Zero Waste: Organics Recycling Best Practices

Compost Matters 2015
Compost Council of Canada Workshop

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Objectives:

- Importance of organic waste recycling in Zero Waste Initiatives.

- Role of Certified Compostable Bags & Products to increase organics diversion from landfill and improve compost quality by reducing contamination.
When discussing compostable products, emphasis will be focused on:

“CERTIFIED COMPOSTABLE”

CAN/BNQ 0017-088
Certified compostable products:

- Comply to Canadian BNQ (CAN/BNQ 0017-088) and ASTM 6400 Specifications for Certified Compostable Bags and Products
- Biodegrade in aerobic composting process
- Do not disturb high solids anaerobic digestion process
- Biodegrade at the digestate composting stage after AD
Fundamental Truth; More consumption, only one planet

Sustainable practices are becoming more important
Overview of Organics Waste In Canada

If you were to start from scratch and wanted to get to Zero Waste to Landfill initiative the fastest .... which one would you choose to concentrate on first?

- Organics over 1/3 of the waste stream

Challenges:

- Overall waste management priorities
- Collection
- Processing
- Compost Quality & Markets
- Communication & Education (C&E)
Today’s Reality in Waste Management

Make the System

“Convenient & Pleasant”

to enhance participation
Organics Diversion Benefits

Waste is produced every day

- Up to 60% of waste material generated is compostable
- Diversion saves decreasing landfill space
- Landfills release methane into the atmosphere which has a greater short-term environmental impact than carbon dioxide.
- More compostable products are entering the market

Our Soils benefit from the ongoing addition of COMPOST:

- Increased Soil Carbon Storage
- Decreased Water Use
- Decreased Soil Erosion
- Reduced Fertilizer Use
- Reduced Herbicide Use
Composting = Organics Recycling

Certified Compostable products

Licensed Composter
www.findacomposter.com

Microorganisms Eat Organic Material

Managed, Controlled

Foods, plants grown efficiently

Compost Added to Soil at Farms, Horticultural business

Pathogen-free Compost
Known Advantages to Composting & Increased Organic Diversion from Landfill

- Diminished landfill capacities, closed landfills, and the extreme cost and resistant response to building new landfills creates a need for waste diversion.

- Removing organic material from going to landfill reduces the waste input to landfills by almost half.

- Certified compostable bags help separate and consolidate material, keeping organics out of landfill without producing alternate landfill wastes.

- Introducing certified compostable bags eliminates more landfill waste over time by reducing the amount of organics and conventional plastic bags soiled with organics into landfill.
Value Drivers for Sustainability

- Improved Environmental Conditions
- Beneficial to society; reduced Risks to Humans and Wildlife
- Economically viable; improved Resource Management & cost reduction
Reduced Health and Environmental Risks

- Reduced Landfill Gas Emissions
- Organic material in landfills produce harmful liquid by-products as they decompose, these can come out as leachate
- Proper composting kills many harmful pathogens through its natural heating process making the material safer for the environment
- When landfill diversion is done and service life is extended, the health risks associated with building or expanding landfills is decreased

Composting Produces Cost Savings

- Trend towards lower tipping fees for compost compared to landfill
- Creates a valuable product, Compost.
- Reduced cost in fewer landfill openings and expansions over time
Eco-Efficiency Analysis
Evaluates both environmental impacts and total cost

Results of Eco-Efficiency Analysis showed that diversion of organic waste from landfills to composting results in lower environmental impacts and has better total economic value.
Source Separated Collection of Food Waste Makes Sense

Greenhouse gas emissions in CO₂ equivalents from 1kg organic kitchen waste [grams]

- Landfill: 2366 - 2892
- Incineration: 1694 - 2070
- Composting: 390 - 477

Organic kitchen waste

Assumptions:
- Energy recovery by incineration of the PE bag is included but of no relevance. In the composting scenario, it is assumed that fertilizers are substituted.

Results range: 10% uncertainty
Known Advantages to Composting

- Send less to landfill.
- Reduce greenhouse gases.
- Recover valuable materials.
- Decrease soil erosion.
- Revitalize soil.
- Reduce the water use.
- Reduce the need for pesticides.
- Compost provides essential organic matter for the soil.
- Make a positive environmental difference.

