

Evaluation of fungicides for control of Phytophthora blight of pepper, Clayton, NC 2019.

The experiment was conducted at the Central Crops Research Station in Clayton, NC. Plots were single raised beds on 5-ft centers covered with white plastic mulch; 20-ft long with 5-ft fallow borders on each end. In 2018, the field was planted with pepper. Pepper was transplanted on 6 Jun (1-ft in-row spacing, 20 plants/plot). Irrigation and fertilization (4-0-8, N-P-K) were applied via drip tape. Treatments were randomized into four complete blocks. On 25 and 28 Jun, 2, 5, 10 and 12 Jul 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 hollow cone nozzle (TXVS-26). A soil-directed drench application (100 mL) was applied at the base of each plant on 6 Jun immediately after transplanting. Applications were made on 6, 12, 18 and 26 Jun and 3, 11 and 17 Jul. Disease incidence was assessed on 10, 17, 22 and 26 Jul. Fruit were harvested on 23 Jul. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's protected least significant difference (LSD) test to separate the means.

Phytophthora blight was first observed on 2 Jul at low levels (2% incidence or less). Disease progressed throughout the course of the trial reaching 84% disease incidence in the non-treated plots. The combination treatment with Orondis Gold, applied as a Drench with Revus and Kocide 3000 applied as a foliar spray provided control of Phytophthora blight. No other treatment provided a commercially acceptable level of control for *P. capsici*. No phytotoxicity was observed.

Treatment and rate of product per acre	Application no. ^y	Disease incidence ^z (%)			Mkt yield (lb/plot)
		17-Jul	22-Jul	26-Jul	
Orondis Gold (Drench) 140DC 28 fl oz/a	1				
Revus 2.09SC 7.99 fl oz/a	2, 4				
Kocide 3000 46.1DF 1.0 lb/a	2-7	2.5b ^x (12.5%)	6.0b (30.0%)	6.3b (31.3%)	1.55a
Orondis Gold (Sprench) 140DC 28 fl oz/a	1				
Revus 2.09SC 7.99 fl oz/a	2, 4				
Kocide 3000 46.1DF 1.0 lb/a	2-7	8.8a (44.0%)	11.3ab (56.5%)	12.3a (61.3%)	2.70a
Orondis Gold (Beg.Drip) 140DC 28 fl oz/a	1				
Revus 2.09SC 7.99 fl oz/a	2, 4				
Kocide 3000 46.1DF 1.0 lb/a	2-7	8.8a (44.0%)	12.3a (61.5%)	13.0a (65.0%)	0.53a
Orondis Gold (End Drip) 140DC 28 fl oz/a	1				
Revus 2.09SC 7.99 fl oz/a	2, 4				
Kocide 3000 46.1DF 1.0 lb/a	2-7	10.0a (50.0%)	12.5a (62.5%)	13.8a (68.8%)	0.60a
Presidio (Drench) 4SC 4 fl oz/a	1				
Revus 2.09SC 7.99 fl oz/a	2, 4				
Kocide 3000 46.1DF 1.0 lb/a	2-7	11.5a (57.5%)	13.3a (66.5%)	14.0a (70.0%)	0.45a
Non-treated	N/A	13.8a (69.0%)	15.3a (76.5%)	16.8a (83.8%)	0.18a

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

^y Application dates: 1=6 Jun, 2=12 Jun, 3=18 Jun, 4=26 Jun, 5=3 Jul, 6=11 Jul, 7=17 Jul.

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