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*	Genetics	1/15/10

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

New approaches being explored to enable genetic transformation of Murraya paniculata

TITLE and CONTACT INFORMATION

Proposal Title Development of transformation techniques for Murraya, to engineer a deadly trap plant

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Phone 1-863-956-1151	*Project Duration (years)* 2 *Year of Project* 1
Organization Citrus Research & Education Center	*Total Direct Funds (current year)* 35000

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

Various factors were tested in efforts to develop a genetic transformation protocol for Murraya paniculata, such as varying OD values of the Agrobacterium cultures, the duration of explant incubation time, duration of co-cultivation, and the amount of antibiotic used for selection of transgenic shoots and for Agrobacterium removal using various plasmids and Agrobacterium tumefaciens strains; these include pCAMBIA2301 and pGreen0029 in AGL1, pTLAB21 in EHA101 and pCAMBIA2301 in EHA105. At this time, no transgenic shoots have successfully been regenerated. To overcome this regeneration barrier, consequently, we have pursued in parallel the regeneration of Murraya from axillary buds obtained from in vitro grown seedlings. Conditions suitable for micropropagation of axillary buds as well as induction of multiple shoot regeneration from axillary buds have been standardized; a variety of conditions were screened including those relating to the amount of growth regulators, basal medium and carbon source. The axillary buds are being used as a possible alternative regeneration system for the transformation experiments. Experiments to confirm the uptake of Agrobacterium by the axillary buds are currently underway by co-cultivating intact, nicked and/or pricked axillary buds. Depending on the response of these axillary buds, various treatments such as OD600 of Agrobacterium cultures, duration of incubation time, duration of co-cultivation and amount of antibiotic used will be carried out.