

Evaluation of fungicides for control of Phytophthora blight of pepper, Jackson Springs 2016.

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; 20-ft long with 10-ft fallow borders on each end. The previous year the field was planted with rye. Pepper was transplanted on 26 May (1-ft in-row spacing) in raised beds (20 plants/plot). Irrigation and fertilization (25-6-12, N-P-K) were applied via drip tape on 6, 13, 20 and 27 Jun and 5, 11 and 18 Jul. Treatments were randomized into four complete blocks. On 9, 16 and 27 Jun and 1 Jul, 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 (85 mL) was applied at the base of each plant on 26 May immediately after transplanting. Applications were made on 26 May and 2, 9, 16, 23 and 30 Jun and 7 Jul. Disease incidence was assessed on 16, 23 and 30 Jun and 7 and 13 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 16 Jun at low levels (3% incidence). Disease progressed throughout the course of the trial reaching 59% disease incidence in the non-treated plots. The combination treatment of Presidio, Ridomil Gold SL and Orondis Gold provided excellent control of Phytophthora blight. The treatment containing alternations of Presidio, Ridomil Gold SL and V-10208 controlled *P. capsici*. Orondis Gold, Ridomil Gold SL and Presidio also managed Phytophthora well. In the table, treatments are sorted by disease incidence on 13 Jul.

Treatment and rate of product per acre	Application no. ^y	Disease incidence ^z (%)		
		30 Jun	7 Jul	13 Jul
Presidio 4SC (Drench) 4 fl oz	1			
Ridomil Gold 480SL (Drip) 1 pt	2,3,5,7			
Orondis Gold 200SC (Drip) 4.8 fl oz	3,5			
Presidio 4SC (Drip) 4 fl oz	4,6	0.8 a ^x (4%)	1.3 b (7%)	2.3 d (12%)
Presidio 4SC (Drench) 4 fl oz	1			
Ridomil Gold 480SL (Drip) 1 pt	2,7			
V-10208 4SC (Drip) 8 fl oz	3,5			
Presidio 4SC (Drip) 4 fl oz	4,6	2.8 a (14%)	3.3 ab (17%)	4.8 cd (24%)
Orondis Gold 200SC (Drench) 4.8 fl oz	1			
Ridomil Gold 480SL (Drench) 8 fl oz	1			
Orondis Gold 200SC (Drip) 4.8 fl oz	2,4,5			
Ridomil Gold 480SL (Drip) 1 pt	3,7			
Presidio 4SC (Drip) 4 fl oz	6	4.3 a (22%)	4.8 ab (24%)	5.5 bcd (28%)
Orondis Gold 200SC (Drench) 4.8 fl oz	1			
Ridomil Gold 480SL (Drench) 6 fl oz	1			
Revus 2.09SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90L 0.125% V/V	2,4,6	1.5 a (8%)	3.8 ab (19%)	6.0 a-d (30%)
Orondis Gold 200SC (Drench) 2.4 fl oz	1			
Ridomil Gold 480SL (Drench) 3 fl oz	1			
Revus 2.09SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90L 0.125% V/V	2,4,6	1.8 a (9%)	5.5 ab (28%)	7.5 a-d (38%)
Orondis Gold 200SC (Drip) 4.8 fl oz	1			
Ridomil Gold 480SL (Drip) 6 fl oz	1			
Revus 2.09SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90L 0.125% V/V	2,4,6	2.5 a (13%)	6.0 ab (30%)	9.0 a-d (45%)
Orondis Gold 200SC (Drench) 4.8 fl oz	1			
Ridomil Gold 480SL (Drench) 8 fl oz	1			
Presidio 4SC (Drip) 4 fl oz	2,4,6			
V-10208 4SC (Drip) 8 fl oz	3,5			
Ridomil Gold 480SL (Drip) 1 pt	7	3.3 a (17%)	5.8 ab (29%)	9.3 abc (47%)
Presidio (Drench) 4 fl oz	1			
Ridomil Gold 480SL (Drench) 6 fl oz	1			
Revus 2.09SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90SL 0.125 % v/v	2,4,6	2.0 a (10%)	5.5 ab (28%)	9.5 abc (48%)
Non-treated	N/A	3.8 a (19%)	9.8 a (49%)	11.8 ab (59%)
Orondis Gold 200SC (Drip) 2.4 fl oz	1			
Ridomil Gold 480SL (Drip) 3 fl oz	1			
Revus 2.09SC 8 fl oz	2,4,6			
Kocide 3000 46.1DF 1 lb	2-7			
Induce 90L 0.125% V/V	2,4,6	4.8 a (24%)	9.8 a (49%)	12.8 a (64%)

^z Disease incidence based on the average number of diseased plants per plot (20 plants/plot).

^y Application dates: 1=26 May, 2=2 Jun, 3=9 Jun, 4=16 Jun, 5=23 Jun, 6=30 Jun and 7=7 Jul.

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