

Evaluation of fungicides for control of anthracnose on cucumber, Cleveland 2016.

The experiment was conducted at the Piedmont Research Station in Cleveland, NC (N35°41.802'; W080°37.729'). Plots were single beds on 5-ft centers, covered with white plastic mulch; 14-ft long with 5-ft fallow borders at each end. The previous year the field was planted with raspberry. Cucumber was direct seeded on 11 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 (20-20-20, N-P-K) were applied via drip tape on 23 and 30 Sep. 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 three spray applications were made with a single-nozzle boom and the last five with a 2-nozzle boom (19 in. spacing). Applications were made on 8, 15, 22 and 28 Sep and 6, 13, 20 and 27 Oct. Fruit were harvested on 27 Sep and 4, 14 and 21 Oct and 7 Nov. Plots were inoculated with a spore suspension weekly: 21 and 27 Sep and 5, 12, 19 and 27 Oct. Disease severity was assessed on 6, 13, 20 and 28 Oct and 2 Nov 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.

Anthracnose was first detected on 8 Sep at approximately 1% disease severity in the field and progressed throughout the remainder of the trial. Pristine, Merivon and Bravo Weather Stik were the most effective treatments in controlling anthracnose followed by Quadris Top and Zing! 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 2 Nov.

| Treatment and rate of product per acre | Application no. ^y | Disease severity ^z (%) | | |
|--|------------------------------|-----------------------------------|---------|---------|
| | | 20-Oct | 28-Oct | 2-Nov |
| Pristine 38WG 18.5 oz | 1-8 | 26.3 cd ^x | 35.3 d | 44.8 d |
| Merivon 42.5SC 5.5 fl oz | 1-8 | 26.3 cd | 36.5 d | 46.8 d |
| Bravo Weather Stik 6SC 2 pt | 1-8 | 26.5 cd | 37.0 d | 47.5 d |
| Quadris Top 2.08SC 14 fl oz | 1-8 | 30.5 bcd | 39.0 cd | 48.3 cd |
| Zing! 4.9SC 14 fl oz | 1-8 | 25.5 d | 37.8 cd | 49.3 cd |
| Inspire Super 2.82EW 20 oz | 1-8 | 35.5 b | 48.0 bc | 60.8 bc |
| Manzate Pro-Stick 75DG 2 lb | 1-8 | 32.3 bc | 50.0 b | 66.3 b |
| Non-treated | N/A | 45.3 a | 62.5 a | 80.8 a |

^z Disease rating scale based on percent necrotic foliage caused by *C. orbiculare*.

^y Application dates: 1=8 Sep, 2=15 Sep, 3=22 Sep, 4=28 Sep, 5=6 Oct, 6=13 Oct, 7=20 Oct and 8=27 Oct.

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