

Effectiveness of Preharvest-applied Fungicides for Postharvest Diplodia Stem-end Rot Control on Grapefruit

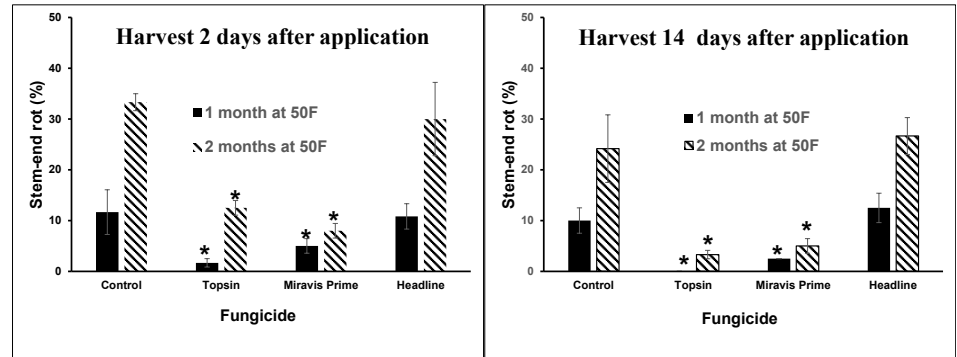
Researchers: Mark A. Ritenour, Liliana M. Cano, Megan M. Dewdney, Anne Plotto, Jinhe Bai

Contact: Mark A. Ritenour, ritenour@ufl.edu

UF/IFAS IRREC

Effort Statement: The final set of experiments evaluated the same products, treatment levels, harvest intervals, and degreening treatments, but afterwards were washed, waxed, and then stored at 50 °F for up to two months.

Summary: Diplodia stem-end rot (SER) caused by *Lasiodiplodia spp.* is an important postharvest decay on fresh citrus in Florida. Huanglongbing (HLB) significantly increases *Lasiodiplodia* preharvest infection, leading to increased postharvest Diplodia SER. Evaluation of materials applied preharvest to reduce postharvest decay were conducted over four seasons on mostly red grapefruit, with one block of white grapefruit. A number of materials were tested over the years with the best performing candidates from the



Effects of pre-harvest fungicides on postharvest Diplodia stem-end rot incidences on red grapefruit from two harvests and after degreening, washing, waxing, and storage (50 °F) for 1 or 2 months during the 2022-23 season. Standard error is expressed on each bar of the graph. *indicates significant different at the same harvest time ($P \leq 0.05$) compared to the unsprayed control.

first three seasons being evaluated this past season. Materials tested this past season were: Topsin® 4.5 FL (thiophanate-methyl, “best-case fungicide” not registered for citrus), Headline® (pyraclostrobin), and Miravis Prime® (fludioxonil + pydiflumetofen). Application rates were based on label instructions and, for materials with no preharvest citrus label, rates were based on their label for other crops or their postharvest label. Trees sprayed with water served as controls. Fruit were harvested 2 and 14 days after application. Harvested fruit were subjected to five days of degreening (5 ppm ethylene, 84 °F, and 90% RH) and then incubated at 75 °F with 90-95% RH for three weeks and Diplodia SER observed weekly. Supporting results from previous seasons, Topsin® demonstrated the greatest reduction in postharvest

decay in 2022-23, followed by Miravis Prime®, and then by Headline® when fruit were harvested either 2 or 14 days after application. Miravis Prime® is not currently registered for use on most citrus but it is hoped grapefruit can be added to the label to provide an additional tool for decay control.

Take Home Message:

- After fruit were washed, waxed, and stored at 50 °F:
 - » Fruit treated with Headline® no longer had less decay than the control.
 - » Fruit treated with Miravis Prime® still developed significantly less decay than the control.
 - » Miravis Prime® is still not registered for most citrus but the potential for registration is being explored.

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