ONION (*Allium cepa* 'Vidora')
Center rot; *Pantoea ananatis*
Sour skin; *Burkholderia cepacia*

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Evaluation of harvesting methods on post-harvest incidence of center rot and sour skin in onion, Georgia 2020.

Four rows of 'Vidora' onions were transplanted into 6-ft beds (panels) on 12 Dec at the commercial onion grower farm located in Glenville, 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. Thrips and disease management program was followed according to the UGA Cooperative Extension recommendation. Natural infection was relied upon. At harvest maturity, onion bulbs were undercut using a bed ridge frame undercutter (Parma Inc.,) followed by a three-day field curing period. Following curing, two different harvesting methods were evaluated; manual harvest and mechanical harvest using Top Air Onion Harvester (Top Air Topper Loader 3400, Top Air Inc., Parma, Idaho). For manual harvest, onion bulbs were clipped leaving 5-6 inches from the neck region. Roots were also clipped but care was taken not to clip too close to the basal plate. Onion bulbs from replicated plots (four replicates) were bagged and stored at 4°C for one month. After period of storage, onion bulbs were individually cut using a sterile knife for the center rot and sour skin incidence. Data for mean center rot and sour skin incidences were analyzed using the Fisher's protected LSD test at $P \leq 0.05$ (SAS version 9.4, SAS Institute, Cary, NC).

Center rot and sour skin were evaluated in onion bulbs after a month of storage under conditions mentioned above. The method of harvest had a significant effect on center rot and sour skin bulb incidences in storage. Significantly higher incidences of center rot and sour skin were observed with the manual harvest compared with the mechanical harvest. Bulb rot with post-harvest fungi (*Botrytis* sp. and *Aspergillus* sp.) were not observed.

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Methods of onion harvest	Center rot bulb incidence (%)[z]	Sour skin bulb incidence (%)[y]
Mechanical harvest	2.2 b[x]	5.5 B[x]
Manual harvest	10.5 a	13.2 A
P-value	0.024	<0.001

[z]Mean center rot bulb incidence was calculated as number of bulbs with center rot /total number of bulbs evaluated × 100.
[y]Mean sour skin bulb incidence was calculated as number of bulbs with sour skin/total number of bulbs evaluated × 100.
[x]Means followed by the same letter(s) within each column are not significantly different according to Fisher's protected LSD test at $P \leq 0.05$.