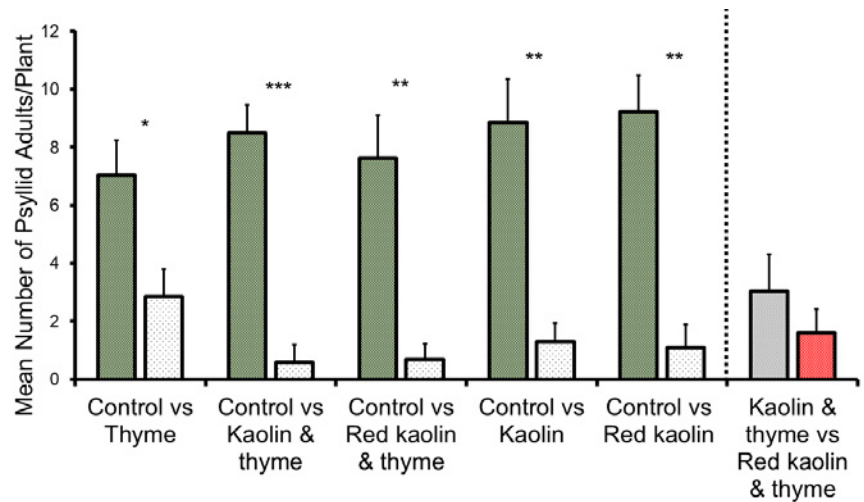


Evaluation of Repellent Effects of Plant-based Essential Oils, Red Dye, and Kaolin on Asian Citrus Psyllid

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Summary: Our team at the UF/IFAS North Florida Research and Education Center (NFREC) is actively pursuing eco-friendly measures to control the Asian citrus psyllid (ACP), vector of the bacterium, *Candidatus Liberibacter asiaticus* causing huanglongbing. In spring 2023, our lab experimented with a combination of essential oils, kaolin, and food colorants as potential deterrents against psyllid infestations on citrus plants. These substances could disrupt the sensory cues on which psyllids rely, promising pest control strategies for citrus growers and homeowners. Research results showed red kaolin had a greater ability

to deter adult psyllids. Both white kaolin and blue kaolin treatments reduced the psyllid population by around 50%, while the red kaolin treatment achieved an 85.5% reduction in the psyllid population. Also, kaolin-based treatments have proved highly effective in preventing female psyllids from laying eggs.

Similarly, the combined use of kaolin and thyme oil was more effective in repelling psyllids than kaolin alone in contrast to the other combinations. Moreover, the effectiveness of the kaolin plus thyme oil combination lasted longer than thyme oil alone.

Take Home Message:

- Red-colored kaolin is more effective in reducing ACP infestations than uncolored (white) kaolin.
- The kaolin and thyme oil formulation enhances control of ACP infestations and have longer residual effect than thyme oil alone.
- Kaolin is well known in pest management, and incorporating repellents or red pigments into the formulation offers the potential to increase ACP control without additional workload.

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