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Progress Report for the National Foliage Foundation

Title: Development of *Xanthomonas* Resistant Cultivars of Aglaonema

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In the past fourteen months we have identified distinct species within the predescribed pathogen *Xanthomonas axonopodis* pv *dieffenbachiae* species. This pathogen is known to cause significant crop losses to the tropical foliage industry. We have used various molecular techniques to substantiate our findings (rep-PCR, AFLP, DNA:DNA homology, and specific gene sequencing). We have found that these undescribed species only infect certain hosts. This information is very valuable for resistance-breeding projects as well to producers interested in intercropping. Also, within the last year we have made Recipical Interspecific Crosses of Aglonema species that are believed to carry resistance genes to *Xanthomonas* (*commutatum* 'Truebi' X *A. nitidum* 'Curtissi').

In a closely related project we have identified and sequenced possible resistance genes in anthurium species. This has been done by using degenerate primers that can amplify gene segments known to be linked to *Xanthomonas* resistance in agronomic crops. It is believed that many resistance genes are highly conserved within plant species. Thus, we can utilize findings from multimillion-dollar genome projects. If these gene sequences are found to provide resistance in anthurium we will look to see if they exist in aglaonema.

This summer we will be screening species of aglonema with *Xanthomonas* strains from different geographic sources. This is being done to insure that the progeny being produced are resistant to strains of the pathogen from different geographic origins. In addition progeny produced in last years crosses will be compared using some of the previously mentioned techniques to hopefully identify Xanthomonas resistant aglonema line. We are hopping that this research will may make it possible to screen plants in the future for resistance without pathogen challenge.