

**Final Report to
The Agricultural Research Foundation
and the
Nursery Regulatory Committee**

Date: December 27, 2005

Project Title: Acidification of field soils through drip tape

Project Number: 05-12

Principal investigator:

James Altland

Assistant Professor

North Willamette Research and Extension Center

15210 NE Miley Road

Aurora, OR 97002

Phone: 503-678-1264 ext 46

Fax: 503-678-5986

Abstract

This objective of this research was to develop specific recommendations for injecting acid fertilizers for the purpose of lowering soil pH. Specifically, we will determine rates and frequency of injecting urea based acids for safely lowering soil pH in fields with red maples. Lowering soil pH will result in increased Mn availability in soils, increased Mn uptake in red maples, and decreased severity of chlorosis.

Progress:

A plot was installed at a local nursery. Tissue culture red maples were planted to documents the influence of acid injections on both soil chemistry and plant foliar micronutrient levels. Due to the weather and some logistical problems, the plot for this project was installed later in the growing season than anticipated. We would have like to start sometime in June, however, the plot was not ready until late July. Even then, just when we thought we were ready to start the injections, the fertilizer company had no n-phuric fertilizer in the Willamette Valley to supply us. We had to wait another 2 weeks to get the product. Ultimately we began the injections in early August. We are collecting data on how soil pH and available micronutrients respond to these acid fertilizer injections.

Because the project was started so late in the growing season, we don't believe we will be able to accurately gauge plant response to the fertilizer injections. Therefore, we will repeat this experiment again in 2006. Due to our experiences in 2005, we have now worked out all the problems with our injection system. We will be able to execute this experiment with no problems in 2006, and should have very useful data by the end of the

growing season. I want to be sure that all money invested in my research program yields valuable data for the nursery industry. I am not satisfied with what I was able to accomplish with this project this year, therefore, I will repeat the trial in 2006 without requesting additional funds.