High value from high tunnels

Projects included:

- Optimizing Blackberry Plant and Cane Management in High Tunnels (Pritts, 2011-2014)
- Blackberry Production in Cold Climates (Pritts, 2008-2011)
- Season Extension for Raspberries, Blackberries and Strawberries using High Tunnels and Cultural Manipulations (Pritts, 2006-2008)
- Fostering the Use of High Tunnels for Season Extension in New York State Through Applied Research and Extension (Wien and Reid, 2007-2010)
- High tunnel blackberries- Smith-Lever (Pritts, 2011-2014)

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Need: The growing season is too short to produce certain high-value crops in New York, and extension of the growing season can benefit consumers by providing a larger local food supply. The high tunnel system, an unheated greenhouse-like structure, can extend the growing season by a month on each end, and for some crops it reduces the incidence of disease due to better control over water. However, the systems have not been widely used in New York, and growers need to know both what to grow and how to grow it in this modified growing environment. Farmers can benefit from increased production capabilities as well as higher off-season prices. Consumers benefit from a local food supply that extends into a longer season, comprised of crops that require fewer applications of fungicides.

Approach: Cold-tender high value crops such as strawberries, raspberries, blackberries, and flowers were evaluated for yield and quality in high tunnels. Suitable varieties for high tunnels, economic viability and cropping systems for pest and disease management of growing these crops in high tunnels were tested, and growers were educated about the potential for high tunnels. Resources, including a free guide, a high tunnels website, two videos on grafting of tomatoes for high tunnels, and high tunnel tours for home gardeners have been developed. Lessons learned in applied research have been shared across the state by regional and local Cooperative Extension staff. Using high tunnels for season extension has been the focus of workshops and trainings offered to producers and residents of 22 counties in 2013.

Impact: Cornell University research has helped turn a promising new technology into a viable economic option for New York growers. The research projects have shown that it is possible to extend the crop growing season by about a month at both ends, and high tunnel utilization has become an important part of vegetable, berry and flower production in New York State. Economic analysis showed that the cumulative net profit over the expected 10-year life of a high tunnel is $44,000 for a single tunnel, or the equivalent of $600,000 per acre. Use of special techniques such as grafting of high tunnel tomatoes to rootstocks resulted in a mean increase of 4.7 lbs tomatoes per plant--an average increase of nearly 3,000 lbs per greenhouse. In an evaluation in the 11 counties involved in the Cornell Vegetable Program, 98% of participants reported that training related to high-tunnel production allowed for an improved ability to respond to market variations through alternative production strategies and 48% indicated that they adopted high tunnels to improve efficiency, quality and resource conservation.

Related Information: Cornell High Tunnels