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World Chefs Sustainability Curriculum

Waste Management

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The Next Step

- From agriculture to aquaculture, energy reduction to water conservation, previous classes discussed concepts crucial to sustainability in the kitchen.
- In this section, an often overlooked but equally important part of sustainability is covered: waste management.

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Waste Happens

- Waste happens whenever people come together – since the beginning of civilization.
- Archaeological “finds” are often the waste piles from long ago civilizations.
- Evolution of the landfill:
  - Dumps to landfills to material recovery
  - New technology: incineration & other waste-to-energy

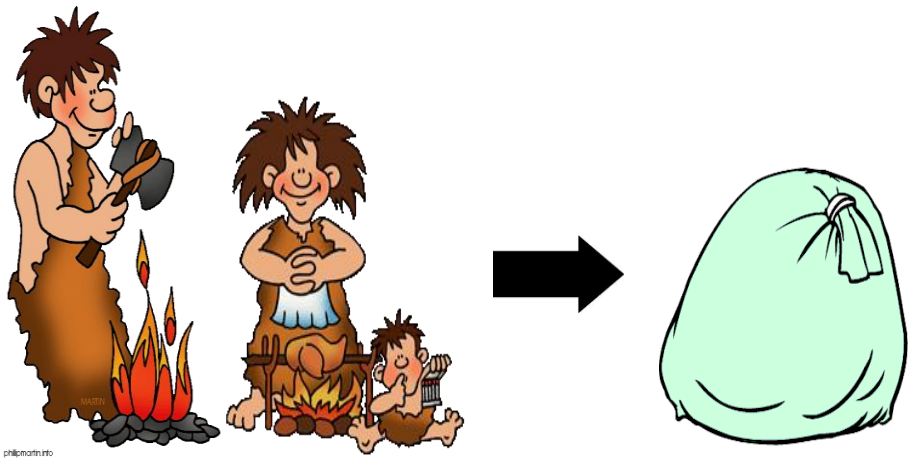

Photo courtesy of nogwog.com

My What a Big Pantry You Have!

Back-of-the-House:

Products arrive with a multitude of materials:

- Pallets
- Shrink wrap
- OCC – old corrugated cardboard
- Expanded Polystyrene
- Banding

The Waste FRONTier

Front-of-the-House (FOH)

Creating a fun, pleasant or themed environment is integral to the guest experience and generates materials | trash:

- Tablecloths
- Table centerpieces
- Room décor

Photos courtesy of Affairs to Remember Caterers

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Box it Right!

Transport Packaging

Paraffin-based waxed OCC is common for protein and produce shipments is trash; NOT recyclable nor compostable.

- COSTLY: product is delivered in trash incurring landfill pull & tipping charges.
- Cost-effective alternative coatings are available where the boxes are recyclable AND compostable, thus revenue generating material.

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Make it Compostable!

Compostable F&B Packaging Key to FOH Food Waste

- Food waste & packaging are collected in one stream.
- Compostable liners keep the containers clean.
- Beware of greenwashing – rely on independent third-party certification to ensure products are indeed compostable.

Photo courtesy of Eco-Products

Photo courtesy of http://labellafigurabeauty.blogspot.com/

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Spent Grease

Used fryer grease is a valuable material with strong market demand:

- Ingredient in animal feed, cosmetics and other products is the most common destination for “spent grease.”
- Biofuel production is the preferred destination from a sustainability standpoint.

Courtesy of cartalk.com

Courtesy of eere.energy.gov

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Where does it all go?

The Three R's of Material Management:

1. **R**educe – always look for ways to reduce the quantity of materials purchased or used in operations.
2. **R**euse – whenever possible get as many "lives" out of an item by reusing, rather than reaching for a new one.
3. **R**ecycle – when items are totally spent with no more use, collect for recycling.

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What's Most Effective?

Source Separation

Single Stream Recycling

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Is All Trash Equal?

Material Vs. Trash

- Local recycling market options
- Hauler availability
- End uses for material
- Contamination levels

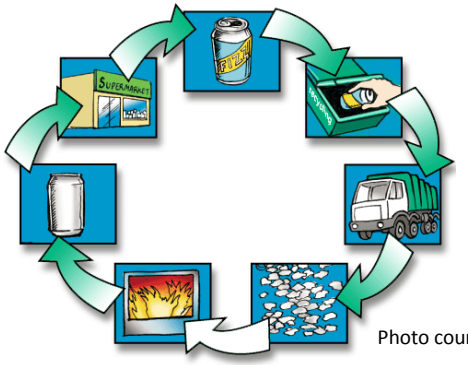

Photo courtesy of Wikispaces

Photo courtesy of concordma.gov

Contamination transforms material to trash

Photo courtesy of Natur-Bag

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Contamination

An expensive trip to the landfill!

Food Waste is a BIG Contaminant

Food waste can cause big, unnecessary expenses:

- Causes odors in trash dumpster | compactors resulting in “pulling” the container for landfill before full
  - Operator is charged per pull
- Contaminates valuable recyclable material rendering it trash
  - Operator pays for landfill tipping fee, rather than receiving a rebate for selling the material

Photo courtesy of Sunrise Innovations

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Food Waste in the Landfill

- Landfills are an anaerobic environment (no air).
- Food waste decomposition in an anaerobic environment produces methane gas (CH_4).
- Methane is a GHG (greenhouse gas) 20-25 times more potent than naturally-occurring carbon.

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Where, Oh Where, is our Soil?

The Earth's soils are depleted AND disappearing:

- Since 1960, an estimated 33% of the world's arable land was lost through erosion & other degradation.
  - Due to soy production, Brazil loses 55 tons of topsoil each year
- 33% of soil is moderately to highly degraded due to erosion, nutrient depletion, acidification, salinization, compaction and chemical pollution; farmers abandon depleted soil and move to productive soil.
- Globally, the land used and abandoned in the last 50 years may be equal to the amount of land used today.

Photo courtesy of soilerosion.net

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Erosion is Expensive!

Sediment is the #1 pollutant in US waterways

The cost of soil erosion in the U.S. is an estimated $44 Billion

Photo courtesy of FAO

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Feed the Bugs, Save the Soils!

- Compost is Nature's food for the soil microbial communities.
- Food waste is a key ingredient in the compost recipe.
- Soils rebuild when the microbial communities are well-fed and nurtured.

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Beyond Landfill Destination...

In the US, a rigorous state-permitting process is in-place for ALL food waste destinations, whether landfill, compost or another option.

Currently there are four major categories for food waste options:

1. Outdoor, turned windrow composting – closest humans can emulate Nature
2. Covered and non covered aerated static pile composting
3. In-vessel composting
4. Anaerobic digesters

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Zero Waste

The Three R's of Material Management: Reduce, Reuse |Donate, Recycle are the foundation to Zero Waste, an emerging industry standard.

- Zero waste certifications set & define the standard.
- Organizations promote their zero waste success.
- Zero waste is a common media term.

U.S. zero waste BUSINESS COUNCIL

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Success Stories

CASE STUDIES

Learn about where end-of-life options are working, where zero waste events are succeeding and how they're helping divert waste from landfills.

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In Summary

- Materials have value. Trash has cost.
- Zero-waste practices make good business sense.

- Sustainability provides a competitive edge on many levels.

Photo courtesy of imagi-nation.co.za/

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Thank You

for providing waste management curriculum:

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