



IR-4 Update
2022 Industry Technology Session
July 21, 2022

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Stepan's New Biofungicide

- **Active ingredient:**

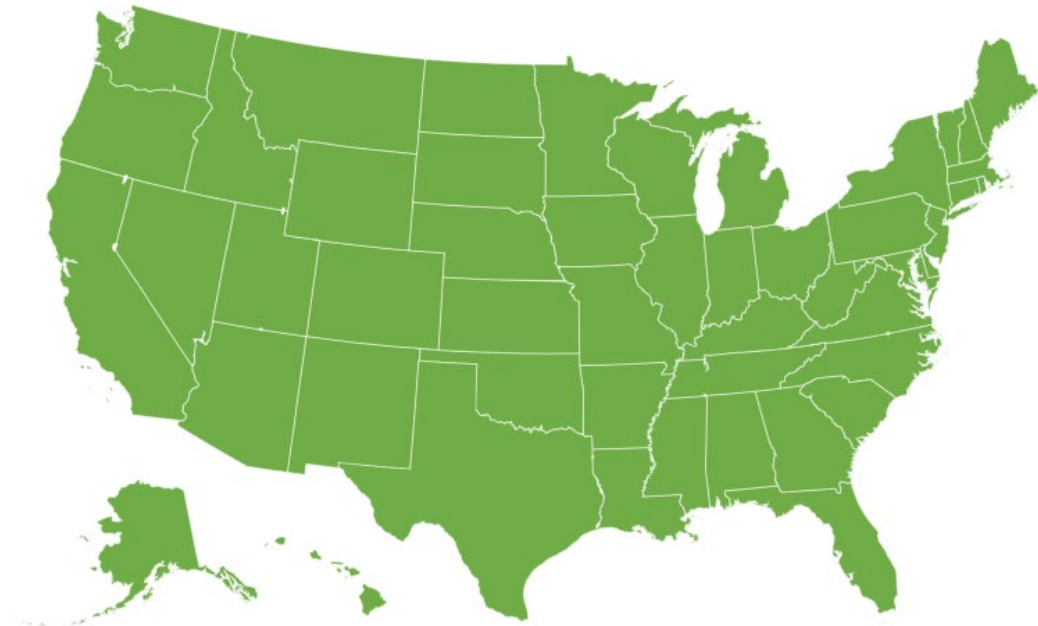
- Rhamnolipid Biosurfactant: 8.5%
- Other ingredients: 91.5%
- Source Organism: *Pseudomonas aeruginosa*

- **Prevents and controls**

- *Botrytis* spp., powdery mildew, and zoosporic pathogenic organisms such as downy mildew, *pythium*, and *phytophthora*



