Onion (*Allium cepa* 'Century')
Center rot; *Pantoea* spp.

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Evaluation of bactericide programs with LifeGard to manage internal bacterial rot of onion in Georgia, 2022

Four rows of 'Century' onion were transplanted into 6-ft beds (panels) on 12 Dec 21 at the University of Georgia, Tifton, GA. The fertility and insecticide programs were consistent with the University of Georgia Extension Service recommendations. Experimental design consisted of a randomized complete block with four replications. Treated plots were 20-ft long and were separated on each side by non-treated border panels. Plots were separated by a 3 ft bare-ground buffer within the row. Treatments were applied with a backpack sprayer calibrated to deliver 40 gal/A at 75 to 80 psi through TX-18 hollow cone nozzles. Treatment applications were made on 24 Feb, 3 Mar, 10 Mar, 17 Mar, 24 Mar, and 29 Mar 22. Plots were irrigated once a week using overhead irrigation. Natural inoculum was relied upon. Foliar disease severity was assessed on 15 Mar and 25 Mar but no foliar symptoms were observed. Onion bulbs from the center of each plot with dimension 6 ft × 3 ft were hand-harvested on 14 Apr, field cured for two days and then stored at 4°C for 30 days. On 14 May onion bulbs from each plot were individually cut using a sterile knife and assessed for the presence of internal rot symptoms. Data for percent internal rot incidence in bulb were analyzed using SAS 9.4 (SAS Institute, Cary, NC) and means were compared using the Fisher's protected LSD test at $P \leq 0.05$. The total rainfall received from Dec (2021) to Apr (2022) was 10.8 in. The average high and low temperatures for the month of Dec (2021) were 54° and 39° F, respectively and for the month of Apr (2022) were 84° and 52° F, respectively.

Foliar symptoms were not observed in the field or during harvest. External rot incidence was minimal and probably caused by injury during harvest; hence, only internal rot was assessed. Percent internal bulb rot incidence was significantly lower for all treatments compared with the non-treated check. Among the treatments, no significant differences in internal bulb rot were observed. Sub-samples of symptomatic bulbs with internal rot were confirmed via isolation and PCR assay to be caused by *P. ananatis*.

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Treatment and rate of product per acre	Application No. [z]	Internal bulb rot (%)[y]
Mankocide 2.5 lb	1-3	5.3 b
LifeGard 2.0 fl oz	1-3	
Nordox 1.0 lb	1-3	9.5 b
LifeGard 2.0 fl oz	1-3	
MasterCop 1.0 pt	1-3	4.0 b
LifeGard 2.0 fl oz	1-3	
NuCop 1.5 lb	1-3	3.0 b
LifeGard 2.0 fl oz	1-3	
Oxidate 5.0 1.28 fl oz	1-3	7.8 b
LifeGard 2.0 fl oz	1-3	
Champ 1.5 fl oz	1-3	3.0 b
LifeGard 2.0 fl oz	1-3	
LifeGard 2.0 fl oz	1-6	4.8 b
Non-treated check	-	17.5 a
P-value		0.006

[z]Application dates were 1=24 Feb; 2=3 Mar; 3=10 Mar; 4=17 Mar; 5=24 Mar and 6=29 Mar.
[y]Mean internal bulb rot incidence was calculated as number of bulbs with internal rot/total number of bulbs evaluated × 100.