

Evaluation of fungicides allowed for organic production on foliar diseases of tomato, 2012.

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. ‘Celebrity’ tomato seeds were sown into 50 cell flats in an organic mix on 23 Apr. Seedlings were maintained in the greenhouse and watered regularly until transplanted on 15 Jun. Manure was applied at 300 lb/A the previous Sep. A fall cover crop of oats was plowed under and Fertrell 5-5-3 was applied under the plastic at 18 lb/A. The seedlings were transplanted into raised beds with 1.25 mil black polyethylene and drip irrigation with 0.5 oz/gal Fertrell fish oil emulsion applied to each planting hole during transplant. Annual ryegrass was seeded between the rows for weed control. Seven treatments and an untreated control were arranged in a randomized complete block design with four replications. Each plot consisted of six plants spaced 18 in apart with 7 ft between rows and 3 feet between treatments. The tomatoes were irrigated to provide approximately 1 in of water per week. Sprays were initiated when 25 Disease Severity Values had accumulated using the TOMCAST forecasting system on 2 Aug. Field treatments were applied on a seven day schedule continuing through 12 Sep for a total of 6 applications. 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. Assessments of the number of plants infected as well as the severity of the symptoms were made weekly from 13 Aug to 12 Sep. The severity of disease was rated by estimating the percentage of leaf tissue displaying early blight symptoms. These data were evaluated using the area under the disease progress curve (AUDPC) to analyze differences between treatments. Average maximum temperatures for Jun, Jul, and Aug were 74, 84, and 81°F; average minimum temperatures were 55, 6, and 60°F. Rainfall amounts (in.) were 0.3, 2.8, and 2.3, respectively.

Jul and Aug were hot and dry and disease progressed slowly. Only 0.3 in of rain fell between the third and final ratings yet the percentage of early blight infections were double or greater for all but a few of the plots. The Cueva treatment was the only one which showed a significant decrease in disease severity from the untreated control plots. All of the other treatments with the exception of OxiDate had numerically fewer early blight lesions than the untreated control, but differences were not statistically significant. There was no phytotoxicity noted with any treatment.

Treatment and rate	AUDPC ^z
Sporatec AG 3 pt/A	80.7 ab ^y
Sonata 4 qt/A.....	72.9 ab
Serenade Max 3lb/A.....	97.4 ab
OxiDate FL 128 oz/A	
+Yucca Ag Aide FL 0.125% (v/v).....	88.5 ab
Yucca Ag Aide FL 0.125% (v/v).....	111.2 ab
OxiDate FL 128 oz/A.....	184.2 a
Cueva FL 0.5 gal/100 gal	52.4 b
Non-treated control.....	141.1 a

^zArea Under the Disease Progress Curve

^yNumbers followed by the same letter are not significantly different as determined by Fishers LSD *P*=0.05