



The largest apple producer in Canada is in Newcastle and it's more high-tech than you'd think

By Jennifer Foden

Agriculture is one of the top economic drivers in [Durham Region](#), thanks to over 1,200 working farms and close to 265,000 acres of farmland. And one of them, [Algoma Orchards](#), in Newcastle, is an important part of that fabric. The farm, which is celebrating its 60th anniversary this year, has 1,600 acres of land, plus another 1,500 acres with grower partners in the area, and is the largest apple producer in Canada, growing and packing well over nine million pounds annually.

And while some of Algoma's business remains very old-school (the president Kirk Kemp makes most business deals with partner growers with a handshake), much of their approach to growing, packaging and selling apples is about embracing technology. "With our main varieties—Gala, Ambrosia, Honeycrisp and Fuji—we're [growing and selling] 11 or 12 months of the year, which is very, very unique," says Eric Biddiscombe, director of sales and business development at Algoma. "There's a bit of technology around that, which allows us to do that." Much of this tech is centred around [environmental sustainability](#) and protecting the apple trees.

Firstly, there's the 250,000-square-foot building itself. The roof is lined with solar panels; and Biddiscombe says back in 2009, when the company installed them, they had the largest solar roof in Ontario and it was "very forward-thinking." Also, Algoma recently became the first plant in Canada to be powered entirely by Tesla. Plus, the facility has rainwater collection and treatment right on-site, too. "We're on well water," says Biddiscombe. "Of course, it's a great sustainability story, but we have to be frugal at the end of the day, so it's a real win-win."

And then there's the trees. Algoma uses a GPS-guided tractor to improve planting efficiency; it can put up to 20,000 trees in the ground in one week, which are perfectly straight and have maximum exposure to sun and spraying. Also, they have 84 smartphone-controlled frost fans as trees are "really susceptible to frost," according to Biddiscombe.

What might be the most impressive is the way in which Algoma's apples are sorted. Twenty years ago, apples were sorted by hand. Today, they are rinsed in a moving pre-sorting machine and then software sorts them by size, colour and whether there are any defects. "The pre-sorter takes 60 pictures of each apple," says Biddiscombe. "The first unit is highlighting fruit quality. The second unit has an infrared signal shooting through the apple to see if there's any internal browning. This time of year, it's usually not an issue. But when you take it out of controlled-atmosphere storage after six, seven, eight months, sometimes you'll see some internal



browning. Then, we put them back into bins based on the specs. And we put them into short-term storage waiting for orders.”

Algoma also uses technology that analyzes the crops in the field. “Do you know what’s interesting?” says Biddiscombe. “Kirk can take his pickup truck and do the same thing and tell you what’s going to come out of the trees as fast as the AI-powered Vivid Machines and in some cases more efficiently. But there’s only one Kirk. And technology is really replacing that deep knowledge and allows us to go on for the next generation after that.”

All this technology hasn’t eliminated jobs; rather, it’s created more as the company can now take on more work as they can grow, harvest and sort more efficiently. Biddiscombe shares: “I’m looking forward to seeing what Algoma looks like in about five or 10 years.”

This is part of a 10-article series profiling the innovation happening in Durham Region. The region has been recognized as one of the top seven Intelligent Communities in the world for the third year in a row. Learn more at durham.ca/IntelligentCommunities and IntelligentCommunity.org.

