Lebbeck Mealybug Seasonal Population Development

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We sampled lebbeck mealybug populations in eight commercial citrus groves in Central Florida. We started this study in January 2021 and collected mealybug population data every two weeks for one year. Adult female mealybugs were consistently present throughout the year, ranging from 1-5 females per sample. Each adult female can produce 400-1,000 eggs, so populations can expand rapidly over time. Populations of lebbeck mealybug crawlers increased in April and increased until early June. Second instar juveniles increased similarly but at a lower rate than crawlers. It is likely that many crawlers do not survive into the second juvenile stage.

Mid-June through September 2021, fewer juvenile life stages were collected than in the months prior. Because this coincides with the rainy season in Florida, we expect that large quantities of juveniles are dislodged from trees due to heavy periods of rain. When not feeding, these life stages are generally easy to accidentally remove from plants through contact with equipment and people moving through fields.

We found a second build up of juvenile mealybug life stages starting in late September once rains had subsided. Both crawler and juvenile mealybugs continued to accrue in samples until a short freeze in January 2022. We compared the mealybug population development to citrus phenology, we observed that increased egg production coincided with beginning of fruit set in April 2021. Our findings suggest that management prior to fruit set with systemic, bee-safe materials should be included in a mealybug management plan to protect fruit as they begin to develop.

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