

**Evaluation of fungicides for control of downy mildew on cucumber, Cleveland 2015.**

The experiment was conducted at the Piedmont Research Station in Cleveland, NC (N35°41.856'; W080°37.731'). Plots were single beds on 5-ft centers, covered with black plastic mulch; 14-ft long with 5-ft fallow borders at each end. The previous year the field was planted with raspberry followed by rye as a cover crop. Cucumber was direct seeded on 12 Aug (2-ft in-row spacing, 2 seed/hill) in raised beds and thinned to one plant per hill after emergence (7 plants/plot). Irrigation and fertilization were applied via drip tape. Treatments were randomized into four complete blocks. Fungicide treatments were applied using a CO<sub>2</sub>-pressurized backpack sprayer equipped with hollow cone nozzles (TXVS-26) delivering 40 gal/A at 45 psi. The first two spray applications were made with a single-nozzle boom and the last three with a 2-nozzle boom (19 in. spacing). Applications were made on 7-day intervals: 9, 15, 23 and 30 Sep and 7 Oct. Fruit were harvested on 6 and 12 Oct. Disease severity was assessed on 30 Sep and 7 and 15 Oct as percentage of foliage with necrosis per plot. Data were 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 15 Sep at approximately 1% disease severity in the field and progressed rapidly throughout the remainder of the trial. Previcur Flex and Ranman were effective in managing *P. cubensis*. Zing! and Ariston also controlled downy mildew when compared to the non-treated. None of the other treatments provided commercially acceptable levels of disease control. No phytotoxicity was observed. In the table, treatments are sorted by disease severity on 15 Oct.

Treatment and rate of product per acre	Application No.	Disease Severity* (%)		
		30 Sep	7 Oct	15 Oct
Previcur Flex 6F 1.2 pt	1-5	4.0 c**	8.0 d	25.8 e
Ranman 3.33SC 2.75 fl oz	1-5	3.5 c	13.0 cd	29.0 de
Zing! 4.9SC 36 fl oz	1-5	6.8 c	18.5 c	42.5 cd
Ariston 37.2SC 3 pt	1-5	3.0 c	10.0 cd	42.8 c
Aliette 80WG 6.25 lb	1-5	8.3 bc	30.3 b	59.0 b
Oso 5SC 13 fl oz + Induce 90L 0.250 % v/v	1-5	14.0 ab	42.0 a	72.8 a
OxiPhos 14L 42.3 fl oz/100 gal	1-5	18.3 a	46.5 a	79.3 a
Non-treated	N/A	20.0 a	49.8 a	82.8 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  $k=100$ ).