

A Transportation Alliance of Environmental Horticulture Producers in Georgia: Issues and Feasibility

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Problem Statement

The distribution costs of transporting plant material beyond the farm gate and of the acquisition of production inputs are a major concern to growers of plant materials. Surveys of Georgia growers indicate transportation costs rose 21% in 2009 and now account for 10% of the total cost of production. Although many large growing operations rely on outsourcing transportation through third party shippers, the small to medium sized Georgia growers share clients, routes, and origins but with each producer having an independent transportation system, leading to desires for optimizing performance of vehicle operations to save fuel, reduce labor and maintenance costs, and operate in a more sustainable manner.

Objectives & Methodology

The primary objective of the study is to determine if transportation alliances among growers would reduce shipping costs, increase distribution efficiencies, and reduce CO₂ emissions among ornamental plants producers in Georgia. A survey of small and medium-sized container nurseries/greenhouses in Georgia was conducted to gather data regarding shipping costs, orders and fleet management.

Routings were constructed and a cost analysis was conducted for e

ach participant and for the proposed transportation alliance. Using the GIS software, ArcLogistics 9.3, routing plans were developed for the alliance and participating nurseries so that sensitivity analyses could be conducted to show cost saving opportunities through the alliance.

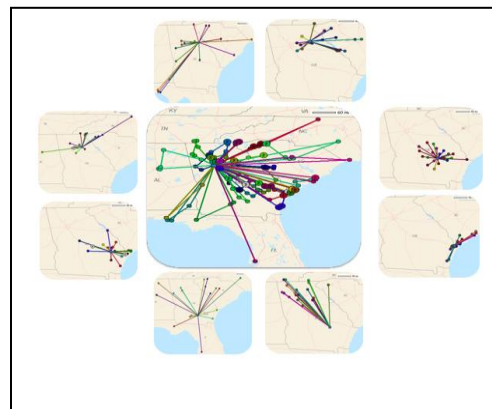
Issues or Concerns

Although the task of collecting data and adapting to the data needs for driving the software seemed to have buy-in from the growers, when the survey arrived at each grower's place of business, roadblocks suddenly appeared, primarily as issues or concerns among the cooperators and participating nurseries: What's in it for me? A sudden reluctance to provide information about their individual operations; What is an alliance (versus a cooperative or merger)?; and Could a phantom identification arise suggesting competitive strategies or actions of particular growers?

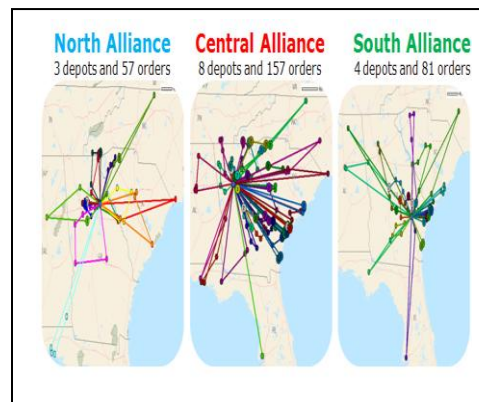
There were also the academic issues of survey design, collecting an adequate sample size, and specific data needed for the software not being available or not in the format requested, the lack of commonalities among the participating growing operations; and the relevance of averages.

Feasibility of an Alliance

Average total cost savings, 9%;
Average total miles driven savings, 8%;
Average # trucks savings, 8%;
Average driving hours savings, 15%;
Average CO₂ savings, 8%



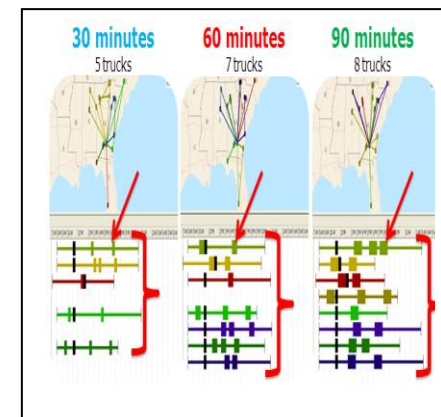
Order Sharing Routing Maps



Location Clusters Routing Maps



Optimal # of Orders Routing Maps



Time Windows Routing Maps

Selected Reference

Mantilla, Javier Compte. 2010. *Transportation Alliance of the Ornamental Industry in the State of Georgia*. Unpublished MS Thesis, University of Georgia, Athens, GA.