

**Evaluation of fungicides for downy mildew control on cucumber, Clinton, NC 2021.**

The experiment was conducted at the Horticultural Crops Research Station in Clinton, NC. Plots were single raised beds on 5-ft centers covered with white plastic mulch; 14-ft long with 5-ft fallow borders on each end and non-treated guard rows on each side. Cucumber was direct seeded on 11 Aug (2-ft in-row spacing, 2 seed/hill) and thinned to one plant per hill after emergence (7 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape following the growing standards for cucumbers. Treatments were assessed in a randomized complete block design with four replicates. Seven fungicide treatments were applied using a CO<sub>2</sub>-pressurized backpack sprayer equipped with a hollow cone nozzle (TXVS-26) delivering 40 gal/A at 45 psi. Applications were made on 31 Aug, 8 Sep, 14 Sep, 23 Sep, 29 Sep and 6 Oct. Disease severity was assessed on 8, 14, 23, 29 Sep, 6 and 13 Oct as percent leaf area with necrosis per plot. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher’s protected least significant difference (LSD) test to separate the means.

Downy mildew was first detected on 31 Aug at approximately 1% disease severity in the field and progressed throughout the course of the trial. When the last disease severity rating was obtained on 13 Oct, all treatments but Revus were statistically different from the non-treated control. Marketable and unmarketable yields (data not shown) were obtained the total marketable yields show the treatment Presidio was significantly better than the non-treated control and the other treatments.

Treatments	Rate (fl oz /acre)	Disease Severity <sup>z</sup> 29 Sept – Week 7	Last Disease Severity <sup>y</sup> 13 Oct	Yields <sup>x</sup>
Non-treated control	--	68.8 a <sup>w</sup>	94.5 a	23.50 a
Ranman 400 SC	2.75	52.5 bc	70.5 bc	25.83 a
Orondis Opti	32.0	50.0 bc	73.0 b	24.00 a
Previcur Flex	19.2	51.3 bc	63.5 c	20.55 a
Omega 500F	24.0	33.5 d	53.8 d	32.68 a
Zampro	14.0	51.3 bc	69.5 bc	23.60 a
Presidio	4.0	41.3 cd	48.0 d	48.78 b
Revus	8.0	62.5 ab	87.8 a	17.75 a

<sup>z</sup>Disease rating scale based on percent necrotic foliage caused by *P. cubensis*. / Week 7 – 29 Sep.

<sup>y</sup>Disease rating scale based on percent necrotic foliage caused by *P. cubensis*. / Last data point 13 Oct.

<sup>x</sup>Total marketable yields (lbs./treatment).

<sup>w</sup>Treatments followed by the same letter(s) within a column are not statistically different ( $P=0.05$ , Fisher’s Protected LSD).