

**Evaluation of fungicides for control of Phytophthora blight of pepper, Clayton 2018.**

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. The previous year the field was planted with pepper. Pepper was transplanted on 16 May (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 8, 15, 19, 22 and 29 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 CO<sub>2</sub>-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 16 May immediately after transplanting. Applications were made on 16, 23 and 30 May and 6, 13, 20 and 27 Jun and 6 and 11 Jul. Disease incidence was assessed on 8, 15, 22 and 29 Jun and 6, 13 and 20 Jul. Fruit were harvested on 21 and 28 Jun and 5, 12 and 19 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 8 Jun at very low levels (1% incidence or less). Disease progressed throughout the course of the trial reaching 71% disease incidence in the non-treated plots. The combination treatments with Orondis Gold, applied as a Drench or Sprench, Revus and Kocide 3000 provided control of Phytophthora blight when compared to the non-treated. No other treatment provided a commercially acceptable level of control for *P. capsici*.

Treatment and rate of product per acre	Application no. <sup>y</sup>	Disease incidence <sup>z</sup> (%)			Marketable yield (lb/plot)
		29-Jun	6-Jul	20-Jul	
Orondis Gold (Drench) 1.67SC 28 fl oz	1				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	3.3 bc <sup>x</sup> (16%)	5.3 d (26%)	6.8 c (33.8%)	30.25 a
Orondis Gold (Sprench) 1.67SC 28 fl oz	2				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	3.5 bc (18%)	5.3 d (26%)	7.0 c (35%)	28.28 ab
Orondis Gold (Drench) 1.67SC 20 fl oz	1				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	1.3 c (6%)	4.0 d (20%)	8.5 c (43%)	30.93 a
Orondis Gold (Drench) 1.67SC 4.8 fl oz	1				
Ridomil Gold (Drench) 4 SL 8 fl oz	1				
Orondis Gold (Drip) 1.67 SC 4.8 fl oz	2, 4, 5				
Ridomil Gold (Drip) 4SL1 pt	3, 7, 9				
Presidio (Drip) 4SC 4 fl oz	6, 8, 10	2.8 bc (14%)	7.0 cd (35%)	10.3 bc (51%)	27.45 ab
Orondis Gold (Sprench) 1.67SC 20 fl oz	2				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	1.5 c (8%)	5.8 d (29%)	10.3 bc (51%)	28.98 ab
Ridomil Gold (Drip) 4SL 0.42 fl oz	3				
Orondis Gold 1.67SC 14 fl oz	4, 6, 10				
Revus 2.09SC 7.99 fl oz	5, 8, 11				
Kocide 3000 46.1DF 1 lb	5, 7, 8, 9, 11	3.3 bc (16%)	7.3 bcd (36%)	14.0 ab (70%)	25.18 abc
Orondis Gold (Drip) 1.67SC 20 fl oz	3				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	6.3 ab (31%)	10.0 abc (50%)	14.0 ab (70%)	18.20 cd
Non-treated	N/A	7.8 a (39%)	11.3 ab (56%)	14.3 a (71%)	19.15 cd
Presidio (Drench) 4SC 4 fl oz	1				
Elumin (Drip) 4SC 8 fl oz	2, 4, 7, 10				
Presidio (Drip) 4SC 4 fl oz	3, 5, 8				
Ridomil Gold (Drip) 4SL 1 pt	4, 6, 9	6.0 ab (30%)	10.0 abc (50%)	14.8 a (74%)	21.15 bcd
Orondis Gold (Drip) 1.67SC 28 fl oz	3				
Revus 2.09SC 7.99 fl oz	4, 6, 8, 10				
Kocide 3000 46.1DF 1 lb	4-11	7.5 a (38%)	11.8 a (59%)	16.3 a (81%)	16.08 d

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

<sup>y</sup> Application dates: 1=16 May, 2=23 May, 3=30 May, 4=6 Jun, 5=13 Jun, 6=20 Jun, 7=27 Jun, 8=6 Jul and 9=11 Jul.

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