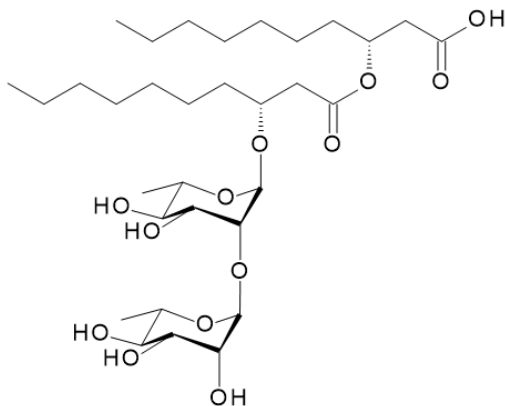
State Registration Status



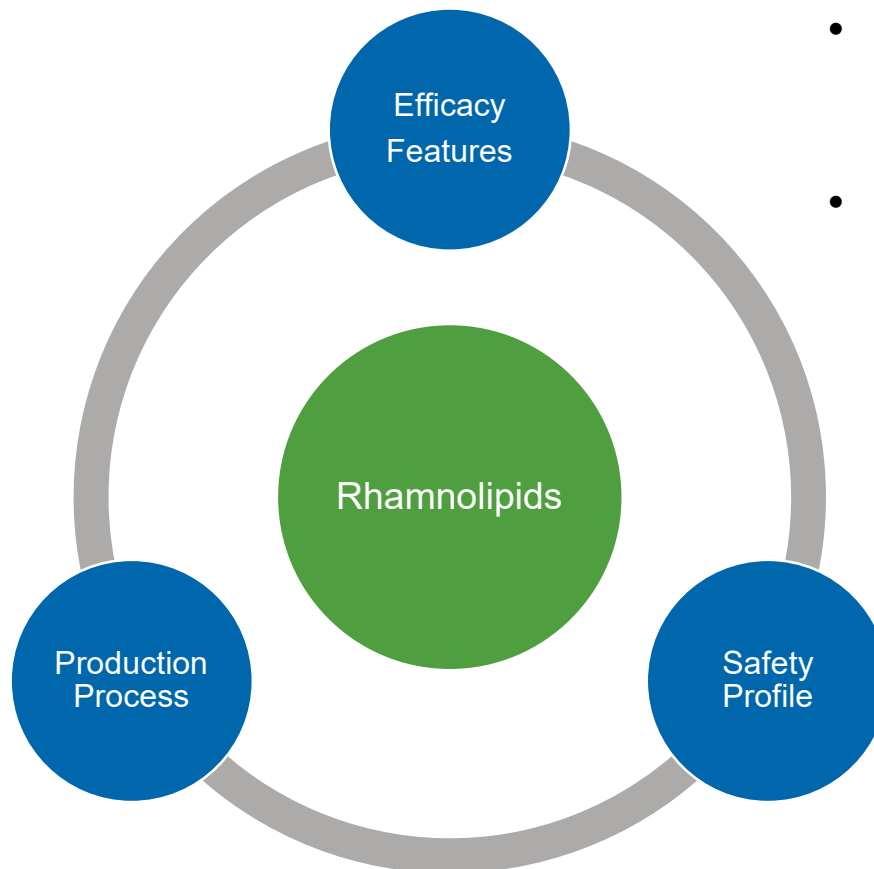
CA DPR approved 06/7/2022

Registered in all 50 states



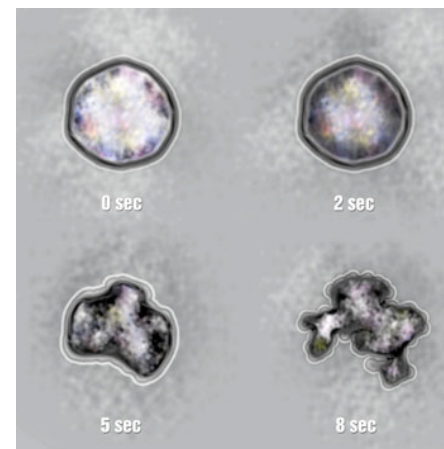


- Produced by Fermentation
- Flexible Feedstocks



Modes of Action:

- Disrupts cell membranes of zoospores which destroys the permeability and results in a loss of motility and rapid lysis
- Has an ability to stimulate defense and protection mechanisms in plants



Stanghellini, M.E. and R.M., Miller (1997)

- EPA exemption of rhamnolipids from tolerance limits



Label Overview

Application

- **Rate:** 300 – 500 ppm
 - 1000 ppm Sudden Death Oak Syndrome
- **Mixing:** 0.5 – 0.8 oz/gal of water
- **Application methods:** Foliar or soil spray, chemigation, or drench
- Preventative use is recommended
- Thorough coverage is necessary for effective control

Key Benefits

- Exempt from tolerance limits
- Zero pre-harvest interval
- 4-hour re-entry
- No maximum annual rate
- Great tank mix partner due to biosurfactant properties
- OMRI listed



