

Biopesticides for Managing Phytophthora Blight in Cucurbits and Other Vegetables

Margaret Tuttle McGrath, Plant Pathology and Plant-Microbe Biology Section
Cornell University, Long Island Horticultural Research and Extension Center
3059 Sound Avenue, Riverhead, NY 11901
mtm3@cornell.edu; <http://blogs.cornell.edu/livegpath/>;
<http://vegetablemdonline.ppath.cornell.edu/>

There are several products with a microbial organism (bacterium or fungus) as the active ingredient that are labeled for application to soil and/or foliage to manage the blight pathogen, *Phytophthora capsici*. They are approved for organic production. Biopesticides are recommended applied at low rate frequently rather than high rate once. They are also suggested used in combination based on the organism: *Bacillus* (Double Nickel, Serenade, Taegro), *Gliocladium* (SoilGard), *Streptomyces* (Actinovate), and *Trichoderma* (Bio-Tam, RootShield Plus). For foliar applications they are recommended used in combination with copper fungicide. Regalia is another biopesticide labeled for application to foliage to manage Phytophthora blight. Its active ingredient is a plant extract. Biopesticides should be used in combination with cultural practices for Phytophthora blight, in particular managing soil moisture, to maximize control achieved.

Products listed by labeled use pattern:

1. broadcast apply to soil up to 7 days before planting; immediately incorporate with irrigation (best) or light cultivation: Bio-Tam.
2. seed treatment as a spray or dry coating: Actinovate.
3. drench to seedlings before transplanting: Bio-Tam, RootShield Plus (in greenhouse), Serenade ASO (pepper), SoilGard, Taegro
4. in-furrow during planting: Actinovate, Bio-Tam, Double Nickel, RootShield Plus, Serenade ASO, Taegro
5. in transplant water: RootShield Plus, SoilGard
6. banded over the row: Bio-Tam, Taegro
7. basal directed spray: Bio-Tam, SoilGard, Taegro
8. through drip irrigation: Actinovate, Bio-Tam, Double Nickel, RootShield Plus, SoilGard, Taegro
9. foliage: Actinovate, Double Nickel, Regalia, Serenade

Please Note: The specific directions on fungicide labels must be adhered to -- they supersede these recommendations, if there is a conflict. Any reference to commercial products, trade or brand names is for information only; no endorsement is intended.

Prepared July 2017.