The Effects of Wildflower Plantings by Grove Windbreaks on Arthropod Populations

Researchers: Angela Chuang, Kathi Malfa, Lauren M. Diepenbrock, Xavier Martini

Contact: Xavier Martini
xmartini@ufl.edu

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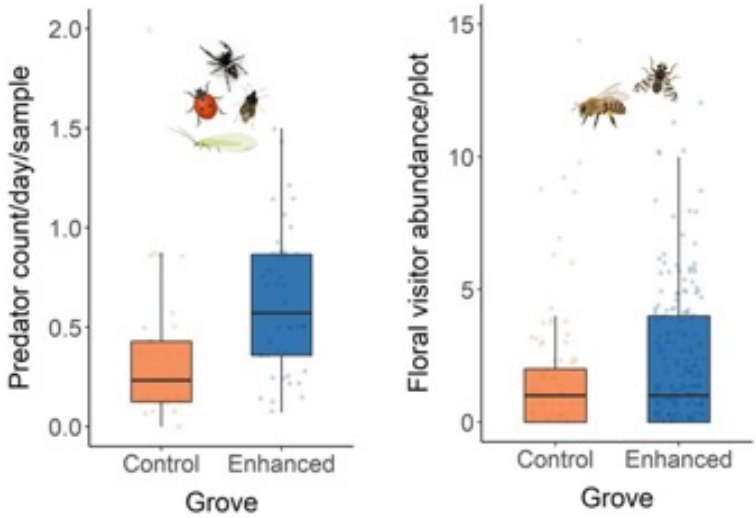

Planting wildflowers in and around fields is known to provide food resources and habitats for beneficial arthropods like pollinators and predators of pests. In two locations (Lake Alfred, FL and Monticello, FL) we tested whether planting native Florida wildflowers next to citrus grove windbreaks could improve natural pest control and pollination by increasing the diversity and number of pollinators and arthropod predators in groves. In late 2020, we planted different combinations of native buttonbush, coral honeysuckle, and blanket flower along the grove windbreaks. Since April 2021, we have sampled arthropods monthly in both these treatment groves as well as control groves containing a windbreak but no flowers. In both fields, we found more predators in the wildflower groves, but no evidence of increased predation. This may be due to higher pest pressure from an unrelated higher flush density in these treatment groves. Overall, our groves with wildflowers also have more diverse and abundant pollinators near the flower plantings as well as within the groves themselves. This was particularly true for plots containing blanket flowers as compared to plots with vines or bush only. Our analyses also considered the effects of existing flowering species in each grove. While commercial honeybees were most often found on Spanish needle, a flowering weed common to groves, native bees were highly attracted to the blanket flowers we planted. This study is ongoing but currently suggests that our flowering treatments are associated with increases in the diversity and abundance of beneficial arthropods. We are investigating whether these effects increase over time as the perennial flowers have more time to establish and flower in higher densities.

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