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Effect of Temperature on Lighted Sticky Traps (TransTrap®) used to Detect Asian Citrus Psyllids in Shipping Containers

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The Asian citrus psyllid (ACP) is an insect native to tropical and subtropical regions in Asia, which has spread into most citrus producing regions around the world. The main concern with ACP is the spread of Huanglongbing (HLB), a disease vectored by the psyllid. The volume of citrus shipments from Mexico into the U.S. prompted questions about the risk of moving ACP and HLB on this pathway. Our goal was to determine temperatures at which ACP would be active and thus fly to lighted sticky traps inside a transport trailer.

Our results found that temperature significantly affected the number of adults captured. No psyllids were recovered on the traps at 12°C (53°F), which is the average temperature of citrus shipments crossing the border. This is compare with an average capture of 43, 47, and 42% of the released adults at 24, 28, and 32°C (75, 82, and 90°F), respectively. Only 1%, 2% and 18% were captured at 18, 20 and 22°C (64, 68, and 72°F), respectively. Given that the average temperature of limes arriving at the border is 12°C, it is unlikely that ACP adults would fly to a lighted sticky trap placed inside a refrigerated trailer. In addition, the majority of the packing houses in Mexico place the fruit into coolers prior to loading. We believe a lighted sticky trap would not be effective in detecting ACP within refrigerated citrus shipments for the period of time from loading at the packing house to trap recovery at the border crossing.