



Fungicide

THEIA[®]

f u n g i c i d e



A Full-Spectrum Approach to Crop Protection

Theia[®] fungicide provides robust, broad-spectrum protection against a variety of foliar and soil diseases in hops and other crops. Through multiple modes of action, Theia fungicide blocks fungal, bacterial, and oomycete pathogens as well as activates crops' natural defenses.

Active Ingredient
Bacillus subtilis strain AFS032321

Formulation
Dry flowable

Recommended Use Rate
1.5-3 lbs/A

Key Features and Benefits

- High fungicidal and bactericidal activity provides return on investment, fewer SKUs, and peace of mind
- Multiple modes of action for robust broad-spectrum control and low resistance risk
- 4-hour REI and 0-day PHI give harvest flexibility and worker protection
- U.S. residue tolerance exemption and no MRLs fit with food value chain and exports
- Robust formulation with excellent (2 year) shelf life and no special storage requirements
- Compatible with chemicals, adjuvants, and antibiotics for tank mix flexibility
- OMRI listed for use in organic in addition to conventional cropping systems

Target Diseases for Treatment with Theia Fungicide

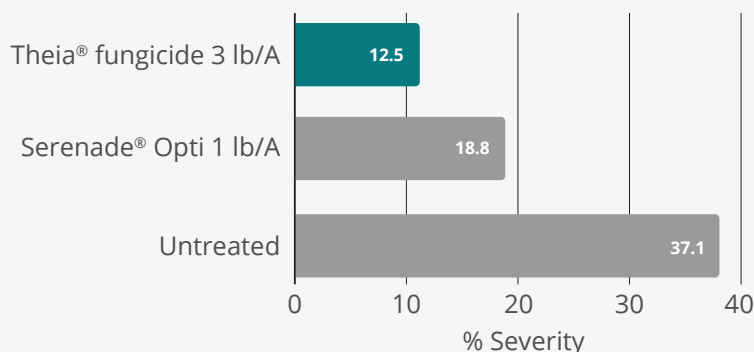
- Downy Mildew
- Phytophthora
- Powdery Mildew
- Pythium



Proof in the Performance

Downy and powdery mildews are two of the biggest disease threats to hop yield and quality. Downy mildew has the potential to be particularly devastating in humid regions. Powdery mildew can reduce the quality and yield of cones, leading to unsalable crops in severe cases. Preventative fungicide applications and cultural practices to reduce inoculum are key management practices for both diseases^{1,2}.

Percent Severity of Downy Mildew (29 DA-A)



Theia® fungicide reduced severity of downy mildew compared to untreated hop plants and those treated with Serenade® Opti.

2020 Hubbard, Oregon. 4 foliar applications April 13 to May 26. 50 GPA. Percent severity rating 0-100 scale.

Theia fungicide prevented secondary infections and the spread of downy and powdery mildew.

Untreated hop plants infected with downy mildew and powdery mildew before treatment.



Theia fungicide-treated hops after three applications (10-day intervals).

2021 on-farm demo, Moxee, WA. "Simcoe" hop variety. Three applications at 3 lbs/A in 50 GPA were made on 10-day intervals using an air-blast sprayer. All treatments contained a nonionic surfactant.

¹Turner S.F. et al. 2011. Challenges and opportunities for organic hop production in the United States. *Agronomy Journal* 103: 1645-1654.

²Classen B.J et al. 2022. Fungicide physical mode of action: Impacts on suppression of hop powdery mildew. *Plant Disease* 106: 1244-1252.