SWEETPOTATO (*Ipomoea batatas* 'Covington')
Black rot; *Ceratocystis fimbriata*

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Evaluation of fungicides for postharvest management of black rot in sweetpotato, 2020.

This experiment was conducted at the Central Crops Research Station in Clayton, NC. Sweetpotato roots used in the study were grown at the Cunningham Research Station in Kinston, N.C. and were rinsed with water prior to use. Roots were previously cured and were selected based upon similar size, shape, and disease-free appearance. The experiment was started on 7 Jan. A spore suspension was created by dislodging ascospores from cultures of *Ceratocystis fimbriata* isolate AS186 grown on 100-mm agar plates and adding them to 190 L of water. The approximate concentration of the spore suspension was 1.0×10^3 spores/ml. Sweetpotatoes were placed into a 379-L bin containing the spore suspension. The spore suspension, along with the roots, were gently agitated for 20 min to ensure a homogenous solution throughout the inoculation. Following inoculation, roots were taken out of the spore suspension and allowed to air dry. Roots were then placed onto a miniature packing line and fungicide spray treatments were applied using a compressed air pressurized sprayer delivering 0.5 gal/2,000 lb of roots at 40 psi with four TG-1 full cone nozzles. After fungicide application, sweetpotatoes were placed into clear, plastic containers (40 x 50 x 17.9 cm) and stored at 24ºC and 99% relative humidity for 28 days. Roots used for the non-treated control were inoculated but had no treatments applied. Ten replications per treatment were included with 5 roots per replication. Roots were rated for disease incidence, number of lesions on each root per box, at 7, 14, 21, and 28 days after inoculation on 14 Jan, 21 Jan, 28 Jan, and 4 Feb. Disease severity and percent area covered in lesions were rated at 7, 14, 21, and 28 days after inoculation. 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.

Black rot was first observed on sweetpotato roots 7 days after inoculation (data not shown). Stadium + Mertect provided the most reduction in both severity and incidence. All treatments provided statistically significant reductions in both disease severity and disease incidence when compared to the non-treated control. No phytotoxicity was observed in any treatments. In the table, treatments are sorted by disease severity on 4 Feb.

	Disease Severity[z] (%)			Disease Incidence[y]		
Treatment and product rate/2000 lb	21 Jan	28 Jan	4 Feb	21 Jan	28 Jan	4 Feb
Stadium 1 fl oz Mertect 340F 0.42 fl oz	0.40 d[x]	1.84 c	1.46 c	0.38 d	0.88 d	1.16 e
Academy 0.16 fl oz Mertect 340F 0.42 fl oz	0.80 cd	2.12 c	2.54 bc	0.86 d	1.14 d	1.76 de
Mertect 340F 0.42 fl oz	0.84 cd	3.28 c	3.32 bc	1.20 d	1.82 d	2.12 de
Stadium 1 fl oz	1.07 cd	3.29 c	3.56 bc	1.53 cd	2.38 cd	2.81 cd
Graduate A+ 0.6 fl oz	1.34 cd	2.72 c	3.70 bc	1.58 cd	1.84 d	2.34 cde
Academy 0.16 fl oz	2.80 bc	4.78 c	6.32 bc	2.80 c	3.50 c	3.70 c
Scholar SC 0.16 fl oz	4.10 b	9.98 b	9.86 b	5.30 b	5.90 b	6.78 b
Non-treated	16.22 a	27.64 a	36.84 a	13.48 a	14.52 a	13.86 a

[z] Disease severity was calculated by the percentage of each sweetpotato covered by black rot lesions.
[y] Disease incidence was calculated by the number of lesions on each sweetpotato.
[x] Treatments followed by the same letter(s) within a column are not statistically different (P=0.05, Fisher's Protected LSD).