

Sustaining Farming on the Urban Fringe



Monthly Highlights from Rutgers New Jersey Agricultural Experiment Station

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NJ Agriculture at a Glance - Floriculture

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Floriculture is the growing of potted flowering plants, baskets, herbaceous perennials, bedding plants, cut flowers, and other plants bringing beauty to your life and our world. Think of hardy mums, Easter lilies, or patio plants and you are thinking of floriculture farming in the Garden State.

NJ floriculture crops ranked 9th in the nation with expanded wholesale sales of \$147 million for 2005. New Jersey reports 359 grower families with sales over \$10,000 and 184 of these grower families have sales of \$100,000 or more. The 184 growers selling \$100,000 or more represent just 51% of growers, but produced \$140 million—95% of the total value of NJ's production.

\$147 million does not include the many smaller or part-time supplemental income family farmers selling direct to local customers, at farmers' markets, or other outlets. Thus, floriculture in NJ reveals a trend similar to all farming in our nation; a smaller percentage of family farms are producing most of the output. This statistic is neither good nor troubling. It is a fact, not a value judgment.

Controlled environment horticulture (a.k.a. greenhouse production) encompasses growing systems for bedding plants, pot plants, cut flowers, plugs, and vegetables. Greenhouse production incorporates some type of structure and related environmental control and plant growing systems. The structures range from simple shades to fully enclosed structures. The degree of environmental control ranges from simple (often manual and controlling a limited number of environmental parameters) to highly sophisticated (computer control of all impacting environmental parameters). Similarly, the growing systems employed range from entirely manual to fully automated. Often, the availability, affordability, and skill of the local labor force significantly determine the necessary degree of environ-



mental control and growing system automation. Greenhouse production systems are found across the state and are specifically used to overcome the vagaries of outside weather conditions.

Greenhouse growers are among farming's earliest adopters of energy conservation, water conservation, and labor saving technologies in their production. Some farm interest groups raise land use policy concerns over greenhouses' "impervious cover" of NJ's farming landscape. They argue large greenhouses channel runoff rain affecting local water quality, instead of capturing rain on open fields. Let's examine NJ's floriculture land use. Floriculture farmers produce from a total greenhouse area of 18.2 million square feet. 98% of these covered growing spaces are greenhouses of varying types. Sounds impressive, like a lot of impervious cover, right? Wrong. 18.2 million square feet represents a measly 418 NJ acres. By comparison, these same floriculture growers also produce on 2,685 acres of open fields. NJ's farmland is around 800,000 acres, and

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Rutgers NJAES and Greenhouse and Floriculture Industry

George Wulster, Extension Floriculture Specialist

The New Jersey Floriculture industry is a unique agricultural industry that predominantly relies on controlled environments (greenhouse structures) for year around production. In 2005 the Industry consisted of approximately 360 producers producing a wide variety of species. Producers make great investments in technology and automation to produce the greatest amount of plant material possible in the smallest area. It is safe to say the production efficiencies of a modern greenhouse are unmatched in any other form of agricultural or horticultural enterprise. It may seem hard to believe but NJ producers generate 150 million dollars of product on a mere 350-400 acres of land!

Research and demonstration efforts at NJAES help to make this happen. They include such activities as: variety evaluations like the annual Poinsettia trial and “Open House”, effects of environmental manipulation, and chemical treatments on plant morphology and production time, and the evaluation and improvement of important greenhouse systems such as those used for temperature management, irrigation and fertilization. New greenhouse structures and technologies such as the new “Open Roof” design, coupled with heated floors and recirculating irrigation systems are currently being evaluated. Marketing research and information is also provided to the industry.

Over the years results have improved energy efficiency and reduced heating and ventilation costs in greenhouse production. Research on temperature manipulation within greenhouses coupled with plant growth regulating compounds has reduced production time, and helped refine control of crop production. Variety trials and demonstrations help growers view and evaluate some of the constantly changing plant species while market and economic research help them understand their costs and decide how best to market their products.

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418 covered acres equals 0.05% of the State’s total. Most impervious cover concerns are really personal value judgments against perceived “industrial farming,” large corporate family farms, or farm structures deemed not “pastoral” on our Garden State landscape.

Controlled environment horticulture fits well in the Garden State, makes beautiful contributions to the public, uses little land, and remains profitable for farm families. Water runoff from impervious greenhouse covers is easily captured and managed with environmentally engineered care for beneficial reuse, runoff avoidance, or percolation with engineered designs like the constructed wetlands on display at our Rutgers NJAES Snyder Research and Extension Farm.



Figure 1. Single span, naturally ventilated greenhouse covered with air-inflated double-layer polyethylene film. The crop is supported a few inches above the dirt floor. Photo: A.J. Both.



Figure 2. Multi span, mechanically ventilated greenhouse covered with glass. The plants are grown on benches. The greenhouse is heated using unit heaters. Photo: A.J. Both.