



GREENHOUSE WATER FILTRATION SYSTEM REDUCES ENVIRONMENTAL FOOTPRINT

New water filtration technology is cutting water use and reducing the potential environmental impact of Ontario greenhouses. Great Northern Hydroponics, a greenhouse tomato grower in the Leamington area, has installed a new ion filtration system to better reuse and re-circulate water in their production facility.

“In Ontario, greenhouse vegetables are grown hydroponically, which means without the use of soil, and get their nourishment from a nutrient solution,” explains Leanne Wilson, Science Coordinator with the Ontario Greenhouse Vegetable Growers (OGVG). “This new system allows a grower to filter the water so it can be re-used repeatedly in the greenhouse, cutting down on water and fertilizer use.”

How is the research being conducted?

With the help of the Farm Innovation Program (FIP), Great Northern Hydroponics initially installed a small-scale system suitable for five to 10 acres of production, sourced from a local company that supplies similar equipment to the dairy industry. A larger unit for 15 acres was subsequently installed. Both systems were tested for their capability to extract sodium, sulphates and chlorides from the solution using semi-permeable membranes to make it suitable for recirculation.

What is the research showing?

“This system is really good at extracting the components from the solution that we wanted,” says Guido van het Hof of Great Northern Hydroponics. “And we discovered that the filtration is so good that it also filters out plant pathogens, bacteria, viruses and fungi. We currently disinfect all of our water through pasteurization but this will no longer be necessary with this new system.”

What impact could this technology have on Ontario’s greenhouse vegetable sector?

For Great Northern Hydroponics, the overall impact has been very positive. Van het Hof’s goal is to make the system a complete closed loop, meaning all water and nutrients would be recycled. He currently spends \$75 – 100 per day to run his water pasteurization system, which he would no longer need to keep pathogens at bay. If the system continues to perform as it has to date, van het Hof says he is prepared to make the investment to expand it to his entire 70-acre production area.

“This technology has the potential to be really beneficial to all greenhouse vegetable growers by reducing water use and fertilizer costs, as well as shrinking the environmental footprint of greenhouse vegetable production,” says Wilson.

Where can I get more information?

Information is available from OGVG at www.ontariogreenhouse.com.



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