Food Waste Measurement

Topics

• Why measure food waste?
• Types of waste
• Pre-consumer measurement
• Post-consumer measurement
• Takeaways
We All Acknowledge the Problem

**FOOD WASTE IS A GLOBAL PROBLEM OF BREATHTAKING SCOPE**

1/3 of all food globally is wasted. 1.3 billion tons of food are not consumed.

AND IT’S A PROBLEM

THAT’S GROWING IN THE U.S.

40% of food grown or raised in the U.S. is not eaten.

50% rise in U.S. food waste from 1974 to 2003.
And Its Environmental Impact

IT’S COSTING A LOT OF MONEY... AND A LOT OF RESOURCES.

25% OF ALL FRESHWATER and 300 MILLION BARRELS of oil are used to produce food that is wasted. $250 BILLION lost globally every year.

IT’S FILLING UP LANDFILLS AND TAKING A HUGE TOLL ON THE ENVIRONMENT.

FOOD WASTE is the single largest component sent to American LANDFILLS.

It’s a significant source of METHANE — a potent greenhouse gas with 21 TIMES THE GLOBAL WARMING potential of carbon dioxide.
Food Waste in Foodservice

HOW MUCH OF THIS PROBLEMSTEMS FROM U.S. FOODSERVICE OPERATIONS?

4–10% of food purchased is **THROWN OUT** before reaching a plate.

$8–20 BILLION of pre-consumer waste generated by the U.S. out-of-home restaurant and foodservice industry every year.

Pre-consumer waste is the kitchen waste that occurs before the food even reaches a guest, from **OVERPRODUCTION, SPOILAGE, ExPIRATION** and **TRIMMINGS**. It's within the control of the foodservice operator and can be prevented!
What Are Your Food Waste Goals?

EPA Food Waste Hierarchy

- Prevention
- Donation
- Diversion

Source Reduction — Reduce the volume of food waste generated
Feed Hungry People — Donate extra food to food banks, soup kitchens, and shelters
Feed Animals — Divert food scraps to animal feed
Industrial Uses — Provide waste oils for rendering and fuel conversion; and food scraps for digestion to recover energy
Composting — Create a nutrient-rich soil amendment
Landfill/Incineration — Last resort for disposal
Prevention Demands Measurement

“You can't manage what you can't measure.”

– W. Edwards Deming

Measurement Enables You To:

- Establish baselines and visualize trends
- Diagnose issues
- Raise employee awareness

If you’re not measuring food waste, how can you identify progress or areas to improve?
Measurement Types

Auditing
- Point in time
  - SSO/mingled data collected by an audit team
  - Quantity and limited food detail

Tracking
- Continuous
  - SSO Data collected by employees
  - Quantity, value, extensive food detail and context
2 Types of Food Waste to Assess

Back of the House: Pre-Consumer
("Kitchen Waste")

Due to overproduction, spoilage, expiration, trim waste, etc.
Controlled by kitchen staff

Front of the House: Post-Consumer
("Plate Waste")

Due to behaviors, portion sizes, self-service, etc.
Controlled largely by guests
BACK-OF-THE-HOUSE MEASUREMENT
Why do we waste food in BOH?

- It’s expensive to run out so we make more
- We must serve safe food
- Attractive merchandising increases customer satisfaction and sales
- Labor cost control encourages large batch production
- We want convenient service, wide choice, and broad availability
Restore Balance

1. Acknowledge the challenge
2. Go positive
3. Engage everyone
4. Collect data
5. Set goals
Sorry, no box to check and forget

Food waste is a challenge which requires ongoing vigilance, just like quality, safety and sanitation. It is a matter of regular practice, not a problem to fix once and forget.

We need to focus our culture on food waste...continuously.
MEASUREMENT = DAILY CULTURE
Daily Waste Tracking

**Tracking** enables operators to:

- Engage and include everyone in the collection process
- Obtain accurate data
- Prove its safe
- Set very specific goals
What “Waste” to Track?

• Overproduction
• Spoilage
• Expired/Dated
• Trim Waste
• Contaminated
• Burned/Dropped
Tracking Process

Kitchen
- Hot production
- Cold production
- Other areas

Tracking Station
- Garbage/Disposal
- Pot Wash

Servery
- Hot line
- Salad bar
- Other cafes and kiosks

No incremental labor required;
On average, less than 1 min/per employee/day
Continuous Process Improvement

Information

Review Data
Set Goals
Identify Improvements

Action

Outcome

Changes to:
Production
Purchasing
Menus
Behavior

Waste Reduction
Evolution of Tracking

Future: Cloud-Based Automation

Advanced: Local Automation Tools

Basic: Manual Paper/Excel
Evolution of Tracking

**Future:** Cloud-Based Automation

**Advanced:** Local Automation Tools

**Basic:** Manual Paper/Excel
Manual Data Collection

• Paper Log Books & PC Data Entry
• Data collected by weight, volume, count or visual estimate
• Handwritten
• Manual analysis from paper or via PC data entry (e.g. MS Excel)
Single or Double Data Entry?

