallon.

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 this label, find someone to explain it to you in detail.)

FIRST AID	
If Swallowed:	<ul style="list-style-type: none"> -Call a poison control center or doctor immediately for treatment advice. -Have person sip a glass of water if able to swallow. -Do not induce vomiting unless told to do so by a poison control center or doctor. -Do not give anything by mouth to an unconscious person.
If in Eyes:	<ul style="list-style-type: none"> -Hold eye open and rinse slowly and gently with water for 15-20 minutes. -Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. -Call a poison control center or doctor for treatment advice.
If on Skin:	<ul style="list-style-type: none"> -Take off contaminated clothing. -Rinse skin immediately with plenty of water for 15-20 minutes. -Call a poison control center or doctor for treatment advice.
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 1-800-331-3148 for emergency medical treatment information.	

Sold By:

Net Contents: 2.5 Gallons



FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104

Batch/Lot code: _____

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- long-sleeved shirt
- long pants
- waterproof gloves
- shoes plus socks

Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N, R, or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter. Repeated exposures 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 or enclosed cabs in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides, (40CFR 170.607 (d) and (e), 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:

- 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® LFR® fungicide/nematicide 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 protect against the listed fungal diseases and suppress nematodes. Additionally, these strains act as biostimulants by enhancing water use efficiency and nutrient uptake within the plant, protecting against abiotic stress and supporting root growth and yield.

APPLICATION AND MIXING INSTRUCTIONS

Shake well before using.

Zironar® LFR® fungicide/nematicide can be mixed directly with liquid fertilizer or 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.

Do not apply this product through any type of irrigation system.

Fill the spray tank one-half full with liquid fertilizer or water and begin agitation of tank contents. Add the proper amount of Zironar® LFR® fungicide/nematicide then add the remainder of the water. Maintain agitation until the mixture has been applied.

Zironar® LFR® fungicide/nematicide can be applied in-furrow with the seed, sub-surface off 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® LFR® fungicide/nematicide.

Tank-Mixtures

Zironar® LFR® fungicide/nematicide may be tank mixed with other fungicides, herbicides, insecticides, and/or other additives unless prohibited on the label of the tank mix partner. Follow the most restrictive labeling of any tank mix partner. Although Zironar® LFR® fungicide/nematicide is compatible with most products, not all combinations have been tested. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Use the compatibility jar test to ensure physical compatibility. Before applying any tank mixture not specifically recommended on this label, the crop safety of the target crop should be confirmed by applying the mixture to a small area of the target crop in accordance to the label instructions.

Compatibility Jar Test: Zironar® LFR® fungicide/nematicide is compatible with most products, however not all combinations have been tested. Use the following compatibility jar test to ensure physical compatibility.

Using a quart jar, add the proportionate amounts of the products to approximately one quart of water or starter fertilizer with agitation. Add wettable powders and water dispersible granular products first, next liquid flowables, then emulsifiable concentrates, and last liquid soluble products. 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. Use tank mix combinations on a small number of plants before treating larger areas. When tank mixing, follow the most restrictive labeling of any tank mix partner. Do not tank mix with any product that contains a prohibition on tank mixing.

Spray Equipment/Volume: Zironar® LFR® fungicide/nematicide should be applied in a minimum of 3 gallons total spray volume per acre, unless otherwise specified in the crop table.

At-plant Applications with Fertilizer: Zironar® LFR® fungicide/nematicide can be mixed with commonly used liquid starter or pop-up fertilizers. Follow liquid fertilizer recommendations regarding seed safety and use guidelines. Conduct a jar test using the appropriate ratio of fertilizer and Zironar® LFR® fungicide/nematicide prior to mixing in the applicator. It is not advised to allow a tank mixture to set overnight or longer, but if this occurs agitate tank mixture prior to resuming application.

IN-FURROW, T-BAND, AND OFF THE SEED PLACEMENT AT PLANT USE

Apply at planting time in a narrow band to the soil in-furrow with the seed or placed sub-surface off the row to the side, below the seed (i.e., 2x2 inch, 2x2x2 dual-placement, or various placements) within 3-inches of the seed, or as a T-band over the open furrow during planting. Can be tank mixed with other products approved for 2x2, a 2x2x2 or similar dual placement. Always perform a jar test to confirm physical mixture compatibility. Use the following table to convert the per acre rates in the crop specific directions to rate/1000 row-ft.

Zironar® LFR® fungicide/nematicide Application Rate					
fl. oz. /1000 row-ft					
Row Spacing	38"	36"	30"	20"	15" or 30" twin rows
Linear row feet / acre	13,756 ft	14,520 ft	17,424 ft	26,136 ft	34,848 ft
6 fl.oz../A	0.43	0.41	0.34		
9 fl.oz. /A	0.65	0.62	0.52	0.34	
12 fl.oz. /A	0.88	0.83	0.69	0.46	0.34
15 fl.oz. /A	1.09	1.03	0.86	0.57	0.43

Zironar® LFR® fungicide/nematicide					
Application Rate Per Acre for Various Row Spacings					
Row Spacing	38"	36"	30"	20"	15" or 30" twin rows
Linear row feet / acre	13,756 ft	14,520 ft	17,424 ft	26,136 ft	34,848 ft
fl. oz. /1000 row-ft	fl. oz. / acre				
0.34 fl. oz./1000 linear feet	7.6	7.2	6		
0.52 fl. oz./1000 linear feet	11.4	10.8	9	6	
0.69 fl. oz./1000 linear feet		14.4	12	8	6
0.86 fl. oz./1000 linear feet			15	10	7.5

CROPS, PESTS, AND APPLICATION RATES

CROP	EARLY SEASON PROTECTION OF SEEDLINGS AGAINST INJURY FROM	APPLICATION RATE (30 inch rows)
Corn (Field Corn Grown for Grain, Seed or Forage/Silage, Popcorn, Sweet Corn)	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Lesion Nematode (suppression) Dagger Nematode (suppression) Pin Nematode (suppression) Spiral Nematode (suppression) Stunt Nematode (suppression) Stubby-root Nematode (suppression) Lance Nematode (suppression) Needle Nematode (suppression) Sting Nematode (suppression)	6 to 12 fl oz/A
Cotton	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Lance Nematode (suppression) Sting Nematode (suppression)	6 to 12 fl oz/A
Peanut	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Lesion Nematode (suppression) Ring Nematode (suppression) Spiral Nematode (suppression) Stunt Nematode (suppression) Sting Nematode (suppression)	9 to 15 fl oz/A
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
Sugar beet	Seedling blight caused by <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. Root Knot Nematode (suppression) Sugar Beet Cyst Nematode (suppression)	6 to 15 fl oz/A
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 incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Plastic Containers (Containers greater than 5 gallons): Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip 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. **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 incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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.

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