Cost Comparison of Different Trellis Infrastructure for Use in Kiwifruit Production in Texas

Lais De Oliveira Machado, Graduate Research Assistant
Division of Environmental Science, Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University, Nacogdoches, Texas

Abstract

Many factors come to account to start a new crop of kiwis. The economic viability is the most important characteristic to initiate a new production. The highest cost for the establishment of kiwi plants is the infrastructure of the trellis and irrigation system. Trellis strategies should be designed to support 70,000 lbs per acre (fruit, vines, and foliage). It is important to have a robust, stable and durable infrastructure that supports the plants throughout the growing phases, especially during the fructification. Kiwi plants can produce fruit for over one hundred years; thus it is necessary to build a solid trellis infrastructure to support a heavy load and avoid frequent repairs. The material selection is done according to product availability and price. Therefore, the aim of the project is to do a cost comparison on trellis infrastructure using wood, tubular steel and drill stem in kiwifruit production in the field and under high tunnels in Texas.

Background

This project is part of a current main project led by Dr. David Creech, Director of SFA Gardens, which holds the promise of introducing a new crop to the Texas market. The research shows that the gold kiwifruit has produced well at Nacogdoches, Texas, in four out of the past six years (2014-2019). And results from the research has led to a better understanding of kiwi crop's chilling requirement, tolerance to high soil pH, propagation strategies, cold tolerance, ways to protect young plants and effectiveness of pollination techniques. Therefore, the next step in the project is the economic viability of Kiwifruit in Texas.

Aerial images by drone (date February 2, 2020) were taken on first visit to SFA kiwi crop, Nacogdoches, TX.

Methodology

For better understanding of the different trellis system used in kiwi production a literature review will be completed to identify the particularities of each technology. Also Field trips will be done to visit different sites that are in production or are being established. Drones will be used to acquire images and videos to better depict the areas under kiwi production and its infrastructure; supervised by Dr. David Kulhavy. Construction projects for kiwi will be monitored, and cost estimates provided.

Loaded Kiwi Crop- Rotorua in New Zealand. Photo taken by David Creech

Teepees System, Kiwi Crop in New Zealand. Photo taken by David Creech

The Texas Fruit Growers Association (TFGA)

TWINWOOD FARMS

Professors: David L. Kulhavy, David L. Creech, and Sheryll Jerez