

Evaluation of fungicides for control of Phytophthora blight of pepper, Jackson Springs 2015.

The experiment was conducted at the Sandhills Research Station in Jackson Springs, NC (N35°11.049'; W079°40.802'). Plots were single beds on 5-ft centers covered with black plastic mulch; 25-ft long with 5-ft fallow borders on each end. The previous year the field was planted with watermelon followed by rye as a cover crop. Pepper was transplanted on 22 May (1-ft in-row spacing) in raised beds (25 plants/plot). Irrigation and fertilization were applied via drip tape. Treatments were randomized into four complete blocks. On 8 and 15 Jun, plots were inoculated with 1g of *P. capsici*-infested millet seed 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. A soil-directed drench application (100 mL) was applied at the base of each plant on 22 May immediately after transplanting. Applications were made on 7-day intervals: 22 and 29 May and 3, 11, 18 and 25 Jun and 2 Jul. Disease incidence was assessed on 15, 18 and 25 Jun and 2, 8 and 16 Jul. 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.

Phytophthora blight was first observed on 15 Jun at low levels (3% incidence). Disease progressed throughout the course of the trial reaching 70% in the non-treated plots. The combination treatment of Experimental + Ridomil Gold SL provided excellent control of Phytophthora blight. Treatments containing alternations of Presidio, V-10208, Revus, Ridomil Gold SL and Ridomil Gold Copper applied as either drench; foliar spray or drip application also controlled *P. capsici*. In the table, treatments are sorted by disease incidence on 16 Jul.

Treatment and rate of product per acre	Application No.	Disease Incidence* (%)		
		18 Jun	2 Jul	16 Jul
Experimental (Drench) 6.84 fl oz	1			
Ridomil Gold 480SL (Drench) 4.28 fl oz	1	1.2 d** (5%)	1.3 e (5%)	2.0 c (8%)
Presidio 4SC (Drench) 4 fl oz	1			
V-10208 4SC (Drip) 8 fl oz	2,6			
Presidio 4SC (Drip) 4 fl oz	4			
Revus 2.08SC 8 fl oz	3,5,7	2.9 cd (12%)	6.0 cde (24%)	7.5 bc (30%)
V-10208 4SC (Drench) 8 fl oz	1			
Presidio 4SC (Drip) 4 fl oz	2,4,6			
V-10208 4SC (Drip) 8 fl oz	3,5,7	6.0 bc (26%)	7.8 cd (31%)	8.0 bc (32%)
Ridomil Gold 480SL (Drench) 1 pt	1			
Revus 2.08SC 8 fl oz	2,4,6			
Ridomil Gold Copper 65WP 2 lb	3,5,7	5.5 bc (23%)	8.0 cd (32%)	8.3 bc (33%)
Presidio 4SC (Drench) 4 fl oz	1			
V-10208 4SC 8 fl oz	2,4,6			
Presidio 4SC 4 fl oz	3,5,7	4.8 bc (23%)	7.3 cd (29%)	8.3 bc (33%)
Presidio 4SC (Drench) 4 fl oz	1			
V-10208 4SC (Drip) 8 fl oz	2,4,6			
Presidio 4SC (Drip) 4 fl oz	3,5,7	3.0 cd (13%)	5.5 de (22%)	8.3 bc (33%)
V-10208 4SC (Drench) 8 fl oz	1			
Presidio 4SC 4 fl oz	2,4,6			
V-10208 4SC 8 fl oz	3,5,7	5.4 bc (27%)	8.5 cd (34%)	9.5 b (38%)
Experimental (Drip) 6.84 fl oz	1			
Ridomil Gold 480SL (Drip) 4.28 fl oz	1			
Revus 250SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90SL 0.125 % v/v	2,4,6	8.3 b (34%)	11.5 bc (46%)	13.3 ab (53%)
Experimental (Drip) 6.84 fl oz	1			
Ridomil Gold 480SL (Drip) 4.28 fl oz	1	17.1 a (69%)	17.5 a (70%)	17.5 a (70%)
Non-treated	N/A	16.2 a (66%)	16.8 ab (67%)	17.5 a (70%)

* Disease incidence based on the average number of diseased plants per plot (25 plants/plot).

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