

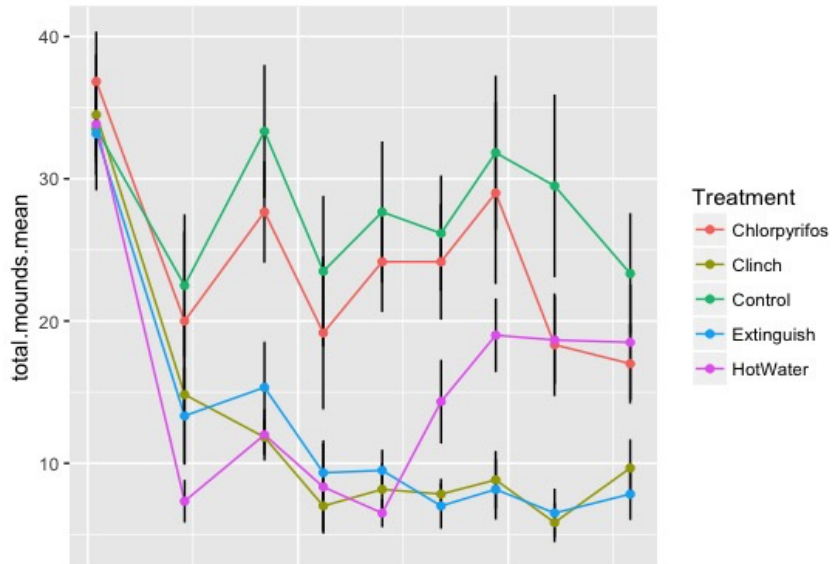
Red Imported Fire Ant (*Solenopsis invicta*) Management in Citrus Groves

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Invasive fire ants, *Solenopsis invicta*, are common in Florida citrus groves and may hinder control of a variety of citrus pests including lebbeck mealybug. To control fire ant populations, four experimental treatments were tested and compared to an untreated control: 1) a ground application rotating chlorpyrifos and bifenthrin, 2) Clinch® ant bait (Abamectin), 3) Extinguish ant bait (S-methoprene), and 4) spot-treating ant colonies with boiling water. Fire ant abundance is assessed by counting the number of surviving colonies, and by determining presence/absence of foragers with cookie

bait. Natural enemy abundance in orange trees is assessed by dissecting mealybug clusters for predators and parasitoids. Preliminary data shows that both insecticidal baits significantly reduce fire ant colony abundance, while hot water treatments only have short-term reductions to colony abundance, and ground applications have no effect on colony abundance. The number of fire ant colonies increased over time in plots treated with hot water and ground applications, while plots treated with insecticidal baits consistently have lower numbers of fire ant colonies. Numerous natural enemies, including predatory fly

larvae, mealybug destroyers, and parasitoids were found in mealybug clusters. However, predator abundance in mealybug clusters was unaffected by treatment. This finding is misleading, because predators were abundant in all treated plots while less so in areas of the grove outside of our trial. This suggests that we have induced an area-wide response to the treatments, reducing overall fire ant activity and supporting increased predator activity. From our results to date, insecticidal ant baits appear to provide consistent control of fire ants.

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