Florida Citrus Advanced Technology Program

QUARTERLY & FINAL REPORTS: Control of Citrus Greening, Canker & Emerging Diseases of Citrus

Instructions Complete the fields based on your project specs. When finished, save the form to your local disk using a unique name. Then, go to **http://research.fcprac.com**, and log in with your user name and password using Researcher Login in the lower left. Find this project title and click on **Submit a Report**. Update your profile information if needed, then upload this report as directed.

2009-2010 REPORT	CATEGORY (drop-down)	TODAY'S DATE (m/d/yr)
◉ *Quarterly Report* ○ *Annual Report* ○ *Final*	HLB Pathology	6/30/09

WHAT IS THE "HEADLINE" FOR THIS REPORT (e.g. a one-sentence "newspaper headline" describing what you accomplished)

Using psyllids to help complete pathogenicity tests (Koch's Postulates)

TITLE and CONTACT INFORMATION

Proposal Title Psyllid mediated completion of pathogenicity tests (Koch's Postulates) with a pure culture of the associated Huanglongbing causal bacterium

Principal Investigator Vernon D. Damsteegt	*PI Last Name* Damsteegt
Email vern.damsteegt@ars.usda.gov	*FDACS Contract Number* 58-1920-9-925
Phone 301-619-7307	*Project Duration (years)* 2 *Year of Project* 1
Organization Foreign Disease-Weed Science Research Unit	*Total Direct Funds (current year)* $175,000

REPORT UPDATE (650 words; provide details about your headline)

Transmission of Huanglongbing causal bacteria by psyllid feeding is the natural route of transmission. The causal agent has recently been cultured but pathogenicity tests have not been completed to prove the causal nature of the cultured bacteria. Although the release of our funding was delayed for several weeks, we have initiated a staffing plan and begun experiments. For psyllids to acquire the cultured bacteria we had proposed to use membrane-feeding and/or micro-injection to charge the psyllids with the causal bacteria. We are developing protocols for membrane feeding using dilute (5%, 10%, and 20%) sucrose preparations within the membrane. We found psyllids survived for several days on all dilutions. We are beginning experiments to determine what the psyllids can inject into the membrane during feeding and how much they can obtain from feeding through membranes. We are proposing using 5th instar nymphs and adult psyllids for these studies.
We have purchased a micro-injection system and are beginning to test the parameters for successful injection of bacterial culture into the psyllids hemolymph.