

Solving the landfill question for greenhouse growers

By Luke Edwards

The days of trucking every scrap of greenhouse waste to the landfill is coming to an end, and that end is a lot sooner than many people realize.

As landfill space in Ontario fills up, industries such as greenhouses are going to have to find alternatives. Participants in one of the sessions at the Canadian Greenhouse Conference, held last month in Niagara Falls, learned of both the challenges and opportunities operators face amid dwindling landfill space.

“There’s certainly an urgency to finding alternatives to landfills,” said Alexandra Grygorczyk, a research scientist at Vineland Research and Innovation Centre.

Despite that urgency, Grygorczyk said there are opportunities. Leamington’s greenhouse sector currently landfills about 150,000 tonnes of fruit grade-outs, vines and growing media each year.

Her presentation highlighted some of those alternatives, moving along a hierarchy from most to least preferable.

At the top of the list are prevention measures that reduce the amount of waste produced

in the first place and finding other options to use the produce that is safe for human consumption. Grygorczyk said this is already being done in other sectors, such as with apples where lower graded fruit is processed for other purposes. It’s a practice greenhouses could emulate. For instance, cucumber juice has value in the cosmetics industry, she said.

The latest innovation report from VRIC also outlined work that’s ongoing to find an alternative use for the juice produced during the process to freeze corn. The pressed cobs are used for animal feed, but the juices are a challenge for conventional wastewater systems and end up mostly being trucked away for irrigation. The hope is that new uses can be found.

Similar research is going into using byproducts from onion processing as clean label antimicrobials.

Back in the greenhouse, other lower graded produce can also be used for various purposes. In these cases, Grygorczyk suggested looking to smaller companies who are finding creative ways to use these products.

There is some fear in the industry that using lower graded pro-



Alexandra Grygorczyk, a research scientist at Vineland Research and Innovation Centre, said alternatives to landfilling greenhouse waste are becoming more needed. Fortunately, researchers are working on solutions. ~ VRIC photo

duce will de-value the top quality fruit, however, Grygorczyk said that’s not the case, pointing to the success of the apple industry in following this practice.

“That should not be a concern for the greenhouse industry,” she said.

For its part, Vineland Research and Innovation Centre recently added food grade laboratory facilities to its infrastructure, giving researchers like Grygorczyk added space to come up with other upcycling solutions.

When that fails, food donation can become an option. Second Harvest is a logistics company that provides support for food producers, organizing donations to ensure they get to charities that can use them.

Additionally, said there are Good Samaritan laws in Ontario that protect growers who make these kinds of donations. Growers that donate can receive a tax credit that’s equal to 25 per cent of fair market value.

When human consumption isn’t possible, it’s time to turn to animals and machines, Grygorczyk said. These options include using the waste as animal feed, composting it, or using it in bio-material/bio-chemical processing or in anaerobic digestion.

The session also featured a presentation from Tamara Lockwood-Ortiz of Bugs4Rent and A Zero-Waste Future. She told the audience of a project her business is undertaking to provide an on-site biodigester that is “harnessing Mother Nature’s composter.”

Modular units can be placed on a property and the larvae of black soldier flies can reduce waste products to frass, which can then be used for other beneficial purposes. Lockwood-Ortiz said they’re trying to show growers how doable this process is, so they can scale up to help meet the industry’s waste challenges.

At the bottom of the hierarchy is landfilling and discarding. Grygorczyk pointed out that even unmanaged “compost piles” fall into this category, since it leads to anaerobic decomposition, which in turn produces significant greenhouse gasses.

And even if it remains the easiest and most efficient option for many growers, she said increasing tipping fees and the fact it’s nearly impossible to get new landfill space approved in Ontario means it’s an option with a short shelf life.

“Soon enough you’re not going to have a choice,” she said. 🌱

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