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February 23, 2017

# Nova Scotia food-growing startups benefit from their seaside locale

By Denise Deveau

## In addition, "the research cluster here is wonderful - the NRC, local universities and colleges ..."

Entrepreneur Gregg Curwin says his light-bulb moment came during a trip to Japan six years ago. The choice of words is fitting, given that he was visiting an indoor vertical farming operation where lighting figures prominently.

He later brought that technology to Nova Scotia to found TruLeaf – touted as one of the first vertical farming operations in North America. Vertical farming is a collection of technologies around LED lighting, hydroponics, seed science and controlled environments, he says. "It's quite new to North America. I saw it as a wonderful tool to address the massive problem of chronic disease, through whole plant nutrition."

For now the focus at the Truro facility is on micro greens and herbs, but as R&D work continues, he plans to apply it to crops such as strawberries, mushrooms, tomatoes and cucumbers.

Curwin is one of a successful group of Nova Scotia entrepreneurs who are considered world leaders in sustainable farming innovation – from micro greens to salmon to seaweed.

"People think Nova Scotia doesn't have the groundwork for great entrepreneurial innovation," Curwin says. "We have some focus on IT and software like every jurisdiction in North America. But with the ocean and the Bay of Fundy and the academic research, entrepreneurs have a wonderful playground to build a sustainable food-growing hub for biomass, plants and proteins. We can be a global player, because we have all we need here."

*Entrepreneurs have a wonderful playground in  
Nova Scotia to build a sustainable food-growing hub*

His timing was perfect as vertical farming has exploded in recent years, he says. TruLeaf already has Loblaw as an early adopter, and is opening an additional facility in Guelph in the fall that is quintuple the size of its

original plant in Truro. It is also looking at a larger facility in Eastern Canada, and possibly building three more in Ontario, Quebec and Western Canada.

Canada isn't the only potential market. Curwin says every week groups from around the world contact him about licensing the technology. "Our uniqueness is around the design of the building environments, our plants and our safety practices. It's great because these farms can be placed anywhere, such as places of need like the Arctic. I can see greenhouse producers converting defunct warehouse space for high-yield production. We're super excited, but also super disciplined in making sure we go about this properly."

Another innovator on the Nova Scotia entrepreneurial scene is Sustainable Blue Salmon. The Dartmouth-based company is perfecting a unique salt-water recirculation technology that allows farm salmon to be raised in land pens. CEO Kirk Havercroft says the technology was originally developed in Scotland by company president Dr. Jeremy Lee for use in public aquariums.

In 2005 they switched to aquaculture. "That's always where we intended to end up," Havercroft says. "A geographical study pointed us in the direction of Nova Scotia as the ideal place to build an aquaculture company."



Sustainable Blue Salmon One of the salmon holding tanks at the Sustainable Blue facility in Dartmouth.

The concept is a timely one given the well-publicized issues around fish farming operations. In conventional fish farms, fish are grown in cages in open waters which is causing a raft of environmental and ecological problems, from transfer of parasites and bacterial outbreaks to fecal matter damaging sea beds, water temperature fluctuations and oil spills. Cage farming

has also been linked to the drastic reduction in wild salmon stocks.

A closed system allows near-complete protection from all those risks, Havercroft says. "You can never take the risk down to zero, but we can take it as far as we can."

The process has tremendous market potential because it can be used in places where salmon is not traditionally found, he says. "Go to the Middle East and there is no possible way to grow salmon in cages. With our

technology, organizations can grow a premium Atlantic salmon on their own doorstep to serve a high-value market."

Havercroft says now the technology is proven, it plans to expand its existing capacity in Centre Burlington; as well as license the technology worldwide for investors who want to get into farming salmon.

"Developing a proprietary technology gives us a unique advantage globally," he claims. "But the heart of our technology will always be here. We've had tremendous success in raising investment capital so operating from a tiny village has not been a disadvantage at all."

Nova Scotia innovation isn't just found in the new businesses on the block. One of the original entrepreneurs on the aquaculture scene is Acadian Seaplants, also based in Dartmouth. It has been innovating in its space since it was founded in 1981, and now has 350 employees in 11 countries around the world, says Jean-Paul Deveau, president and CEO.

The company started with one customer and one product – dried, baled seaweed. "We knew if we wanted to grow and prosper, commodity supply would be a road to disaster if we didn't diversify," he says.

Much of its development work on seaweed cultivation was done with the support of the National Research Council, which had the technology to make extracts from seaweed to help grow crops. This led to the development of animal feed products. Further research went into products to support crop growth. "Now we are the world leading resource on the use of seaweed extracts for agriculture," Deveau claims.



The company is also home to the largest land-based seaweed cultivation farm. Those products are sold to the Japanese market for use in seaweed salads.

Deveau credits its ongoing success to the province's strong R&D ecosystem. "The research cluster here is wonderful. The NRC, local

Acadian Seaplants Acadian Seaplants' Jean-Paul Deveau universities and colleges – we partner with all of them. Through R&D we will continue to diversify that so we can stay ahead of the world."

Deveau has always believed that Nova Scotia has a tremendous number of advantages for a creative-minded business owner. "We have local resources, a great community, a tremendous academic base, a strong talent pool, and a government that is great to work with. And we have the ocean. It's an environment that offers tremendous economic potential."

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