

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

The experiment was conducted at the Horticultural Crops Research Station in Clinton, NC. Experimental 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. Treatments were randomized into four complete blocks. 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. A non-treated control was included. Disease severity per plot was assessed on 8, 14, 23, 29 Sep, 6 and 13 Oct. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant differences (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 experiment. At the last disease severity assessment on 13 Oct, all treatments, except Revus, were statistically different than the non-treated control. Omega, Presidio, and Orondis Opti treatments resulted in the lowest disease severity values at the end of the experiment. Marketable and unmarketable yields (data not shown) were obtained, and Presidio had significantly higher marketable yields than other treatments.

Treatments	Rate (Fl oz /Acre)	Disease Severity <sup>z</sup>	Marketable Yields <sup>y</sup> (lbs./treatment)
Non-treated control	--	68.75 d <sup>x</sup>	23.50 a
Ranman 400 SC Cyazofamid 34.5%	2.75	52.50 b c	25.83 a
Orondis Opti Chlorothalonil 33.2% Oxathiapiprolin 0.5%	32.0	50.00 b	24.00 a
Previcur Flex Propamocarb hydrochloride 66.5%	19.2	51.25 b c	20.55 a
Omega 500F Fluazinam 40.0%	24.0	33.50 a	32.68 a
Zampro Ametoctradin 26.9% Dimethomorph 20.2%	14.0	51.25 b c	23.60 a
Presidio Fluopicolide 39.5%	4.0	41.25 a b	48.78 b
Revus Mandipropamid 23.3%	8.0	62.50 c d	17.75 a

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

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

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