

**Evaluation of fungicides for control of downy mildew on cucumber, Kinston 2013.**

The experiment was conducted at the Cunningham Research Station in Kinston, NC (N35°18.050'; W077°34.572'). Plots were single beds on 5-ft centers covered with black plastic mulch; 18-ft long with 6-ft fallow borders on each end and non-treated guard rows on each side. The previous year the field was planted with sweetpotato. Cucumber was direct seeded on 13 Aug (1.5-ft in-row spacing, 2 seed/hill) in raised beds and thinned to one plant per hill after emergence (9 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 four with a 2-nozzle boom (19-in. spacing). Applications were made on a 7-day interval: 9, 16, 23 and 30 Sep and 7 and 14 Oct. Disease severity was assessed on 26 Sep and 3, 10, 17 and 24 Oct as percent leaf area with necrosis. 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. Fruit were harvested on 26 Sep and 3, 10 and 17 Oct.

Downy mildew was first detected on 9 Sep at approximately 1% disease severity in the field and progressed throughout the course of the trial. Both the high rate and the low rate of A18269A were highly effective in controlling downy mildew. The high rate of A18269A also produced the greatest weight of total marketable fruit. Previcur Flex and Ranman (high rate) applied alone as well as the three combination treatments containing alternations of Presidio, Previcur Flex, Zampro and Ranman + Bravo Weather Stik performed similarly in moderately controlling *P. cubensis*. No other treatments provided commercially acceptable levels of disease control. In the table, treatments are sorted by disease severity on 24 Oct.

Treatment and rate of product per acre, applied at 7-day intervals	Disease Severity* [%]			Yield
	26 Sept	10 Oct	24 Oct	Lbs. Marketable
A18269A (high) 0.83OD 0.6 fl oz .....	3.2 m**	6.8 m	9.0 j	37.3 a
A18269A (low) 0.83OD 0.3 fl oz .....	5.8 kl	12.3 m	12.3 j	31.9 abc
Previcur Flex 6F 1.2 pt.....	8.4 i-l	21.8 l	38.8 i	29.8 a-d
Presidio 4SC 4 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Previcur Flex 6F 1.2 pt + Bravo Weather Stik 6SC 2 pt alt w/ Zampro 525SC 14 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt.....	7.2 jkl	24.5 l	39.5 i	32.9 ab
Presidio 4SC 4 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Previcur Flex 6F 1.2 pt + Bravo Weather Stik 6SC 2 pt alt w/ Ranman 400SC 2.75 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt.....	8.7 ijk	27.3 kl	42.5 i	28.6 a-e
Zampro 525SC 14 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Previcur Flex 6F 1.2 pt + Bravo Weather Stik 6SC 2 pt alt w/ Ranman 400SC 2.75 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt.....	8.7 ijk	23.0 l	43.0 i	30.3 a-d
Ranman (high) 400SC 2.75 fl oz + Induce 90L 0.25% v/v .....	5.6 l	22.5 l	44.0 i	32.6 abc

Presidio 4SC 4 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Tanos 50WG 8 oz + Bravo Weather Stik 6SC 2 pt alt w/ Ranman 400SC 2.75 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt.....	10.2 hji	36.3 hij	65.0 h	28.1 a-f
Ranman 400SC 2.75 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Tanos 50WG 8 oz + Bravo Weather Stik 6SC 2 pt alt w/ Gavel 75 DF 2 lb .....	6.7 kl	39.0 gh	65.3 h	28.4 a-e
Presidio 4SC 4 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Gavel 75 DF 2 lb alt w/ Ranman 400SC 2.75 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt.....	14.0 e-h	40.0 gh	69.0 gh	24.9 b-f
Zampro 525SC 14 fl oz + Induce 90L 0.25% v/v Bravo Weather Stik 6SC 2 pt alt w/ Gavel 75 DF 2 lb alt w/ Tanos 50WG 8 oz + Bravo Weather Stik 6SC 2 pt.....	16.5 c-f	39.0 gh	69.5 fgh	29.6 a-d
Gavel 75 DF 2 lb .....	16.0 def	38.3 ghi	71.3 e-h	24.8 b-f
Presidio 4SC 4 fl oz + Induce 90L 0.25% v/v + Bravo Weather Stik 6SC 2 pt alt w/ Tanos 50WG 8 oz + Bravo Weather Stik 6SC 2 pt alt w/ Gavel 75 DF 2 lb .....	10.5 hij	39.3 gh	72.5 e-h	26.3 b-f
Ranman (low) 400SC 2.1 fl oz + Induce 90L 0.25% v/v .....	10.6 ghi	31.8 jk	74.0 d-g	29.5 a-d
V-10208 (low) 3.2 FS 8 fl oz .....	11.1 ghi	34.0 hij	74.8 c-g	23.8 b-g
V-10208 (high) 3.2 FS 10 fl oz .....	13.4 fgh	32.3 ijk	76.8 c-f	26.7 b-f
Bravo Weather Stik (low) 6SC 2 pt ....	17.7 b-f	47.5 def	78.0 cde	21.9 d-g
Bravo Weather Stik (high) 6SC 3 pt ...	21.4 b	54.5 c	78.8 cde	20.8 d-g
Manzate Pro-Stick (low) 75 DG 2 lb ..	22.6 ab	49.8 cde	80.3 cd	18.5 fg
Zampro 525SC 14 fl oz + Induce 90L 0.25% v/v .....	16.5 c-f	42.8 fg	81.3 cd	26.5 b-f
Manzate Pro-Stick (high) 75 DG 3 lb .	18.2 b-e	50.5 cd	81.8 c	22.9 c-g
Tanos 50WG 8 oz.....	14.6 d-g	43.8 efg	91.8 b	24.3 b-f
Presidio (low) 4SC 3 fl oz + Induce 90L 0.25% v/v .....	20.8 bc	63.3 b	92.8 ab	19.2 efg
Presidio (high) 4SC 4 fl oz + Induce 90L 0.25% v/v .....	19.2 bcd	56.0 c	96.3 ab	24.2 b-f
Non-Treated .....	27.1 a	81.0 a	99.5 a	14.0 g

\* 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  $k=100$ ).