

Evaluation of fungicides allowed for organic production on downy mildew of cucumber, 2011.

The trial was conducted on a field managed using practices allowed for organic production since 2008 at the New York State Experiment Station in Geneva, NY. An overwintered rapeseed cover crop was plowed under in May. 'Diva' seeds were sown into 50 cell flats in an organic mix on 15 Jun. Seedlings were maintained in the greenhouse and watered regularly until transplanted on 12 Jul. The transplants were set by hand into raised beds with 1.25 mil black polyethylene and drip irrigation with a solution of 0.5oz/gal Fertrell fish oil emulsion applied to each planting hole at transplant. Annual ryegrass was seeded between the rows for weed control. Five treatments and an untreated control were arranged in a randomized complete block design with three replications. Each plot consisted of five plants spaced 18 in apart with 7 ft between rows and 3 feet between treatments. The cucumbers were irrigated to provide approximately 1 in of water per week during the trial. Sprays were applied with a CO₂ pressurized backpack sprayer at 40 psi delivering 40 gal/A through two TeeJet 8002VS flat fan nozzles spaced 19 in apart. The first spray was applied 4 Aug just prior to the first downy mildew report in New York. Two more sprays were applied on 14 and 21 Aug and plants were evaluated for the percent leaf area covered with downy mildew lesions three times 10-24 Aug. These data were evaluated using the area under the disease progress curve (AUDPC). Average maximum temperatures for Jul and Aug were 84.7 and 78.2°F; average minimum temperatures were 63.8 and 60.7°F. Rainfall amounts (in.) were 0.72 and 6.84 for Jul and Aug, respectively.

The downy mildew moved into the field slowly with a very low severity until after the second rating in mid Aug. Nordox and Sonata significantly reduced disease severity compared to the non-treated control plots by the last rating. The OxiDate, Sporatec, and Serenade treatments showed a reduction in disease severity, but it was not of statistical significance. No phytotoxicity was observed with any of the treatments.

Treatment and Rate/A	AUDPC ^z mean ^y
Sporatec AG 3 pt.....	408.0 abc
Sonata 4 qt.....	122.7 bc
Serenade Max 3lb.....	463.2 ab
OxiDate FL 128 oz +	
Yucca Ag Aide 0.125%.....	203.5 abc
Nordox 75 WG 1.25 lb.....	72.0 c
Non-treated control na.....	585.8 a

^zArea Under the Disease Progress Curve

^y values not connected by the same letter are significantly different (as determined by Fishers LSD $P=0.05$)