Strategies to stabilize locally grown produce for year-round sales: A feasibility study

While many Iowa producers may be satisfied with the amount that they can produce and sell in a given season, others may feel that they need to expand their operation and sell product year-round. The results of this feasibility project show that a small processing facility could be developed that would allow individual and groups of producers to process enough products for year-round sales.

What was done and why?

The question is whether on-farm small-scale stabilization of highly perishable foods (in this case, fruits and vegetables) is physically and economically possible. Successful stabilization would allow year-round sales of produce grown in Iowa.

Specific project objectives were to:
- Determine the types of food processing unit operations that would be suitable for small-scale mobile units,
- Determine the placement of pathogen reduction technologies within the operation to ensure that the mobile unit is capable of producing safe food,
- Determine the energy costs associated with unit processing of each selected operation, and whether this would prevent adoption of the selected process,
- Develop plans and determine overall costs for construction of the pilot unit, and
- Determine the willingness to pay specifically for year-round availability of locally grown produce by institutions and consumers.

What did we learn?

Design, energy, and water inputs and costs were determined for a blanching/freezing operation that could process 1,000 lbs/hour of any likely product. Overall, energy costs to operate all equipment in this process were determined to be nearly 200 kW (250 HP). (This refers to the overall requirements for the process as measured in generator requirements.) Water requirements were estimated to be near 100 gallons per hour, which could be a problem to access in a remote field location. It was estimated that four to five persons would be needed to operate the unit and perform subsequent needed tasks.

The concept of a mobile unit was discarded in favor of a static, small-scale processing plant with ample frozen storage for bulk product. A processing plant must include the building, building renovations, personnel, installation, start-up and utilities. The equipment, installation and start-up are estimated to cost $1.7 million.