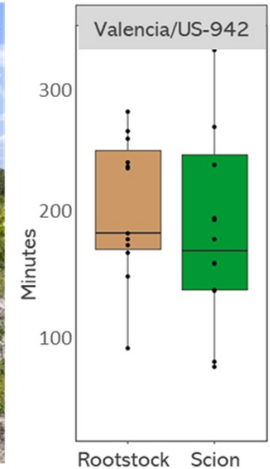
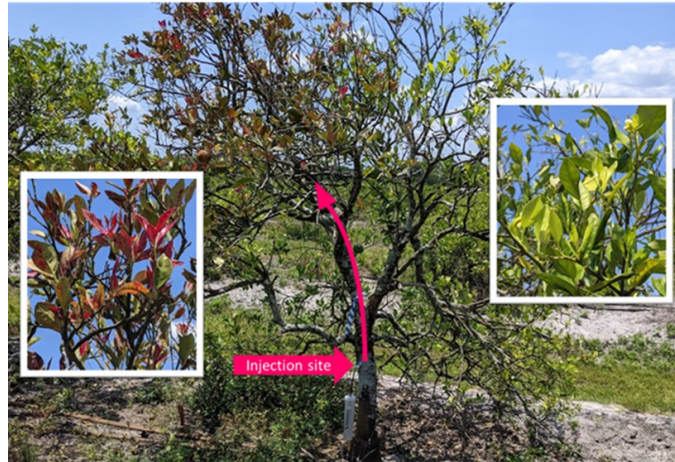


# To Inject into the Rootstock or the Scion?

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## Take Home Message:

- Injection into the rootstock or scion are both effective.
- The leaf area, the time of day, and weather conditions influence the uptake rate.
- Rootstock injection is preferred for trees with a short main trunk.

**Summary:** The current label recommends injecting oxytetracycline (OTC) into the rootstock, but this may not always be possible. In a preliminary study on 5-year-old 'Valencia' trees we found that the uptake rate of water was faster after injection into the scion instead of the rootstock. Recently, we studied the uptake rate of OTC in 8-year-

old 'Valencia' trees on several different rootstocks. Injections were performed in April or May 2023 between 9 am and 12 pm. We used FlexInject injectors filled with 100 ml OTC at the 11,000-ppm label rate. The uptake rate was variable between trees and between research trials and ranged from less than 30 minutes to several hours. In contrast to our preliminary study, we did not measure any significant difference in the uptake rate between scion and rootstock. Note that regardless of whether injecting into the rootstock or the scion, the uptake rate is fastest during periods of active transpiration (i.e., during mid- to late morning)

and when the trees are well-watered and have fully expanded leaves. Sunny and dry conditions also enhance transpiration and therefore the uptake rate. Injecting into the rootstock is preferred for trees with a short main trunk as it provides more time (distance) for the OTC to spread before reaching the canopy. Injections directly beneath a main scaffold branch should be avoided as the injected material will move mostly into the side of the canopy connected to that branch as illustrated by dye injections. Studies are ongoing to assess other potential differences in effects.

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