

Evaluating the Impact of Fabric Mulch Ground Cover on Grapefruit Tree Growth and Soil Characteristics in the Indian River Region

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Summary: Florida citrus production and acreage have drastically decreased in the past years primarily due to huanglongbing (HLB); consequently, citrus grove management has become more challenging and resource demanding. To increase soil health and restore tree and root health, new management practices have been implemented; in particular, a practice that has increased in use in the Indian River region is fabric mulch ground cover (FMGC). Potential advantages of FMGC include improved weed and pest control, reduced soil erosion, increased soil moisture and nutrient retention, reduced temperature extremes, and enhanced microbiome composition of the soil. Although the practice has been in use for

almost 10 years, little data has been scientifically collected from established groves. Hence, the goal of this trial is to evaluate the effects of FMGC on grapefruit tree growth and soil characteristics in the Indian River region. Four-year-old 'Star Ruby' (*Citrus × paradisi*) grapefruit trees grafted on US-942 (*Citrus reticulata* × *Poncirus trifoliata*) rootstock grown with or without FMGC were uniformly chosen for a two-year trial. A total of 20 trees were assigned to two treatments (FMGC vs. conventional). Leaf and soil nutrients, trunk diameter, height, canopy volume, and soil microbiome composition have been collected in the winter and summer. Gathered data showed initial differences in canopy volume, trunk diameter, and soil moisture

between the two treatments. The trial will continue for an additional year, resulting in a greater understanding of the impact of this recently implemented management practice and its potential benefits to Florida citrus growers.

Take Home Message:

- Ground cover helps to conserve water usage and help retain soil moisture and nutrients around the root system.
- Use of ground cover can inhibit the germination and establishment of weed seeds, weed growth, and reduce competition for water and nutrients.
- FMGC can provide management of Diaprepes beetles.

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