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*	Management	10/15/09

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

Herbicides can kill HLB infected and abandoned trees for better disease control

TITLE and CONTACT INFORMATION

Proposal Title Elimination of HLB infected trees without physical removal through application of herbicides

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Phone 863 956 1151 ext. 1265	*Project Duration (years)* 2 *Year of Project* 1
Organization CREC-IFAS-UF	*Total Direct Funds (current year)* $43,918

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

The first year summer tests are concluded with mixed results. Over 300 trees were treated with the herbicide formulas Arsenal (Powerline) or Clearstand using 1 to 6 or 1 to 7.5 dilutions. These rates had a very poor percentage kill and required retreatment. For summer use, trunk applications of these herbicides will have to be in the 1 to 1 or at most 1 to 3 dilution rates. Next summer 1to 1, 1 to 2 and 1 to 3 dilutions will be tested. Fall tests are showing good results again. Alternatives to 1 1/2 inch blade cuts are being tested. Manual power saw blade cuts to different depths with two different herbicide dilutions have been made for evaluation.

An electro-hydraulic mechanized tree trunk incision clamp system was developed and tested on a 4 X 4 ATV. Three problems were identified in the initial tests. First, the system's gross weight proved too much for the ATV's front end suspension. Second, the system's hydraulic motor was damaged, therefore resulting in erratic actuator operating pressures. Third, the clamping mechanism design was too vulnerable to operating stresses: The main actuator was not able to produce enough compression pressure. The incision blades and their corresponding compression angles were not adequate to reach the required trunk incision depth. To help resolve these issues, the entire system was transferred onto a utility tractor, which its front end suspension is capable of enduring the system's gross weight. The system shares the same hydraulic pump as the tractor uses for its end loader operations, therefore eliminating erratic actuator operating pressures. A larger bore cylinder and a revised clamping mechanism design, including incision blade gaps and reduced compression angles, improved the trunk incision depth, which should be adequate for the herbicide spray application. This system should be completed and tested with herbicide sprays in November.

Aerial sprays applied by the South Florida Water Management District to 600 acres of abandoned citrus were evaluated about 60 days after treatment this summer. Many trees were successfully killed, but in two or three blocks where scion and rootstocks differed between different ages of trees not all of the trees were killed. There small plot spray tests were not as successful as their earlier test last winter. Again, it appears that sprays during active growth are not as successful. There are 40 acres remaining in this test area and plans call for applying at least 4 treatments with 2 replications (5 acre plots) in order to evaluate some surfactants to improve efficacy. Also, additional chemicals will be tested.