

## **Powdery Mildew Management with Biopesticides on Greenhouse Grown Plants**

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### **Background**

Greenhouse production of vegetables and herbs is a growth industry in New York State. There were 123 operations and 2,568 acres in production listed (USDA's 2014 Census of Horticultural Specialties). The total acreage of high tunnel, hydroponic, and traditional greenhouses growing food crops to harvest increased by 58% since 2009. There is also a trend in floriculture greenhouses to increase vegetable transplant production due to the increased interest in home vegetable gardening, and to add vegetable production.

Disease issues differ in field and greenhouse vegetable production, and conventional pesticides registered for ornamentals are rarely labeled for food crops in greenhouses. Growers request information about an integrated approach to pest management, including cultural methods and biopesticides. Our objectives for this ongoing project are to gain first hand experience with biopesticides and to develop efficacy data.

### **Procedures**

All trials were conducted in greenhouse maintained at 18-24° C. Susceptible cultivars of zucchini 'Raven' and zinnia ('Envy') were grown in 3 qt pots in peat based media in a randomized complete block design. After powdery mildew first appeared treatments began at weekly intervals. Products were applied at labeled rates until foliage was wet. Ratings were taken 21 days after weekly treatments began. The fourth and fifth leaves from the growing point were evaluated for the percentage of the leaf area symptomatic.

### **Results & Discussion**

This year's treatments were informed by the performance of products in previous years. The top performers for suppressing powdery mildew were included. They were Regaila, Milstop and Suffoil X in addition we added a new thyme oil based product, Thyme Guard. Initial data review indicates all were significantly better (average 8% leaf area infected) than the water control treatment (45% infection.) But the test product in this year's trial were suppressing at about the same level and were not statistically different from each other. We plan for one more round in 2017, will conduct data analyses and then publish this work in Plant Disease Management Reports.