SWEETPOTATO (*Ipomoea batatas* 'Covington')
Rhizopus soft rot; *Rhizopus stolonifer*

H. Collins, Y. I. Rosado-Rivera, and L. M. Quesada-Ocampo
Department of Entomology and Plant Pathology and Plant Sciences Initiative
North Carolina State University, Raleigh, NC 27695

Evaluation of fungicides for postharvest management of *Rhizopus* soft rot in sweetpotato, 2022.

This experiment was conducted at the Central Crops Research Station in Clayton, NC. Sweetpotatoes used in the study were grown at the Cunningham Research Station in Kinston, NC and were rinsed in water prior to use. Sweetpotatoes were previously cured and were selected based upon similar size, shape, and disease-free appearance. The experiment was started on 7 Oct. Sweetpotatoes were wounded using a calibrated, rubber-band-propelled wooden dowel. After wounding, sweetpotatoes were inoculated with a spore suspension applied with a repeating micropipette. The approximate concentration of the spore suspension was 1.0×10^7 spores/mL. Following inoculation, sweetpotatoes were allowed to air dry. Sweetpotatoes were then placed onto a packing line and fungicide spray treatments were applied using a compressed air pressurized sprayer delivering 0.5 gal/2,000 lb of sweetpotatoes at 20 psi with four TG-1 full cone nozzles. Sweetpotatoes used for the nontreated control were inoculated and sprayed with water on the packing line. Enough product was used to ensure complete coverage of each sweetpotato. After fungicide application, sweetpotatoes were placed into clear, plastic containers (40 x 50 x 17.9 cm) and stored at 27ºC and 99% relative humidity for 14 days. Five replications per treatment were included with 5 roots per replication. Sweetpotatoes were rated for disease incidence (percentage of sweetpotatoes infected) and disease severity (percent of sweetpotato infected/soft) at 4, 7, 10, and 14 days after inoculation on 11, 14, 18, and 21 Oct. Data were analyzed in the software ARM (Gylling Data Management, Brookings, SD) using analysis of variance (AOV) and Fisher's Protected LSD test (P=0.05) to separate means.

Rhizopus was first observed 4 days after inoculation. All treatments showed significantly lower disease severity on 21, 18 and 14 Oct compared to the nontreated control. No significant differences were observed on 11 Oct. All treatments showed significantly lower disease incidence on 18 and 14 Oct compared to the nontreated control, while no significant differences were observed on 21 and 11 Oct. No phytotoxicity was observed in any treatment. In the table, treatments are sorted by Disease Severity on 21 Oct.

	Disease Severity[z]				Disease Incidence[y]			
Treatment Name and Rate	11 Oct	14 Oct	18 Oct	21 Oct	11 Oct	14 Oct	18 Oct	21 Oct
Nontreated	0.1 a[x]	0.8 a	2.9 a	2.8 a	20.0 a	32.0 a	32.0 a	32.0 a
Mertect Academy	0.0 a	0.1 b	0.2 b	0.4 b	4.0 a	8.0 b	8.0 b	16.0 a
Stadium	0.0 a	0.0 b	0.1 b	0.2 b	0.0 a	4.0 b	4.0 b	8.0 a
Mertect Graduate A+	0.0 a	0.0 b	0.0 b	0.0 b	0.0 a	0.0 b	0.0 b	0.0 a

[z] Disease Severity was calculated as the average percentage of each sweetpotato in the box that was soft/infected
[y] Disease incidence was calculated for each treatment based on the percentage of sweetpotatoes per box infected.
[x] Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's Protected LSD).