

Innovations put green in greenhouse

By David Mitchell
Special to The Packer

Village Farms International's fifth Texas greenhouse won't be just like the others.

The Delta, British Columbia-based company broke ground in June on a 30-acre greenhouse in which it is implementing green innovations intended to save energy and increase yield.

The new greenhouse, in Monahans, Texas, is the first phase of Village Farms' planned 120-acre operation.

Marketing manager Helen Aquino said that 40% of the new greenhouse's energy needs would be generated by wind power.

"It's underutilized," she said. "We're very happy to tap into that resource. It's one of the reasons we chose that location."

Wind power not only is considered clean energy, but it also costs less than some other forms of electricity. Village Farms will take advantage of the savings by implementing supplemental lighting in one of its greenhouses for the first time.

Aquino said the lighting would result in tomatoes growing faster, a shorter turnaround time in growing operations and higher overall yield.

While supplemental lighting may not sound green, it will reduce the amount of natural gas required for heating, said Paul Selina, vice president of applied research.

It also will increase winter volumes, which in turn will reduce the amount of product the company needs to transport into the region from other growing areas.

Meeting local and regional demand is a key factor in the project, Aquino said.

The greenhouse will allow the company to reduce transportation in its attempts to meet growing customer demand in Texas, New Mexico, Arizona and Oklahoma.

The greenhouse also will benefit from diffused roof glass, which Selina said will spread sunshine deep into the crop canopy, increasing transpiration and cooling and reducing ventilation requirements.

Selina said that the supplemental lighting and diffused glass combined should add 25% to annual production volumes.

"The biggest increases will be in the winter months," said Selina, who added that the innovations should result in more uniform weekly production and better size and quality.

Selina said the facility's biggest energy savings would come from thermal screens that can be closed above the crop whenever heating is required.

Screens must be left open in most greenhouses to ventilate out



Courtesy Village Farms International

Village Farms International, Delta, British Columbia, is building its fifth Texas greenhouse. Unlike the others, including the one pictured above, the new greenhouse will include innovations designed to save energy and increase winter volumes.

humidity, but the Monahans greenhouse has ventilation patterns that allow the screens to be closed all the time.

Village Farms also will recycle water in the hydroponic greenhouse up to five times, using 86% less water than typical field growing operations, Aquino said. After that, the water will be reused to irrigate an adjacent golf course.