Survey for *Neohydatothrips burungae* on California Citrus

Mark Hoddle
Entomology, UC/Riverside

*Neohydatothrips burungae*, a thrips native to Mexico, Central, and South America, was discovered for the first time attacking lemons in Ventura County in May 2007. The potential threat that this new thrips pest poses to California citrus is currently undetermined; its range in California grown citrus is not known; and, potential quarantine issues for fruit exports could arise because of this insect.

Surveys for *N. burungae* throughout the citrus growing regions have been initiated to determine the range of this pest, affinity for different citrus varieties (e.g., lemons, grapefruit, and oranges), and to demonstrate to trade partners that California citrus growers are taking a proactive approach in dealing with this new addition to the arthropod fauna feeding on California-grown citrus.

Over the period March to June 2008, a total of 25 sites in seven counties (San Diego, Riverside, Orange, Ventura, San Luis Obispo, Solano, and Tulare Counties) have had citrus sampled one to three times for thrips. Young citrus foliage (in particular flush growth on branch terminals) and flowers were sampled for thrips by beating plant material onto a white plastic tray. Dislodged thrips were collected from the tray with a fine paint brush and preserved in 95% ethanol contained within labeled 1.5ml centrifuge vials. Depending on the orchard being sampled, either lemons, grapefruit, or orange foliage was examined for thrips.

An adult *Neohydatothrips burungae*
Labeled vials with thrips were returned to the lab, contents were examined under a microscope and sorted into morphospecies, and thrips were then identified to species or genus. More than 1,200 collected thrips in seven genera in just two families (Aeolothripidae and Thripidae) have been identified so far. Collected thrips have included *Aeolothrips* spp., *Caliothrips fasciatus*, *Chirothrips* sp., *Frankliniella* spp., *Limothrips* sp., *Neohydatothrips* spp., *Scirtothrips citri*, and *Scirtothrips* sp.

The most commonly collected thrips from citrus foliage has been the California native citrus thrips, *S. citri*, which has accounted for 55% of collected thrips. Flower thrips, in particular western flower thrips, *Frankliniella occidentalis*, made up 33% of sampled material. *Neohydatothrips* spp., including *N. burungae*, have accounted for around 8% of collected thrips. Predatory *Aeolothrips* spp. comprised less than 1% of collected thrips. *Neohydatothrips* has been collected predominantly from lemons in Ventura County. No *Neohydatothrips* have been collected from citrus north of Ventura in San Luis, nor has this thrips been collected from citrus in Solano, or Tulare Counties.

Samples of all *Neohydatothrips* collected from citrus either have been or are in the process of being analyzed molecularly for comparison to DNA samples of *N. burungae* samples from Mexico, Central, and South America. All *Neohydatothrips* samples from which DNA has been extracted and analyzed will be slide mounted in Canada balsam and deposited in the UC Riverside Entomology Museum with unique ascension numbers for future retrieval should additional research be warranted.

One more round of sampling across all field sites is planned for late spring 2009. This spring survey will be the final field work phase for this project. It is anticipated that *N. burungae* distribution and densities will not have changed significantly after the completion of the spring 2009 survey, and at this time *N. burungae* would appear to be a minor component of the thrips fauna associated with citrus in California.