Investigating the Effectiveness of Oxytetracycline Treatment Size Against Huanglongbing in Five-Year-Old Valencia Orange Trees - A Four-Year Study

Williamson, Brady (School: Okeechobee High School)

The purpose of this project that will be tested in this research will be to see if the two half doses injections of 0.55cc of Oxytetracycline (OTC), an antibacterial agent, will reduce bark splitting, reduce phytotoxicity, and increase the pounds solid in the fruit, that the Valencia trees that receive just 1.1cc dose of (OTC). Each piece of fruit on the tree will be counted and observed to see if there are any visual signs of greening present. The count will be recorded on the date sheet. The pieces of fruit form the center part of the tree will be picked and weighted on a computing scale. The weight will be recorded. The pieces of fruit will be cut in the center sections, dividing the pieces of fruit into two halves. The brix will be measured by using a refractometer to take juice samples from the cut oranges. The brix count will be recorded on the date sheet. The knife and refractometer will be cleaned with distilled water after each brix is taken. Each piece of equipment will be dried by paper towels. Trees injected with two 0.55 cc doses had 0.14 higher brix and 10-12 pieces of fruit more than the trees that received just one 1.1 cc dose. My hypothesis was shown to be supported, Valencia orange trees treated with two doses of 0.55 cc of Oxytetracycline showed fewer cases of bark splitting and phototoxicity. T-tests yielded p-values of 0.000198 for fruit count, 0.000475 for fruit weight, and 0.0002783 for brix%, indicating a significant difference between data sets and supporting my hypothesis.

Awards Won: