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

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Evaluation of fungicides for postharvest management of black rot in sweetpotato, 2021.

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, NC 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 23 Apr. 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 packing line and fungicide spray treatments were applied using a compressed air pressurized sprayer delivering 0.5 gal/2,000 lb of roots at 20 psi with four TG-1 full cone nozzles. 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 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) and disease severity (percent area covered in lesions) at 7, 14, 21, and 28 days after inoculation on 30 Apr, 7, 14, and 21 May. 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 at 7 days after inoculation. Roots treated with Mertect 340F had the lowest incidence and severity at each rating date. Both AGR-Biofun1 and AGR-Biofun2 showed significantly lower incidence at all dates when compared to the nontreated control. AGR-Biofun1, AGR-Biofun2, and Mertect 340F showed significantly lower severity than the nontreated control on 7 May. AGR-Biofun2 and Mertect 340F both showed significantly lower severity that the nontreated on 30 Apr. No phytotoxicity was observed in any treatment. In the table, treatments are sorted by disease incidence on 21 May.

	Disease Incidence[z]				Disease Severity[y]			
Treatment Name and Rate	30 Apr	7 May	14 May	21 May	30 Apr	7 May	14 May	21 May
Nontreated	1.30 a[x]	6.50 a	6.36 a	7.28 a	0.78 a	3.64 a	3.32 a	7.68 a
AGR-Biofun1 - 3% V/V	0.76 b	4.40 b	5.18 b	5.78 b	0.58 ab	2.52 b	1.78 a	6.42 ab
AGR-Biofun2 – 6% V/V	0.78 b	3.04 c	4.80 b	5.46 b	0.46 b	2.00 bc	2.06 a	6.68 a
Mertect 340F – 0.42 fl/ton	0.70 b	2.06 c	2.80 c	3.12 c	0.54 b	1.30 c	1.26 a	4.38 b

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