

# Sustaining Farming on the Urban Fringe



Monthly Highlights from the New Jersey Agricultural Experiment Station

March 2007

## Sharing our Greenhouse Re-glazing Experience

### *A 2<sup>nd</sup> Energy Conservation Life for Old Glass Greenhouses*

*Joseph V. Florentine, NJAES Greenhouse Operations and Jack Rabin, Associate Director – Farm Programs*

There are many old lapped glass greenhouses remaining in use throughout New Jersey. Problems of slipped glass, high energy costs, and drips washing out seedling trays leave owners considering costly replacement, or even abandonment. There is another option. If the structure, heating, and cooling systems are maintained in good shape, it may be economical to re-glaze the old greenhouse with acrylic or polycarbonate double wall panels.

Double wall sheets of these plastic materials come in 8 or 16 millimeter thicknesses and are more energy efficient than glass or single layer plastic glazing. Depending on the thickness of double wall material used, a savings of 30 to 45% on heating costs can be expected from re-glazing using double wall plastic panels.

At Rutgers NJAES on campus, an old greenhouse used by our turf breeders sorely needed re-glazing. It was debated whether to reset original glass, re-glaze with a double wall plastic panel, or even demolish it. We needed space and could not afford new construction. There were many factors to be weighed; costs of the project, energy conservation, maintenance issues with glass vs. plastic, and overall life expectancy. We also wanted to perform all work with our own fabrication shop and greenhouse crew to reduce expenses. After figuring out how much time it would take to clean, caulk and reset glass, we decided to re-glaze with 8 mm polycarbonate.



*Before: greenhouse in need of repair, May 2005*



*Removal of glass*

Before starting a project like this, make sure the greenhouse structure is in good shape along with heating and cooling systems. A re-glaze is an investment lasting at least 10 years, and these components need to function that long. If old wood glazing bars remain in

*Continued on page 2*

good condition, they can be painted and reused to support the new glazing system's aluminum extrusions. We did this for our re-glaze project, which further reduced costs.

We were assisted with our project by Bill Rowohlt of Ludy Greenhouse Manufacturing. Bill figured out the material list and provided tips on panel installation. The learning curve was quick and work progressed well. One thing we found in the process was the greenhouse was no longer square; roof dimensions varied by as much as an inch. By using a scrap piece of plastic panel, cut to length, we adjusted upper glazing supports up or down as needed before installing a full size panel.

Our results at NJAES are a leak-proof, draft-free greenhouse and a substantial savings in energy use (approximately 30%). The cost of materials to re-glaze this 25'x50' greenhouse in 2005 was \$8,500 which included re-glazing the sidewalls and roof vents. As you can see from the pictures, the looks of the greenhouse improved dramatically as well.



*Re-glazing in progress*



*After: re-glazed greenhouse, September 2005*

**Our work benefiting farming sustainability and quality of life in New Jersey depends on gifts from people sharing our NJAES vision for a vibrant, healthy, profitable urban fringe farming community. We invite you to join us. Support NJAES' commitment developing practical approaches to sustain New Jersey's urban fringe agriculture and local food. Make a tax-deductible gift advancing specific sustainable farming programs or an unrestricted gift toward farm-size neutral, environmentally sensitive farming innovations. Consider including Rutgers NJAES in your estate plan. Please contact Jack Rabin at (732) 932-5000 ext. 610 or [rabin@aesop.rutgers.edu](mailto:rabin@aesop.rutgers.edu).**