Hillside Gardens: a Holland Marsh Vegetable Grower & Processor

Increased production demands and limitations on their fresh water supply helped spur Adrian Dieleman and Tim van der Kooi – of Hillside Gardens Ltd. – a Bradford-area root vegetable farm and processer – to find ways of using their most important liquid asset in a more sustainable way.

Hillside Gardens has been producing root vegetables such as turnips, beets, carrots, and onions in Ontario's Holland Marsh for four generations. As maintenance managers at the farm, Adrian and Tim wanted to investigate how water conservation could lower both operational and environmental costs.

Fresh water used in the vegetable rinsing process in particular, says Adrian, was pretty significant.

"We found out that we were using way more water than we had originally thought. It was much more than it needed to be," he says.

Adrian and Tim have been working for over a year to find ways of reducing their water use. Thanks to assessments conducted by the Farm & Food Care Ontario's Water Smart program funded by OMAFRA and by working with the Holland Marsh Growers Association on their Waste Water Treatment Pilot Program, they were able to better understand which steps in the process used the most water. By assessing where fresh water is required and in what quantity – as well as maintaining a high level of product cleanliness – the managers have found a number of ways to reduce water use and treatment costs.

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More recycling, turning off unnecessary equipment, using turbidity sensors to manage soak tank water use based on dirt load rather than timed dumping, and measuring and limiting the amount of water used by equipment have already contributed to a well water savings of more than 50 per cent. Where once 3 pumps, (7hp, 5hp and 2hp), cycled on and off to meet the demand, now only the 5hp and 2hp pumps on variable speed controllers are able to handle the scaled back requirements for fresh water. This change saves money and reduces the farm's environmental footprint.

Having already made significant reductions in water usage, Adrian and Tim have even more ambitious plans to change the vegetable flow processes. They are exploring a dry tipping system that will move product directly into the washers, eliminating or by-passing the pre-soak tanks depending on whether the vegetables are in pallets bins or from bulk storage.

Currently, the receiving pit must be filled with fresh water each morning; moving to a smaller receiving tank would save considerable water each day," says Adrian.

"Proposed changes to the process flow would have a multi-year return on investment based solely on the electricity and water savings, but when taking into consideration reductions in water treatment costs and improved process flow of product, we hope to justify additional improvements to our system's design."

With energy consumption under better control, Adrian and Tim are now looking for the right water recirculation system to incorporate into the farm's processing plant. And, because steps have already been taken to reduce the amount of water going through the wash systems, there's already less water requiring treatment. Naturally, costs associated with recirculating water and treating water will also be lower because of water use reductions in the plant.

"As we have spent time assessing our water use and looking to reduce water use, we can see benefits at every level as we go through the system," says Adrian.

Farm & Food Care Ontario's Water Smart program is designed to help growers better understand how and where they use water. By having better information, growers are often able to reduce their water use, cut costs and generally find lower cost treatment systems. For more information visit www.FarmFoodCareON.org

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