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*	Psyllid	7/24/09

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

TITLE and CONTACT INFORMATION

Proposal Title Effects of nutrition and host plant on biology and behavior of the Asian citrus psyllid and implications for managing psyllid populations

Principal Investigator Michael E Rogers	*PI Last Name* Rogers
Email mrgrs@ufl.edu	*FDACS Contract Number* 00072619
Phone 863-956-1151	*Project Duration (years)* 3 *Year of Project* 1
Organization UF / IFAS / CREC	*Total Direct Funds (current year)* 89,586

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

Thus far in the examination of the effect of plant nutritional status on Diaphorina citri Kuwayama biology, we focused on the two most important essential nutrients, Nitrogen and Potassium in several combinations. For this purpose "Valencia" plants, potted individually in plastic containers containing sand as a potting medium were used. Five different fertilization levels were applied to these plants, consisting of high and low nitrogen and potassium levels in all their combinations, plus a nutrition deficient treatment. For each of the plants, psyllid adults from colony reared on sweet orange "Valencia" plants, were caged in plastic transparent cages to lay eggs. After that, adults were removed and the emerged nymphs remained caged until their adult emergence. After that, the adults were removed and killed under exposure in CO2 and then they were weighed individually in a six digit scale. Results showed that the adult weight of the psyllids fed on plants with Low Nitrogen (N) - High Potassium (K) rates was significantly lower than in High Nitrogen (N) - High Potassium (K), Low Nitrogen (N) - Low Potassium (K) and High N - Low K rates, while there was no significant difference between the deficient plants and all the other treatments.

As regards the effect of the host plant on the Asian citrus psyllids fitness, a number of plants were checked about their suitability as host plants for the psyllids. The plant species and varieties were Sour Orange (Citrus aurantium), Sweet Orange (C. sinensis) varieties "Valencia" and "Hamlin", Grapefruit (C. paradisi) varieties "Rio Red" and "Flame", Cleopatra Mandarin (C. reticulata reshni), "Sunburst" tangerine (C. reticulata x. C. paradisi), "Fallglo" tangerine [Bower citrus hybrid (C. reticulata x C. paradisi) x Temple (C. reticulata x C. sinensis)], C. macrophylla, C. volkameriana, "Carrizo" citrange (C. sinensis x Poncirus trifoliata), "Swingle" citrumelo (C. paradisi x P. trifoliata), Curry Leaf Tree (Murraya koenigii) and Orange Jasmine (M. paniculata). For this study, pairs of ACP adults collected from a field wild population and from a population reared on sour orange seedlings were caged on plants with young flushes of the species above to lay eggs. The initial results shown that all the species and varieties above, except Cleopatra mandarin, are suitable as host plants for the Asian citrus psyllids. In Cleopatra mandarin the viability of ACP eggs was very low, because only 4,9% of the laid eggs gave adults. The suitability of the rest of the species and varieties is under experimentation.