UV-Metalized Reflective Mulches for Asian Citrus Psyllid Suppression in Young Citrus Trees

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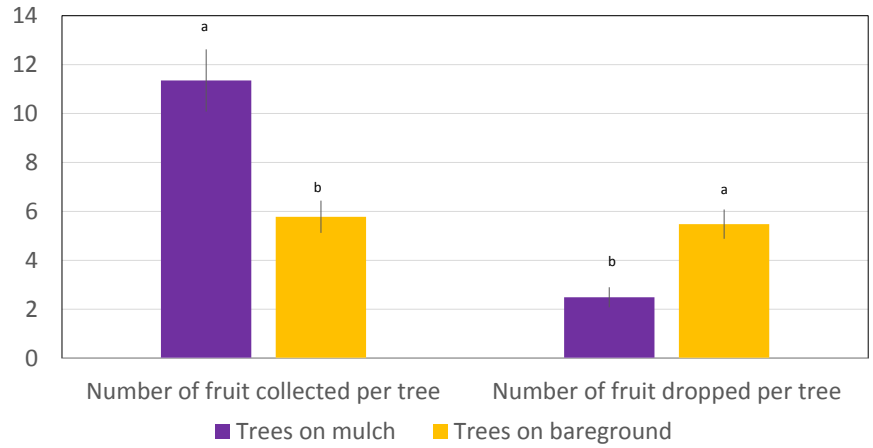

Yield per tree from Ruby Red grapefruit on US-897 rootstock growing on UV-metalized reflective mulch and bare ground at Vero Beach, FL.

Take Home Message:

- ACP suppression was significant for two years on trees with mulch.
- Trees on mulch were healthier than those on the bare ground.
- The benefits of mulch are expected to increase on larger plantings with greater protection against ACP and benefits of moisture and nutrient conservation which may vary with soil type.

Summary: Protecting citrus trees from the Asian citrus psyllid (ACP) is critical to reducing the spread and severity of huanglongbing (HLB) or citrus greening disease. The frequent availability of viable shoots in young trees is attractive to psyllid colonization, feeding, and oviposition events. UV-metalized reflective mulches reflect ultraviolet light, which is disturbing for some insects such as ACP, a day-flying insect, and primarily relies on vision to locate the host. We are determining the effects of 96-inch-wide UV metalized Shine N'Ripe XL reflective mulch on ACP in newly planted citrus. The plantings on mulch include 'Ruby Red' grapefruit in Vero Beach and 'Valencia' sweet orange in Immokalee and Lake Alfred. The effects of mulch on ACP suppression during the initial two years of planting resulted in reduced adult numbers in Immokalee and Lake Alfred by 60% in 2020 and 44% in 2021. The effect of mulch on shoot infestation with psyllid immatures was observed for up to 65% at Vero Beach, however we did not see as large of a difference in the number of nymphs in each treatment in Lake Alfred. With the increase in the canopy size, trees with mulch had reduced psyllids and only 8% more shoot infestation in mulch than bare ground was observed at Vero Beach and Immokalee in 2022. The number of fruits collected per grapefruit tree on mulch was almost double than that collected from a tree on the bare ground averaging 11 and 6 per tree, respectively, with fruit weight 65% higher on the mulch. In 'Valencia' oranges, benefits in yield are not apparent yet. The trees on mulch are in better health with larger trunk diameters and canopies.

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