ONION (*Allium cepa* 'Allison')
Center rot; *Pantoea ananatis*

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Evaluation of onion growth stage directed chemical applications and thrips management program on center rot incidence in onion bulbs in Georgia, 2020.

Four rows of 'Alison' onions were transplanted into 6-ft beds (panels) on 5 Dec at the Vidalia Onion and Vegetable Research Center located in Lyons, GA. The fertility program was consistent with 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 33 gal/A at 40 psi through TX-18 hollow cone nozzles. Applications were made at two growth stages (bulb initiation and bulb swelling) with a total of three applications per growth stage at 7-day intervals. Bactericide treatments were applied with or without an insecticide program for thrips management. Thrips management program was followed according to the UGA Cooperative Extension recommendation. Natural infection was relied upon. Plots not treated with bactericides were considered as negative control. Center rot bulb symptoms were assessed 3 days after harvest following incubation at 28℃ and 50% RH on 15 May. Marketable yield was also calculated for each treatment. Data for mean center rot incidence and marketable yield were analyzed within each growth stage using the Fisher's protected LSD test at $P \leq 0.05$ (SAS version 9.4, SAS Institute, Cary, NC). Weather during the experiment was moderately wet with 18.5 in. of accumulation occurring between 15 Mar and 30 Apr.

For the treatments where thrips management program was not utilized, non-bactericide treated check had significantly higher center rot incidence in bulb and lower marketable yield compared to other treatments. Bactericide treatments were not significantly different from each other in terms of center rot incidence and marketable yield. For the treatments where thrips management program was followed, non-bactericide treated check had significantly higher center rot incidence in bulb and lower marketable yield compared to other treatments. Bulb incidence and marketable yield for bactericide treatments were not significantly different from each other. phytotoxicity was not observed with any of the treatments.

Growth stage, treatment and rate per acre	Application timing[z]	Center rot bulb incidence (%)[y]	Marketable yield (lb/plot)[v]
Without thrips management program			
Bulb initiation and bulb swelling			
Kocide 3000 1.5 lb	1-6	46.2 b	59.2 x
Agrititan 1% (v/v)	1-6	49.4 b	58.5 x
Kocide 3000 1.5 lb	1-6	39.8 b	61.4 x
+Agrititan 1% (v/v)	1-6		
Nordox 1lb	1-6	41.5 b	56.2 x
Untreated check	-	70.2 a	37.5 y
P-value		0.015	<0.001
With thrips management program			
Bulb initiation and bulb swelling			
Kocide 3000 1.5 lb	1-6	35.2 b	68.5 x
Agrititan 1% (v/v)	1-6	39.8 b	65.5 x
Kocide 3000 1.5 lb	1-6	28.2 bc	58.5 x
+Agrititan 1% (v/v)	1-6		
Nordox 1lb	1-6	36.2 b	62.8 x
Untreated check	-	63.5 a	35.2 y
P-value		0.036	<0.001

[z]Bactericide-treatment applications were made: 1 = 20 Feb, 2 = 27 Feb, 3 = 5 Mar, 4 = 12 Mar, 5 = 19 Mar, and 6 = 26 Mar.
[y]Mean center rot bulb incidence was calculated as number of bulbs with center rot/total number of bulbs evaluated × 100.
[x]Means followed by the same letter(s) within each growth stage are not significantly different according to Fisher's protected LSD test at $P \leq 0.05$.
[v]Mean marketable yield (lb) per treatment calculated as difference between mean field weight (lb) and weight of cull (lb).