Companion Coverage
How and When to Expand 54

This Year in Structures

Energy concerns and automation — the big talk for the year.

By Neda Simeonova

Top: Open-roof greenhouse by DeCloet Greenhouse Manufacturing; Bottom: AgraTech's Solar Light greenhouse.

For large and small growers alike, every year brings new uncertainties and questions about how to remain in business. A sluggish economy and soaring energy prices continue to influence trends in greenhouse structures. Investing in automation tops the list of factors that help greenhouse operations through the difficult times.

ENERGY AND ECONOMY

During the last few years, the weakened economy and high energy costs have raised major concerns with growers. Energy conservation has become the number one priority in structures because of its significant cost in greenhouse production.

"For a couple of years, we've hit a downside in the economy, so pulling up your bootstraps particularly with energy conservation is very important," said Tim Mack, vice president of Agro Dynamics.

According to Mack, energy is where growers need to look first when finding ways to reduce overall costs. Paul Thomas, associate professor of Floriculture at the University of Georgia, agrees. "I think we're going through a temporary economic decline. We all know that the price of fuel, especially natural gas and propane has been very erratic, and the growers have a hard time financially planning as to how much their energy costs are going to be. I think growers who are planning on being in business in the next 20 years have to deal with energy management," Thomas said.

According to Thomas, structures that take advantage of passive cooling — greenhouses with rollup sides and retractable roofs — are very efficient and increase the ability of the grower to manage temperature without increasing expense.

"Customers are making sure that they get the most value for their dollar," explained Mike Porter, president of Nexus Corporation. "One trend we see is customers looking to open-roof structure, which allows them to save money in a variety of ways. Such a structure can be covered with glass or hard polycarbonate and thereby saves money on replacing coverings so often. The open roof also saves money by not installing fans or pads. There is no electrical or installation costs associated with those items, and maintenance costs and utility charges are reduced."

AUTOMATION

Despite a weakened economy, structures are also changing from a technological standpoint. Industry officials agree that automation is important in helping greenhouse operations through tough times.

According to Mack, greenhouse automation is the main focus in making structures more efficient. A rising number of

growers are investing in computer-controlled systems. Such systems can make a big difference in the greenhouse. "It will automatically adjust the climate in your greenhouse with outside temperatures; it will open and close vents for cooling; and it controls all environments, including the irrigation system," he said. "These aren't greenhouses anymore, they are factories. They've grown to the size where it's not mom and pop with a couple of acres in the back yard anymore. These greenhouses have become huge factory operations, and to be that type of operation, it requires specialized products, specialized computers and specialized structures to maximize the return of the investment put into these large structures."

Because of the economic decline, there is a big concern about making significant capital investments. It is getting more difficult, especially for the family-owned businesses. However, Mack thinks the return from investing into a computer-controlled system is 1-3 years.

"Automation is an expensive capital investment. Everybody is concerned about that, but the ones that are not as sufficient may not be the ones that survive at the end of the day," said Mack.

Automation has also played an important role in minimizing labor. According to Dennis Raath, institutional sales manager for Ludy Greenhouses, one of the biggest problems growers are most likely facing this year is labor reduction. "With the way the economy is, growers are trying to cut back on labor. For example, automated irrigation or equipment can be more efficient in the greenhouse. That would definitely be cutting back on labor," Raath said.

Bill Vietas, general manager of the commercial division at Rough Brothers, agrees that automation helps reduce labor. "The trend is toward minimizing labor, because if you look at the growing costs in most greenhouses, labor is a large percentage. Even smaller operations are looking into automation, because you have to push the edge or somebody else will, and you won't be able to do it," said Vietas.

In addition, the development of products such as the labor tracking system has changed the way growers monitor their workers. It allows them to identify the workers who are underperforming and reward the workers that are giving extraordinary performance, and increases production significantly.

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Greenhouse controls

The Posi-Clasp VCU features a LED digital display, curtain operation status, program lock mode and manual override. The unit will not lose the program during power outages and comes with a two-year limited warranty. By setting adjustable run time and time between run stages, your curtains will open or close in the number of stages you desire. Should temperature rise or fall below your set points, the VCU will bypass stages and either fully open or close as needed. Advancing Alternatives. (570) 739-1034.

Greenhouse film

F-Clean greenhouse film is a top-quality covering material that features the most advanced flouropolymer technology. Benefits include improved plant yield, shorter growing cycles, strong and healthy crops, and lower operation costs. F-Clean also features high light transmission (over 90 percent), extreme strength, a long life span (over 10 years), UV transparency, easy cleaning and an anti-drop effect. AGA Chemicals. (704) 329-7614.

Truss house

The "Solar Light" is a clear-span truss house with built-in condensate controls that channel ceiling drips away from plants. The high pitch roof provides excellent air circulation and maximizes winter sunlight leaving ample room for energy curtain systems, lighting, heating, vent equipment and transportation systems. The re-engineered column connectors give added strength and flexibility to meet building codes all over the country. Available in 50-, 42-, 36-, 30-, 24- and 18-feet stock widths with standard eave heights of 8, 10 and 12 feet. Agra Tech. (925) 432-3399.

Greenhouse films

A new addition of greenhouse films will provide growers with solutions to light-management concerns. Through utilization of modern equipment and manufacturing techniques, they are able to offer Agro Dynamic's films incorporate metallocenes, ethylene vinyl acetate (EVA), UV stabilizers, anti-dust, anti-fog (anti-condensate or anti-drip) or diffusing additives, as well as films that keep the wind and rain away. Agro Dynamics. (800) 872-2476.

Teaching greenhouse

The "Educator" is designed especially for high school- and college-level horticulture classes. It is 28 feet wide, comes in various lengths and includes temperature control, benching, irrigation, a 4-foot-wide sliding door, hanging basket rails and 8-mm polycarbonate structured sheet covering that resists hail and student abuse. Atlas Greenhouse Systems. (800) 346-9902.