

Evaluation of fungicides for control of Phytophthora blight of pepper, Clayton 2017.

The experiment was conducted at the Central Crops Research Station in Clayton, NC (N35°11.049'; W079°40.802'). Plots were single raised beds on 5-ft centers covered with black plastic mulch; 20-ft long with 5-ft fallow borders on each end. The previous year the field was planted with rye. Pepper was transplanted on 18 May (1-ft in-row spacing, 20 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape on 30 May and 6, 13, 20 and 27 Jun. Treatments were randomized into four complete blocks. On 6, 13, 23 and 30 Jun, plots were inoculated with 1g of *P. capsici*-infested millet seed directly into the soil at the base of each plant. 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 18 May immediately after transplanting. Applications were made on 18 and 25 May and 1, 8, 15, 22 and 29 Jun. Disease incidence was assessed on 16, 22 and 29 Jun and 6 and 13 Jul. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's Protected LSD test to separate means.

Phytophthora blight was first observed on 16 Jun at low levels (4% incidence). Disease progressed rapidly throughout the course of the trial reaching 95% disease incidence in the non-treated plots. The combination treatment of Orondis Gold, Ridomil Gold SL and Presidio provided control of Phytophthora blight when compared to the non-treated. No other treatment provided a commercially acceptable level of control for *P. capsici*. 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 (%)		
		29-Jun	6-Jul	13-Jul
Orondis Gold 200 1.67SC (Drench) 4.8 fl oz	1			
Ridomil Gold 4SL (Drench) 8 fl oz	1			
Orondis Gold 200 1.67SC (Drip) 4.8 fl oz	2, 4, 5			
Ridomil Gold 4SL (Drip) 1 pt	3, 7			
Presidio 4SC (Drip) 4 fl oz	6	1.8 b ^x (9%)	5.5 b (28%)	9.0 b (45%)
Ridomil Gold 4SL (Drench) 1 pt	1			
Revus 2.09SC 8 fl oz	2, 4, 6			
Ridomil Gold Copper 66WP 2 lb	3, 5, 7	12.8 a (64%)	16.5 a (83%)	18.5 a (93%)
Presidio 4SC (Drench) 4 fl oz	1			
Revus 2.09SC 8 fl oz	2, 4, 6			
Kocide 3000 46.1DF 1 lb	3, 5, 7	12.0 a (60%)	16.0 a (80%)	18.8 a (94%)
Presidio 4SC (Drench) 4 fl oz	1			
Ridomil Gold 4SL (Drip) 1 pt	2, 7			
Elumin 4SC (Drip) 8 fl oz	3, 5			
Presidio 4SC (Drip) 4 fl oz	4, 6	13.3 a (66%)	17.5 a (90%)	18.8 a (94%)
Non-treated	N/A	12.8 a (64%)	17.3 a (86%)	19.0 a (95%)

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

^y Application dates: 1=18 May, 2=25 May, 3=1 Jun, 4=8 Jun, 5=15 Jun, 6=22 Jun and 7=29 Jun.

^x Treatments followed by the same letter(s) within a column are not statistically different ($P=0.05$, Fisher's Protected LSD).