How AI makes greenhouse farming more efficient and cost-effective

Recently, 30 Canadian companies received an award for their innovative technology projects. One of the recipients is greenhouse grower Nature Fresh Farms®. While the awards have been around for a few years, it's the first time Nature Fresh Farms submitted a project. "Our innovation is centered around using AI to farm in a more efficient and cost-effective way," says Keith Bradley, VP of Information Technology at Nature Fresh Farms.

"We've partnered with Intel and with the help of their system, we've been able to connect farming and AI, significantly improving productivity in our greenhouses," Bradley shared.

The team at Nature Fresh Farms built the software system and by connecting it with Intel's OPENVino™ platform, it has allowed for building a training model that has the ability to make necessary farming decisions.

Reduction of water and energy use
For instance, the system was trained to optimize the opening and closing of vents in the greenhouse. "In the past, a sensor would detect the rain, which resulted in closing of the vents. With the help of AI, we are now able to look at the weather forecast and know what type of weather is coming. Vents open and close automatically based on the forecast and we keep the rain out completely."

In addition, using AI, many processes have also been automated, including irrigation patterns which have been optimized, meaning growers no longer need to be involved at all times when it's time for plants to receive water and knowing when to start warming up the water to heat the greenhouse.

These examples have resulted in less water being used to irrigate as well as a reduction in energy to heat. "We see a reduction in the resources we use, resulting in lower input costs," commented Bradley.

More free time for growers

With the help of Intel's AI platform, a pro-active greenhouse was designed. Instead of being reactive, the system has become more predictive, allowing the growers to spend less time managing the greenhouse from their pc's. "The biggest measurable difference for us is that our growers have more time to be out in the greenhouse to look at the crop instead of managing it from behind a screen. They are certainly enjoying their freedom," Bradley mentioned.

Self-learning system

In case settings need to be adjusted, growers have the ability to overwrite the system. Since it is a self-learning system, AI remembers the changes and will perform correctly the next time. The AI system has specifically been applied to Nature Fresh Farms' greenhouse in Leamington, but also works at the company's Delta, OH location.

"We are always striving to grow a better product and ultimately, this innovation will allow us to bring a better product to market," Bradley finished. A system like this is very accessible as it could be applied to both small and big farms. "You don't need to be a multi-million dollar operation or have a huge budget to start."

For more information:
Krysta Markham, **Nature Fresh Farms**
Tel.: (+1) 519-326-1111
Krysta.markham@naturefresh.ca
www.naturefresh.ca

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Author: Marieke Hemmes