

# McGill - Bees Ferry Compost Facility

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# Compost: Public vs Private

- ▶ Many public sector facilities are challenged with producing an abundance of premium products.
- ▶ The major benefit to private sector production, is the financial incentive to produce the highest quality product. Their survival depends on it.
- ▶ Communities benefit when composters have a vested interest in the quality and the quantity of their compost.
- ▶ Profitability is essential to the industry, if we want to have more composting facilities.

# It Has To Make Cents

- ▶ This discussion is focused on the feasibility of integrating bio-plastics and similar post-consumer compostables into industrial composting.
- ▶ In theory, they're all just compostables, but in practice, green waste and bio-plastics have very different characteristics.
- ▶ There are efficiency issues & challenges to quality control when adding an array of post-consumer products to green waste composting.
- ▶ It's a challenge to recoup costs from a bio-plastics. After biodegradation, there is very little marketable product, by weight or volume.

# Risk, with limited financial upside



- ▶ Composers have exposure to additional risk, when accepting compostables:
  - Identifiable containments in finished product
  - Increased labor costs (manual labor)
- ▶ As the utilization of bio-plastic increases, we're seeing a reversal of a 95% mechanized process.
- ▶ Example: An Easter egg hunt vs. needle in a haystack
- ▶ The ramifications of a contaminated finished product (particles of partially degraded bio-plastics, PET's or glass) are lost income & lost business (customers)
- ▶ Not every operation can/will take that risk, on their one & only product



# Inescapable Realities

- ▶ Composting is a high volume, low profit margin business, that is reliant on keeping labor costs low.
- ▶ In order to expand our operations, we must be as profitable as possible.
- ▶ It has proven expensive and time consuming, to process the growing volume of post consumer products.
- ▶ Customers are hard to get and easy to lose. Consistently producing a clean looking product, is increasing in difficulty.
- ▶ There's a limit to how much bio-plastic & post-consumer products an operation can take, in an agricultural setting.



# Implications - Facility Design

- ▶ Most of our facilities were set up and designed for processing vegetative material.
- ▶ Light weight bio-plastics & organic waste, have completely different characteristics
- ▶ With future mandates a possibility, facilities must prepare to process >2000% more bio-plastics.
- ▶ From an engineering and design standpoint, a different type of facility is needed to regain efficiency (mechanical sorting in an industrial setting).
- ▶ Without subsidies, will smaller operators be able to make that investment and assume significant risk, for a final product that biodegrades into mostly gas and water?



# Business Plan - Forecasting

- ▶ We must look 2-5 years ahead, and make a plan, or make a policy decision, regarding the integration of post-consumer products in our compost.
- ▶ Adding post-consumer products into the pipeline has already been a big change to the business (bio-plastics - 1% of plastic mfd., & > ½ % is recycled).
- ▶ Labor costs aside, high volume bio-plastic processing has challenges, in an agricultural compost facility.
- ▶ Many composters are finding that the added costs can't be passed on to the customer, therefore, it's not feasible to deviate from organic & green waste.

**No more greasy  
pizza boxes, paper  
towels or takeout  
containers in Front  
Range compost bins  
come April 1**



# Case Study: Boulder, CO

- ▶ The compost facility had to send 30 full-size trucks to the landfill monthly, due to contamination.
- ▶ It's back to basics - only accepting yard waste, food waste, and certain compostable bags.
- ▶ The 6+ month breakdown rate of some bio-plastics, resulted in small pieces making it through screening, thus ruining their high-end product.
- ▶ In addition, glass fragments were being found in their finished products.
- ▶ Conclusion - High-end, clean compost generates profits; its what customers want. Low-end or roadside compost doesn't pay the bills.

# The future is Bright

- ▶ Big Plastic continues to pour billions into R&D
- ▶ Bio-plastics that breakdown in 1-2 months may make commercial composting more viable.
- ▶ Game changer? Scientists in the U.S. have developed plastics with polyester enzymes embedded that are simply activated by hot water.
- ▶ A team in the UK discovered a way to quickly break down certain plastics under high powered UV lighting.
- ▶ The plastic with the widest array of uses and the quickest transition to an inert state, will win.
- ▶ Breakthroughs right now, will have the biggest impact on what our facilities will look like, 5 years from now.



# “The Endgame”

- ▶ Currently, we are doing our part, to help keep plastics out of landfills, natural habitats, and bodies of water.
- ▶ The reality is, science has already moved beyond composting bio-plastics with green waste...it's just not marketable yet.
- ▶ Plastic, in 3-stages process:
  1. Invention...a great one, but did it really need to be durable for 1,000 years?
  2. Development of environmentally friendly materials that biodegrade in < 1 yr.
  3. Perfecting plastics that make a near-instant transition at the time of disposal.
- ▶ Composting has been a responsible, intermediary step, but it's not a panacea.
- ▶ What's on the horizon, closes the gap between a consumer's use and the return to nature....in an inert state!

Germantown, Wis. – March 14, 2023 – WM today announced plans to invest \$38 million in state-of-the-art recycling technology at the company's recycling facility in Germantown, Wisconsin, which is one of the largest recycling processing facilities in the state. The project is expected to enable WM to process recyclables more efficiently and produce a higher quality product for manufacturers that use recovered material as feedstock.



