

Evaluation of fungicides for control of Phytophthora blight of pepper, Jackson Springs 2014.

The experiment was conducted at the Sandhills Research Station in Jackson Springs, NC (N35°11.740'; W079°40.997'). Plots were single beds on 42 in. centers on bare ground; 12-ft long with 5-ft fallow borders on each end and non-treated guard rows on each side. The previous year the field was planted with wheat followed by rye as a cover crop. Pepper was transplanted on 11 Jun (1-ft in-row spacing) in raised beds (12 plants/plot). Irrigation was applied using overhead sprinklers to promote disease. Treatments were randomized into four complete blocks. On 23 Jun, plots were inoculated with 10 ml of *P. capsici*-infested oat grain at the base of each plant and covered with soil. Fungicide foliar treatments were applied using a CO₂-pressurized backpack sprayer equipped with a single-nozzle, handheld boom with a hollow cone nozzle (TXVS-26) delivering 40 gal/A at 45 psi. The soil-directed drench (Dr) applications were applied at 80 gal/A and directed at the base of the plant. Applications were made on 11 and 25 Jun and 8 and 24 Jul. Disease incidence was assessed on 8, 16, 24 and 31 Jul. 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.

Phytophthora blight was first detected on 2 Jul at low levels (5%). Disease progressed rapidly throughout the course of the trial. Combination treatments with V-10208 applied as a soil-directed drench then followed by foliar spray alternations of Presidio, V-10208 and Revus reduced the percentage of plant death caused by *P. capsici* when compared to the non-treated plots. No other treatment controlled Phytophthora blight. No phytotoxicity was observed. In the table, treatments are sorted by the final disease rating on 31 Jul.

Treatment and rate per acre	Application No.	Plant Death ^z (%)			
		8 Jul	16 Jul	24 Jul	31 Jul
V-10208 (Dr) ^y 4SC 8 fl oz	1				
Presidio (Dr) 4SC 4 fl oz	2, 4				
V-10208 4SC (Dr) 8 fl oz	3	0.0 a ^x	27.1 a	37.5 a	50.0 b
V-10208 (Dr) 4SC 8 fl oz	1				
Presidio 4SC 4 fl oz	2, 4				
V-10208 4SC 8 fl oz	3	2.1 a	35.4 a	45.9 a	70.8 ab
Ridomil Gold EC (Dr) 4EC 1.0 pt	1				
Revus 2.08SC 8 fl oz	2, 4				
Ridomil Gold Copper 65WP 2.0 lb	3	0.0 a	37.5 a	52.1 a	79.2 a
Zonix (Dr) 8.5L 18 fl oz	1				
Zonix 8.5L 18 fl oz	2-4	2.1 a	20.8 a	43.8 a	81.3 a
Presidio (Dr) 4SC	1				
V-10208 4SC	2, 4				
Presidio 4SC	3	2.1 a	31.2 a	52.1 a	83.3 a
Zonix (Dr) 8.5L 45 fl oz	1				
Zonix 8.5L 45 fl oz	2-4	0.0 a	43.8 a	60.4 a	85.4 a
Presidio (Dr) 4SC 4 fl oz	1				
Revus 2.08SC 8 fl oz	2, 4				
Presidio 4SC 4 fl oz	3	2.1 a	25.0 a	43.8 a	85.4 a
Zonix (Dr) 8.5L 30 fl oz	1				
Zonix 8.5L 30 fl oz	2-4	0.0 a	37.5 a	58.3 a	89.6 a
Non-treated	1-4	2.1 a	39.6 a	62.5 a	89.6 a

^z Disease rating scale based on the percentage of dead plants caused by *P. capsici*

^y Soil-directed drench

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