

USING GROUNDCOVERED BEDS AS BMP FOR CITRUS WATER MANAGEMENT

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Woven groundcover beds are currently used by citrus growers in southeast Florida to manage the impacts of Diaprepes root weevil and other insect root pests in citrus production. However, these groundcovers could contribute to improving the water holding capacity after an irrigation or rain event. In this trial, we evaluate the water use efficiency of woven mesh-covered beds as a Best Management Practice (BMP) for water management in citrus production. The research is conducted in a commercial orchard located in Fort pierce FL, with a traditional micro-sprinkler irrigation system. In this trial, we compare young orange trees planted with and without ground cover. Five replications for each treatment and five trees for each replication were considered. Irrigation recommendations are provided for both treatments, on a weekly basis, using data from soil moisture sensors (SMS's) deployed in the field. A weather station was also installed to record meteorological variables that are used for the weekly irrigation recommendations. We measured physiological variables including tree height, trunk diameter, and canopy size in two directions (north-south and east-west). Then, we calculate canopy volume and trunk area for trees located in both treatments. Preliminary results show that although we are using more water for uncovered beds, there is no significant difference ($p < 0.05$) across physiological variables. Although uncovered beds are receiving more water, this has not led to better plant performance. This preliminary result highlights the influence of covered beds for water saving which may fall into the BMP's goals. The results of this ongoing project will provide baseline information to growers and stakeholders of the expected water use of this BMP, especially for young citrus trees in which currently is where most of the water losses from irrigation are present.

PRESENTER BIO: Dr. Guzmán is an agricultural engineer working as an assistant professor at Indian River Research and Education Center (IRREC) at University of Florida, Fort Pierce, Florida. She is currently leading the smart irrigation and hydrology program at IRREC working in direct contact with producers and stakeholders in Southeast Florida.