

Tunnels to tables: High tunnel production and distribution model for produce

Abstract: High tunnel facilities offer a production alternative for specialty crop farmers, but also require a new set of management skills and tactics.

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With proper management and marketing, the earlier yields and high-quality produce from high tunnel production can increase net income potential on a small farm.

What was done and why?

Iowans have shown a keen interest in the possibilities for high-tunnel crop production because it offers options for growing high-value crops and lengthening the growing seasons for selling these products. Questions existed about the yield potential, profitability and market distribution channels that would work for new or traditional farming operations. This project sought to test how the high tunnels would work for fruit and vegetable crops, and how the produce might be distributed and marketed.

The high-tunnel production component of the project utilized high-tunnel facilities at the ISU Armstrong Research Demonstration Farm and the ISU Horticulture Research Farm. Production models and budgets were developed for specific high-value fruit and vegetable crops such as tomatoes, peppers, pole beans and Greek oregano. A complex consisting of several high tunnels was determined to be more efficient and economical to operate on a per unit basis than a single tunnel.

The business modeling component of the project looked at the challenges and opportunities present under three different scenarios designed to handle the accumulation, light processing and distribution of produce grown in the high tunnels.

What did we learn?

Detailed production data, including financial projection budgets, have been developed for the crops in the study. Not all proved to be profitable and/or practical to grow under the high tunnels. The most successful strategy that emerged was to have a highly integrated cropping plan that involves growing multiple crops per year. The other major finding was that high-tunnel production requires intensive management and careful control of the environmental conditions inside the structures. In most cases, crop diseases were less prevalent, but insect pressures increased. Production scale and marketing strategies also affect ultimate profitability.

High-tunnel production may allow produce to reach the market earlier and extends the growing season for some crops, such as tomatoes, peppers, green beans, cucumbers, strawberries, raspberries, and blackberries.

