

Developing Management Practices for Chilli Thrips in Screenhouse Production Systems

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Chilli thrips is a minute thrips pest that has been in Florida for over a decade, mostly impacting ornamental plantings and some commercial crops including blueberry. Recently, it has become problematic in citrus nursery and citrus under protective screen (CUPS) production environments. Chilli thrips damage includes leaf curling, death of feather flush, and rind damage. Unfortunately, not much is known about chilli thrips in screenhouse citrus. The current goals of our work are to (1) determine optimal scouting procedures for growers and researchers, and (2) understand the population development in relation to citrus, including factors that influence populations in these systems. Our team has been evaluating yellow sticky traps, alcohol washes, and tap sampling as tools to determine chilli thrips population sizes. Alcohol washes require foliage to be collected from trees into plastic zippered bags, submerged in 70% ethanol and shaken to dislodge thrips, then



the contents of the bag poured through a paper coffee filter. We perform this on both soft and hardened leaves to determine which leaf stage(s) chilli thrips are using. Alcohol washes are time consuming but allow researchers to get a clearer picture of total population and different life stages associated with leaves. Another method is the use of yellow sticky cards. Yellow sticky cards are placed on white step-in posts and left out for two weeks then returned and thrips counted under the microscope. These cards are easy to use and can be inspected with a hand lens, however chilli thrips appear to be very attracted to yellow, and cards often have far more chilli thrips than trees, providing an overestimate of the population present. A third method, tap samples, simply require 3 vigorous taps to leaves and a white sticky card to collect falling thrips. Species should be checked with a hand lens as not all will cause damage to citrus fruit and leaves. We are currently



working on relating sticky card and tap sampling to the abundance of thrips found in alcohol washes. Chilli thrips populations in screenhouse production appear to be related to the adjacent vegetation more so than citrus trees. This part of our research is ongoing, but initial data suggests that populations in CUPS are negatively correlated to available resources nearby- when there are no floral resources available outside of the screenhouse, chilli thrips are abundant in the house, and when the external resources are abundant, we see fewer chilli thrips in CUPS. This pattern is less clear in nurseries and their populations may be less influenced by exterior resources.

Future research on chilli thrips will include neighboring vegetation management, movement interruption with a visual attractant, and insecticidal controls.

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