Label Overview

Approved Uses and Crops

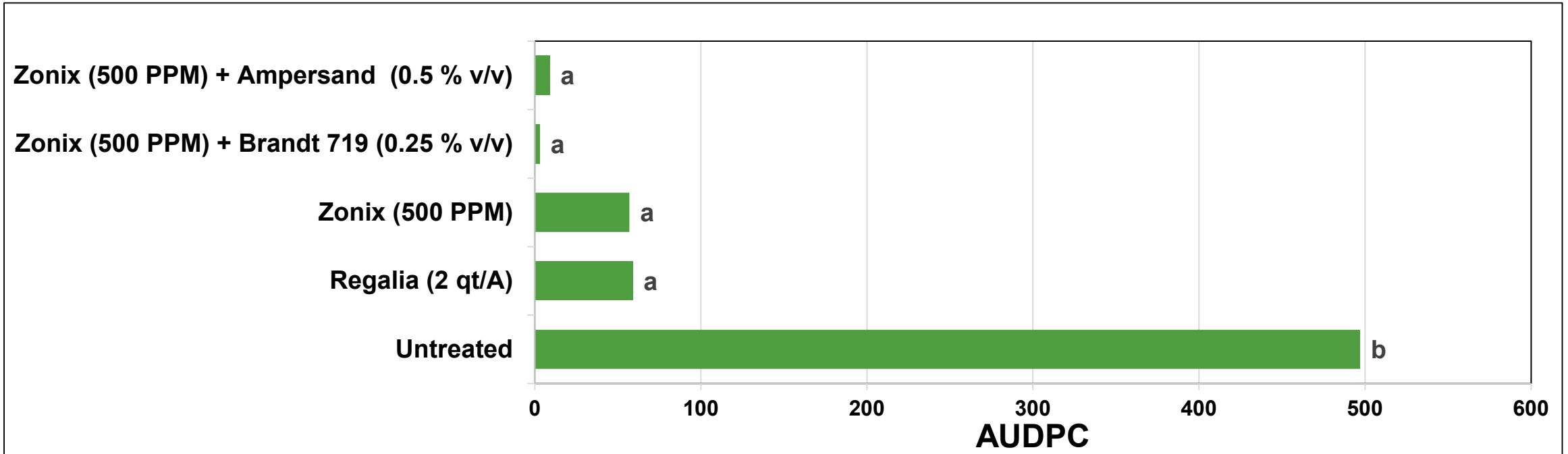
Application on seeds, transplants, fruits, vegetables, seedlings, cuttings, roots, and foliage in greenhouse, field, and horticultural crops such as:

- **Root, bulb, and Tuber:** Carrots, onions, potatoes
- **Fruiting Vegetables:** Eggplant, pepper, tomato
- **Leafy Vegetables:** Broccoli, lettuce, spinach
- **Cucurbits:** Cantaloupe, cucumber, squash, watermelon
- **Fruit and Nut Trees:** Almonds, apples, pecans
- **Citrus Fruits:** Orange, lemon, grapefruit
- **Berry Crops:** Blueberry, raspberry, strawberry
- **Grain, Forage Fiber, Oil Crops:** Corn, cotton, oats, rice, wheat
- **Vine Crops:** Grapes, kiwi, passion fruit
- **Herbs:** Mint, parsley
- **Tobacco and other specialty crops**
- **Ornamental plants in beds, nurseries and greenhouses**
- **Turfgrass in parks, golf courses, sod farms, lawns, and public grounds**



Powdery Mildew AUDPC on Hemp

University of Tennessee, Knoxville, TN (2022)



- *The trial was conducted in a greenhouse.*
- *All fungicide treatments were applied three times on a 7-day treatment interval.*
- *The first fungicide application was applied one day before inoculation.*
- *The treatment application method was spray to wet.*



Future Uses

Stepan invites the expression of interests

Seed treatment or soil-applied applications



Post-harvest applications



Dr. Gary Vallad UFL



THANK YOU

for your attention



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