World Chefs Sustainability Curriculum

Waste Management
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.
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
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
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.
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.
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.
Where does it all go?

The Three R’s of Material Management:

1. **Reduce** – always look for ways to reduce the quantity of materials purchased or used in operations.

2. **Reuse** – whenever possible get as many “lives” out of an item by reusing, rather than reaching for a new one.

3. **Recycle** – when items are totally spent with no more use, collect for recycling.
What’s Most Effective?

Source Separation

Single Stream Recycling
Is All Trash Equal?

Material Vs. Trash

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

*Contamination transforms material to trash*
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
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.
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.
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
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.
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
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.
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.

Pittsburgh Pirates
A case study on waste diversion

London Olympics
A case study on zero waste events

Xcel Energy Center
A case study on waste reduction

Portland Trail Blazers
A case study for landfill diversion
In Summary

• Materials have value. Trash has cost.

• Zero-waste practices make good business sense.

• Sustainability provides a competitive edge on many levels.
Thank You
for providing waste management curriculum:

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