- Helps municipalities meet diversion goals
Organics recycling through composting is essential to zero waste initiatives

- One of the focuses of zero waste is composting, an essential part of diversion for organics and compostable products

- Zero waste initiatives are emerging all over the world in an effort to reduce the amount of waste going to landfill

- Certified Compostable products are valuable to organics recycling programs as they act as carrying media for organic waste, and make the collection easier, cleaner, safer.

- BASF’s innovative technologies enable diverse certified compostable products
Commercial Applications for Certified Compostable Products

- Organics Waste Can Liners
- 2 in 1 shopping bags
- Paper Coating
- Mulch Film
- Netting
- Food Packaging
Benefits of Certified Compostable Bags

- Translucent to view contents
- Bag breathes, allows oxygen (O₂) in and permits water vapor to leave the bag reducing moisture content up to 25% - 50% in five days - reducing odorous anaerobic conditions
- Weather resistant
- Hygienic, safer (less direct contact with employees), and collection efficient
- Recognized with CAN/BNQ & BPI “Mark of Certification” at curb/in the bin from other plastic bags
- Can be treated the same as organic contents for efficiency in feedstock preparation
- Biodegrade in aerobic composting process
- Do not disturb high solids anaerobic digestion process
- Biodegrade at the digestate composting stage in AD
- Help reduce plastic contamination in compost
Waste hierarchy applied to organic-waste

CLOSED-LOOP SYSTEM

OPEN-LOOP SYSTEM

Closed-loop System = Chemistry of Molecules + Chemistry of Value Chain
Seattle Mariners and Safeco Field USA. The Mariners…

- are the leaders when it comes to sorting and collecting organic waste in the Major League Baseball (MLB)
- have the fifth-largest fan base in the MLB since 2000
- are fully committed on management level to sorting and disposing waste sustainably
- During 2012, due to recycling and composting, the Mariners diverted two million pounds of waste from the landfill, saving $128,000 in waste disposal costs.

BASF SUPPORTS THE "MARINERS ZERO WASTE" PROGRAM WITH certified compostable bags IN THE STADIUM
Adelaide Oval Australia. Adelaide sports ground...

- March 2012
- Food scraps and organic waste from on-site food preparation and catering areas at the Adelaide Oval collected with certified compostable bags made with ecovio®
- Bags with organic waste delivered to industrial composting site

CLOSED LOOP PROJECT DEMONSTRATES EASINESS OF INTRODUCING A ZERO WASTE MANAGEMENT PROGRAM
Eurospeedway Greener Lausitzring…
Germany

- Motorsport Circuit in Eastern Germany
- Fits into concept of Green Lausitzring
- Target to **improve soil quality** in former mining region Lausitzring ("From Lausitzring for Lausitzring")
- Continuous project since 2012
- Organic waste diversion from incineration

**SUSTAINABILITY AWARD FROM MAGAZINE BUSPLANER 2013 & DMSB AUTOMOTIVE SPORT 2012**

**USE OF CERTIFIED COMPOSTABLE BAGS AND FOOD SERVICE ITEMS WERE KEY ELEMENTS OF SUCCESS**
Best practice for food waste collection is use of certified compostable bags

- **Cleaner** – Bin stays cleaner and no leaking of waste water.

- **Easier** – Use less water and detergent, no frequent bin washing = more sustainable.

- **Safer** – less direct contact with employees, customers and residents reduce chance for transmitting food borne illness (mold) and reducing vermin infestation.

- **Less odors**. Bags let oxygen in and moisture out. Drier, lowest odor food waste. Easy handling of waste.
Summary:

- Organic waste to landfill is not a sustainable waste management practice.
- Organics recycling makes environmental, social and economic sense.
- Certified Compostable products play an integral role in organics recycling success.
- Life Cycle analysis shows composting as the more sustainable end of life option versus landfill and incineration.
- Certified compostable bags are gaining acceptance and popularity as the best practice, and increasing food waste diversion in existing programs by helping make the process cleaner, safer and easier.

Thank you

Questions?

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We create chemistry