

### Evaluation of Cerafruta 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 obtained from a commercial packing facility. Roots were previously cured and were selected based upon similar size, shape, and disease-free appearance. The experiment was started on 21 Oct. 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  $1.0 \times 10^3$  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 24°C and 99% relative humidity for 28 days. Roots used for the non-treated control were inoculated, but had no treatments applied. Four 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 28 Oct, 4, 11, and 18 Nov. 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 7 days after inoculation. Roots treated with Cerafruta (170 fl oz), Mertect 340F, Cerafruta (85 fl oz), and Scholar showed significantly lower incidence at all dates when compared to the nontreated control. Cerafruta (42.5 fl oz) showed significantly lower incidence when compared to the nontreated control on 28 Oct, 4 and 18 Nov. All treatments showed significantly lower severity than the nontreated control on 4, 11, and 18 Nov. No significant severity differences were observed on 28 Oct. No phytotoxicity was observed in any treatment. In the table, treatments are sorted by disease incidence on 18 Nov.

Treatment Name and Rate	Disease Incidence <sup>z</sup>				Disease Severity <sup>y</sup>			
	28 Oct	4 Nov	11 Nov	18 Nov	28 Oct	4 Nov	11 Nov	18 Nov
Nontreated	1.95 a <sup>x</sup>	5.33 a	6.64 a	6.60 a	0.85 a	2.93 a	7.13 a	11.51 a
Cerafruta – 42.5 fl oz/100 gal	0.80 b	2.73 b	5.46 ab	4.42 b	0.75 a	1.61 b	4.07 b	6.75 b
Scholar – 8 fl oz/100 gal	0.70 b	2.56 b	3.78 bc	3.95 bc	0.53 a	1.10 b	2.65 bc	5.31 bc
Cerafruta – 85 fl oz/100 gal	0.55 b	2.75 b	4.00 bc	3.80 bc	0.40 a	1.55 b	3.80 bc	6.70 b
Mertect 340F – 0.42 fl oz/ton	0.50 b	1.65 c	2.35 c	3.48 bc	0.40 a	1.00 b	1.47 c	3.64 c
Cerafruta – 170 fl oz/100 gal	0.60 b	2.2 bc	3.50 c	2.98 c	0.63 a	0.90 b	2.15 bc	3.91 c

<sup>z</sup> Disease incidence was calculated by the number of lesions on each sweetpotato.

<sup>y</sup> Disease severity was calculated by the percentage of each sweetpotato covered by black rot lesions

<sup>x</sup> Treatments followed by the same letter(s) within a column are not statistically different ( $P=0.05$ , Fisher’s Protected LSD).