Transplant production decision tool for vegetable producers

Joseph Ward
Iowa Organic Association - Marion, IA

Chris Blanchard
Flying Rutabaga Works

Follow this and additional works at: http://lib.dr.iastate.edu/leopold_grantreports

Part of the Entrepreneurial and Small Business Operations Commons, and the Horticulture Commons

Recommended Citation
Ward, Joseph and Blanchard, Chris, "Transplant production decision tool for vegetable producers" (2013). Leopold Center Completed Grant Reports. 426.
http://lib.dr.iastate.edu/leopold_grantreports/426

This Article is brought to you for free and open access by the Leopold Center for Sustainable Agriculture at Iowa State University Digital Repository. It has been accepted for inclusion in Leopold Center Completed Grant Reports by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Transplant production decision tool for vegetable producers

Abstract
When local vegetable producers "scale up" their production to meet an increasing demand for local produce from institutional and retail purchasers, they face a number of investment challenges as they adopt appropriate systems and techniques. A key area of interest is how to manage transplant production as growers expand their operations.

Keywords
Farmer profitability enterprise budgets, Fruit and vegetables

Disciplines
Entrepreneurial and Small Business Operations | Horticulture

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/leopold_grantreports/426
Transplant production decision tool for vegetable producers

**Q** How can information about transplant production help Iowa vegetable farmers?

**A** Appropriate transplant production systems can be an important element of a farm’s success. Understanding the interaction of different system elements can reduce overall investment and provide durable, flexible systems. A successful system requires components that mesh well and fit the needs of the operation.

**Background**

Transplant production is a key element for large-scale production of crops such as broccoli, tomatoes, peppers, onions and lettuce. It reduces risks in stand establishment and weed control, and provides a reliable method for season extension in Iowa and the upper Midwest. As growers move from small-scale vegetable production to a level of production that can supply commercial accounts, the necessary techniques and equipment will change. For example, setting transplants by hand may be effective on a 5-acre vegetable farm, but a larger farm operator may not be able to set an adequate number of transplants by hand in the time available.

In years when spring weather is less than optimal, the ability to transplant plants in a timely fashion can make a critical difference in a farmer’s ability to produce adequate crop supplies for large-volume buyers. Large-volume markets have less flexibility than a CSA, farmers market or small grocery when it comes to substituting for local produce, and consistent supply plays a very important role in securing market share.

Appropriate choices in a transplant production system can facilitate growth by reducing future capital costs and systems-development needs as the scale of the operation grows. By understanding and evaluating the limitations and compatibilities of various elements of a transplant production system, expanding operations can anticipate future investment needs, as well as design systems unique to their crop mix, skills and quality-of-life goals.

The project objectives were to:
- develop a web-based Transplant Production Decision Tool that will be used by at least 20 Iowa vegetable growers in evaluating options as they consider expanding production in order to supply larger-volume markets, and
- summarize project results to at least 40 Iowa vegetable growers and educators of Iowa vegetable growers.
Approach and methods
Farmer and consultant Chris Blanchard visited and assessed transplant systems at nine upper Midwest vegetable farms:
• Gardens of Eagan, Farmington, Minnesota;
• Featherstone Farm, Rushford Minnesota;
• Vermont Valley Community Farm, Blue Mounds, Wisconsin;
• Tipi Produce, Evansville, Wisconsin;
• River Root Farm, Decorah, Iowa;
• Food Farm, Wrenshall, Minnesota;
• Stillwater Greenhouse, Orchard, Iowa;
• Harmony Valley Farm, Viroqua, Wisconsin; and
• his own operation (Rock Spring Farm, Decorah, Iowa).
He documented and evaluated transplant production systems and strategies. Interviews with growers described farm background and history, farmer experience and production practices. A narrative summary of each farm’s transplant production system was developed, and selected summaries were posted on the Iowa Organic Association website.

The decision tool also describes options and costs for each element of the transplant production system: seeding, germination, irrigation, fertilization, and setting the transplants out in the field. Pricing information was developed when available. The decision tool draws on farmer interviews to provide a narrative evaluation of the ways in which equipment purchases or technique adoption have reduced the production risks of each operation visited, as well as the positive impacts they have had on the lives of the growers who have adopted them. Narrative discussions also focus on risk mitigation and quality-of-life considerations where applicable.

Results and discussion
Based on the raw data from individual farm profiles, the investigators amassed these findings. The type of operation inputs used will impact management and cell size required, but was not anticipated as a factor. Organic operations are not able to easily add additional fertilizer through irrigation systems in case of poor transplanting conditions, so larger cell sizes are required. Additionally, compost-based potting mixes used by organic producers weigh more than peat-based systems. As a result, germination shelves and other equipment must be suited to extra weight and larger cells.

Overall, farms appeared to have very efficient systems or very inefficient systems, with little middle ground. Components, regardless of cost or appearance, either fit together efficiently as a well-thought-out system, or every step of the process was inefficient.

Conclusions
Successful midsize and large-scale vegetable growers take a variety of approaches to transplant production and setting out plants. Systems vary according to grower preference, resource availability, scale, and labor availability. Operating elements differ in the degree of skill needed, and the availability of labor to properly operate system elements.
The usefulness and value of this project could be expanded by:
1. An increased understanding of the difference between organic and conventional vegetable transplant production. Organic growers described few, if any, pest control issues, and used little supplemental fertilization, with positive environmental effects. How can these benefits be realized on conventional as well as organic farms?
2. The use of video to document the workings of various elements of transplant operations, increasing grower understanding of the physical workings of the tools and processes.
3. Grower narratives and video about adjusting and using various pieces of equipment to speed adoption and reduce risk.

**Impact of results**

The project objectives were achieved and results (including the decision tool) were shared via the Iowa Organic Association website (iowaorganic.org). The information collected for the project can increase the ability of Iowa farmers to make flexible and effective investment choices as they switch to or scale up their vegetable transplant production.

**Education and outreach**

Chris Blanchard, project co-PI, gave two presentations to audiences that included Iowa vegetable growers. One was at the 2011 Iowa Fruit and Vegetable Growers Conference with more than 40 attendees. A second presentation was at the 2012 Great Plains Growers Conference held in St. Joseph, Missouri, and more than 40 producers attended. Additional outreach in February 2013 included the Ohio Ecological Food and Farming Conference to over 50 people. Blanchard also presented at the MOSES Organic Farming Conference in LaCrosse, Wisconsin to more than 100 people.

**Leveraged funds**

No additional funds were leveraged by this project.

---

For more information, contact:
Amber Anderson
Mba, Iowa Organic Association, PO Box 185, Ames, IA 50010; (515) 708-1813; email iowaorganic@gmail.com