

Evaluation of fungicides for control of *Rhizopus* soft rot in sweetpotato, 2016.

This experiment was conducted at the Central Crops Research Station in Clayton, NC. Sweetpotato roots used in the study were obtained from a commercial packing facility at the time of each inoculation and were rinsed with water prior to use. Roots were previously cured and were selected based upon similar size, shape, and disease-free appearance. Sweetpotatoes were wounded using a calibrated, rubber-band-propelled wooden dowel. After wounding, roots were inoculated with a spore suspension applied with a 1-inch foam brush. The approximate concentration of the spore suspension was 1.0×10^6 spores/mL. Following inoculation, roots were allowed to air dry. Roots were arranged, wounded side up, and fungicides were applied at specific rates using a CO₂-pressurized backpack sprayer. For the dip application, wounded roots were placed into a perforated metal basket and submerged into the fungicide mixture for 1 minute. After fungicide applications, roots were allowed to air dry, and then placed into clear, plastic containers (40 by 50 by 17.9 cm) and stored at 27°C and 99% relative humidity for 21 days. Four replications per treatment were included with 20 roots per replication. Roots were rated for disease incidence and severity 10 and 21 days after inoculation. 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.

Rhizopus was first observed 10 days after inoculation. Disease incidence in the untreated control was moderate (19 and 14%), as estimated by number of infected wounds. Orius 3.6F, Chairman, Stadium, and Mertect 340F as a spray application all consistently provided significant reductions in disease incidence. No phytotoxicity was observed in any treatment.

Treatment and Product Rate	Disease Incidence %*	
	20 Dec	3 Jan
Orius 3.6F 0.6 fl oz/gal	0.0 c**	0.0 c
Chairman 0.64 fl oz/gal	2.5 c	1.5 c
Stadium 1 fl oz/gal	2.5 c	2.5 c
Orius 3.6F 1.2 fl oz/gal	2.5 c	2.5 c
Chairman 1.28 oz/gal	4.0 c	4.0 c
Mertect 340F 0.42 fl oz/gal	5 bc	1.5 c
Mentor 0.5 fl oz/gal	12.5 ab	5 bc
Scholar 0.16 fl oz/gal	12.5 ab	6.5 abc
Mertect 340F (Dip) 0.42 fl oz/gal	15 a	7.5 abc
Botran 5F 0.0192 fl oz/gal	16.5 a	15 a
Untreated	19 a	14 ab

* The disease incidence was calculated for each treatment based on percentage of roots infected

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