

Evaluation of fungicides for control of southern blight/circular spot of sweetpotato, Clayton 2022.

The experiment was performed at the Central Crops Research Station in Clayton, NC. Covington sweet potato roots were bedded on 16 May on four 150-ft long field rows. One row served as a control and the three remaining rows were treated with one of the three 2-application treatments using a CO₂-pressurized backpack sprayer equipped with a two-nozzle, handheld boom with flat fan nozzles (8004) delivering 50 gal/A at 35 psi. Slips produced from the field beds were cut on 22 Jun and transferred to a field with eight 5 x 120 ft long bed rows with 20-ft plots and 10-ft buffers formatted using a randomized complete block design with four replications. Prior to transplanting, 20 holes were set in each plot, and each hole received 5 g of *Athelia rolfsii* oat inoculum. Slips were then hand-transplanted and applied with the same treatment they received at bedding via transplant water applied with a CO₂-pressurized backpack sprayer equipped with a single-nozzle handheld boom with no nozzle delivering 100 gal/A at 35 psi. A second set of untreated slips were propagated in a greenhouse and transplanted into the same field following the same inoculation and transplant water application procedure as the field bed slips and were denoted as 1 app. Treatments. Slips were spaced at 1 plant per ft in row with 20 plants per plot. Plots were rated for stand count and growth vigor throughout the duration of the trial. Sweet potatoes were harvested on 27 Oct. Roots were washed, sorted by size, weighed, and rated for circular spot immediately after harvest. Roots were cured for 4 days and rated again for circular spot. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher’s protected least significant differences (LSD) test to separate means.

High temperatures and low rainfall resulted in high slip death following transplant and required a replanting that took place on 8 Jul. Lack of reinoculation resulted in a high average stand count and low southern blight incidence among all the treatments throughout the duration of the trial. There were no significant differences in growth vigor between the treatments and the controls. At harvest, there were no significant differences in the total weights per treatment. Postharvest disease ratings revealed no statistical differences in circular spot incidence.

Treatments	Rate	Stand count ^z	Disease incidence ^y	Vigor ^x	Total lbs ^w	Total infected
Mertect (1 app.)	1.07 fl oz/gal	18.0 a ^u	1.0 a	75.0 a	6.60 a	4.0 a
Non-treated control (bedding)	N/A	18.8 a	0.0 b	86.3 a	8.35 a	7.0 a
Non-treated control (greenhouse)	N/A	19.0 a	0.8 ab	87.5 a	9.00 a	9.8 a
Inspire (1 app.)	5.5 fl oz/a	19.0 a	0.3 ab	86.3 a	6.45 a	4.3 a
Mertect (2 app.)	1.07 fl oz/gal	19.0 a	0.0 b	81.3 a	8.00 a	7.0 a
Quadris (1 app.)	15.5 fl oz/a	19.3 a	0.0 b	77.5 a	6.65 a	3.8 a
Inspire (2 app.)	5.5 fl oz/a	19.5 a	0.0 b	80.0 a	7.30 a	4.0 a
Quadris (2 app.)	15.5 fl oz/a	19.8 a	0.0 b	83.8 a	10.20 a	7.3 a

^zStand count was calculated for each treatment based on the average number of living slips per plot.

^yDisease incidence was calculated for each treatment based on the average number of slips infected with southern blight per plot.

^xVigor ratings were calculated by assigning the plot with the highest vigor in each block a rating of 100 and comparing it to the remaining plots in the block.

^wTotal lbs is based on the combined weights of canners, No. 1’s, and jumbos harvested from the plot.

^vTotal infected is based on the combined number of canner, No. 1, and jumbo roots with black rot incidence.

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