

“What once was the domain of the farmer’s field and the flower pot now turns on the lights.”



The Green Energy Vortex

The evolution of organic waste processing

I was recently had the opportunity to speak about the evolution of organic waste processing in Ontario at the Canadian Waste Sector Symposium — “Waste to Resource” organized by the Ontario Waste Management Association (OWMA), in Toronto, Ontario. (*Visit www.owma.org/db/db2file.asp?fileid=857*)

With such a broad topic I took some licence and spent time researching organic waste processing through the ages.

The processing of organic waste is probably as old as the world’s oldest profession.

All the good things in the world happen by accident. This includes manipulating microorganisms to process organic feedstocks into various products (think of baking, brewing and cheese-making) and then dealing with waste products (think manure and leftover vegetable matter in the same way). Old-school waste management would have dictated some sort of aboveground pile of organic waste and nature, as it always does, would have taken its course.

A waste audit in ancient times would have discovered mostly food waste and early clay-based packaging materials.

The piles would have just sat there and probably would have been a bit stinky. But funny things happened. The pile generated heat and attracted flies. More importantly, the pile got smaller and (surprise surprise) applying it to crops helped them grow better.

There is a limited written and visual history of organic waste management. The great halls of art and literature are not overflowing with its history. The Bible mentions composting in passing. Cato the Elder wrote an apparently rambling but well received handbook on farming in the late BCs that made mention of composting and then, for the next 1,900 years, silence. Farming took place and the management of organic waste was a foregone conclusion that did not require a lot of discussion.

The industrial revolution started (and continues) to change all that. It allowed people to move very far away from their nomadic hunter gatherer days for sure but, even more importantly, removed the final underpinnings of agrarian society.

That has led us to where we are today: completely removed from our agricultural roots; we’re completely removed from “consumption to sustain sustenance” and now consume for consumption’s sake. We’re living in different ways and generating wastes that need to be managed.

In nature, organic waste that’s above ground composts; when it’s below ground (think: swamp) it digests anaerobically (without oxygen).

For centuries the *de facto* management technique for organic waste management (other than ignoring it and putting it into landfill) has been composting, even if it wasn’t called that for a long time. This ultimately evolved into the composting industry we have today. Composting in relative terms is easy and very accessible.

Plants and animals, that one day become organic wastes, sequester the sun’s energy and nutrients.

When we compost them, we use some of this heat to generate high temperatures which in turn inactivate pathogens. (Otherwise the energy and its heat drift off as steam into the environment.)

What we call green energy today is really just a mindset.

Old-school green energy like hydroelectric energy is now joined on an increasingly crowded stage by new players like solar and wind. It’s not that any of the technologies are new: What’s new is the government’s willingness to subsidize these technologies to develop green energy.

While organic wastes are pretty small beer when looking at the potential of something like wind energy, they’re being sucked into the

green energy vortex. Anaerobic digestion and other energy gathering technologies are also nothing new; we’re seeing the culmination of a slow moving trajectory toward the final economic piece to make certain technologies viable.

How does this fit into our current organic waste processing industry, that’s largely composting? There may very well be some competition for feedstocks that are being composted. However, there are also opportunities to manage organic wastes that would normally never see a composting tunnel.

I almost choked on my breakfast cereal when I saw what it’s going to cost to facilitate the development of more green energy in Ontario. It’s staggering, with an 80 per cent increase in energy costs projected. It wasn’t a new number but seeing it again made me wonder. It will be interesting to see how green energy fares when the government money stops flowing. Projects follow money and for the time being the production of green energy is where I believe organic waste is headed.

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