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Using a Transportation Alliance to Solve Distribution Issues for Buying Local

Forrest Stegelin

Most Georgia produce and green industry operations own their own box or container trucks and tow-trailers, owning multiple units of various sizes and capacities so that a match can occur between order size and appropriate vehicle for delivery. Among the factors that affect the expansion of horticultural crop (food or ornamental) operations, production, marketing, personnel, and transportation are considered the most relevant (Hodges and Haydu 2005). In the agricultural sector the importance of transportation costs is heightened as evidenced by the fact that transportation accounts for over ten percent of the wholesale value of total farm shipments (Stegelin 2009).

This update shares the results of a study to determine if a transportation alliance would reduce shipping costs and increase distribution efficiency among fresh produce suppliers in Georgia who are “selling local.” The methodology includes conducting meetings with prospective collaborators to explain the reasons and benefits for participating in the evaluation, explaining what an alliance is, and identifying the data needed as input to develop a simple unit-cost allocation model that is adaptable and useable with the GIS software ArcLogistics 9.3. The last step is to evaluate and interpret the results to build a sensitivity analysis.

Once the order-sharing routings were developed, three alliances were considered, which represented most of the production among the small- to medium-

sized operations. An attempt was made to determine the optimal number of orders per shipping cycle given the three location clusters (alliances). Time windows were also evaluated with respect to the delivery efficiency (time spent unloading at each delivery destination). With respect to each of the alliances, a central depot location (central to the producing operations in that alliance) and a major thoroughfare location were also evaluated. Although the study seemed to have buy-in from the fruit and vegetable growers, concerns among the cooperators and participating producers arose with respect to the survey.

Results

The net results for the three produce transportation alliances were:

- Average total cost savings to the participating operators were seven percent;
- Average total miles driven were reduced eight percent;
- Average numbers of trucks owned were reduced seven percent;
- Average hours driving time declined 12 percent; and
- Average CO₂ emissions (carbon footprint) were reduced seven percent.