

Evaluation of fungicides for control of downy mildew on cucumber, Sampson County 2013.

The experiment was conducted in a commercial cucumber field near Clinton, NC (N35°03.755'; W078°17.005'). Plots were double row beds on 6-ft centers covered with black plastic mulch; 20-ft long with 5-ft fallow borders at each end. The previous year the field was planted with pepper followed by cucumber. Cucumbers were direct seeded in the field on 20 Aug with 40 plants/plot (12 in. in-row spacing). Irrigation and fertilization were applied via drip tape. Treatments were randomized into four complete blocks. Fungicide treatments were applied using a CO₂-pressurized backpack sprayer equipped with hollow cone nozzles (TXVS-26) delivering 40 gal/A at 45 psi. The first spray application was made with a single-nozzle boom and the last five with a two-nozzle boom (19-in. spacing). Applications were made on a 7-day interval: 3, 10, 17 and 24 Sep and 1 and 8 Oct. Disease severity was assessed on 24 Sep and 1, 8 and 15 Oct as percent necrotic foliage. Data was analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and the Waller-Duncan test to separate means.

Downy mildew was first detected on 3 Sep at about 1% disease severity in the field. Disease progressed slowly throughout the trial due to the absence of non-treated border rows beside each plot. Ranman and Previcur Flex applied alone provided the best control of *P. cubensis*. Zampro applied alone and in combination treatments with Ranman, Presidio and Manzate Pro-Stick all provided moderate efficacy against downy mildew. In the table, treatments are sorted by disease severity on 15 Oct.

Treatment and rate of product per acre, applied at 7-day intervals	Disease Severity* [%]			
	24 Sept	1 Oct	8 Oct	15 Oct
Ranman 400SC 2.75 fl oz + Matrixx 100L 0.25% v/v	7.3 c**	11.5 e	17.5 g	19.8 f
Previcur Flex 6F 1.2 pt.....	8.8 c	13.5 e	18.3 g	21.0 f
Zampro 525SC 14 fl oz + Matrixx 100L 0.25% v/v	14.3 b	17.8 d	26.5 f	34.3 e
Zampro 525SC 14 fl oz + Matrixx 100L 0.25% v/v + Manzate Pro-Stick 75DG 2 lb alt w/ Ranman 400SC 2.75 fl oz + Matrixx 100L 0.25% v/v + Manzate Pro-Stick 75DG 2 lb	16.5 b	22.8 bc	35.8 cde	39.3 de
Presidio 4SC 4 fl oz + Matrixx 100L 0.25% v/v + Manzate Pro-Stick 75DG 2 lb at w/ Ranman 400SC 2.75 fl oz + Matrixx 100L 0.25% v/v + Manzate Pro-Stick 75DG 2 lb alt w/ Zampro 525SC 14 fl oz + Matrixx 100L 0.25% v/v + Manzate Pro-Stick 75DG 2 lb	16.0 b	22.5 bc	33.8 de	39.5 de
Gavel 75DF 2 lb	13.5 b	19.8 cd	37.8 cd	40.5 cd
Curzate 60DF 5 oz	13.5 b	17.3 d	33.0 e	45.8 c
Tanos 50WG 8 oz.....	14.8 b	19.8 cd	40.0 c	60.5 b
Presidio 4SC 4 fl oz + Matrixx 100L 0.25% v/v	17.3 b	25.5 b	46.5 b	62.8 b
Non-Treated	23.5 a	37.3 a	64.3 a	79.5 a

* Disease rating scale based on percent necrotic foliage caused by *P. cubensis*.

** Treatments followed by the same letter(s) within a column are not statistically different ($P=0.05$, Waller-Duncan $k=100$).