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	11/19/09

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

Genetic transformation of Murraya paniculata is an ongoing challenge

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)

In efforts to standardize the genetic transformation protocol for Murraya paniculata, new experiments have been designed and implemented using pTLAB21 harbored in Agrobacterium tumefaciens strain EHA101, as previous efforts with standard citrus transformation strains and vectors were not successful. We have also tested pCAMBIA2301 and pGreen0029 in AGL1 for comparison. Epicotyl segments obtained from in vitro grown seedlings of Murraya were used as explants and a tissue culture medium designated as M10 (Murashige and Skoog's (MS) standard medium supplemented with predetermined levels of BA and NAA) was used as the regeneration medium for all the transformation experiments. Various factors are being tested in efforts to develop a standard protocol for transformation, 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. At this time, no shoots have successfully been regenerated. Consequently, we are pursuing in parallel the regeneration of Murraya from axillary buds obtained from in vitro grown seedlings; this technique is being standardized with the aim of using it as a possible alternative regeneration system for future transformation experiments. Different concentrations of BA alone and in combination with NAA are being tested to induce multiple shoot regeneration from axillary buds.