Data collection

- Double Entry
  - Paper Sheet
  - Automated System
  - Enter into Excel Tool
- Single Entry
  - Faster Report Availability
Evolution of Tracking

Future: Cloud-Based Automation

Advanced: Local Automation Tools

Basic: Manual Paper/Excel
Local Automation Systems
Breaking Down the Tracking Theory

*We once thought the process would be as easy as 1, 2, 3:*
Breaking Down the Tracking Theory

*But that wasn’t accurate…*

**Myth:** The data collection process is just about collecting information for use by managers...

**Myth:** Once you know where there are problems, it’s easy to direct changes.
Breaking Down the Tracking Theory

The proven tracking process...

**Reality:** The data collection process is about sending a message to the front line team about values and priorities...

**Reality:** The hard part about change isn’t finding the right answer, it’s shaping the culture to accept and persist change.
Ideal Scenario

• Give staff real-time feedback
• Keep your waste goals top-of-mind
• Reward your team members
• Keep them engaged and motivated
• Make everyone feel like they are part of the solution
Evolution of Tracking

Future: Cloud-Based Automation

Advanced: Local Automation Tools

Basic: Manual Paper/Excel
Real-Time Models

1. Data Collection
2. Wireless Transfer
3. Data Warehouse Storage
4. Online Analytics
5. Information Signage On-Site
LEANPATH TRacker

TUESDAY, APRIL 30, 2013  4:26 PM

WEIGHT  LB

45.0

Food:  Produce:

Fruit - Other
Veggie Fresh
Veggie - Specialty
Fava Beans
Melons

Veggie Frozen
Veggie Canned
Artichoke
Asparagus

Loss Reason:  Container:  Source:  Sink:  Daypart:
Cloud-Based Analytics
Bring Back to Front-Line

WASTE TRACKER
TUESDAY JUNE 14, 2013 10:25 AM

WEIGHT
000.0

Help Prevent Food Waste

15,000 lbs. of Food Waste Prevented
SINCE JANUARY 15, 2013

FOOD WASTE FOR LAST 14 DAYS
June 02 - June 15

02 03 04 05 06 07 08 09 10 11 12 13 14 15

-05%
-12%
-54%

YESTERDAY
PRIOR MONTH
PRIOR 3 MONTHS
Make It Fun

WASTE TRACKER
TUESDAY JUNE 14, 2013 10:25 AM

TOP WASTE WATCHERS FOR LAST 14 DAYS

<table>
<thead>
<tr>
<th>OPERATOR</th>
<th>Weighs</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janice J.</td>
<td>45</td>
<td>115</td>
</tr>
<tr>
<td>Todd F.</td>
<td>32</td>
<td>96</td>
</tr>
<tr>
<td>Kristina Q.</td>
<td>24</td>
<td>66</td>
</tr>
<tr>
<td>Michael L.</td>
<td>24</td>
<td>72</td>
</tr>
<tr>
<td>Alexander S</td>
<td>21</td>
<td>33</td>
</tr>
<tr>
<td>Lynn W.</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>Marco T.</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Alexis C.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thomas B.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cyndy J.</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Help Prevent Food Waste

Track Record Food Waste

Track Express Item Select a Tracking Shortcut

Recognition Awards
10 WINNERS IN LAST 90 DAYS
THANK YOU FOR TRACKING!

LeanPath  www.leanpath.com  (877) 620-6512  info@leanpath.com
Make and Monitor A Plan

WEEKLY WASTE GOALS
FOR MAY 12 THROUGH MAY 18

THIS WEEK’S GOAL:
REDUCE SOUP WASTE
AVOID $500 OF WASTE

Soup Waste Down 2% Since Yesterday.

30 SAVINGS
SAVINGS GOAL EXCEEDED

MOST WASTED FOODS IN LAST 7 DAYS

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+12%</td>
<td>+09%</td>
<td>+04%</td>
</tr>
<tr>
<td>BROCCOLI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASHED POTATOES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BROWN RICE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# EPA Guidance for Long-term Solution

## Food Waste Tracking Systems

- Many types of tracking systems exist
  - Vary in cost, complexity, and focus

<table>
<thead>
<tr>
<th></th>
<th>FREE</th>
<th>Available to Public</th>
<th>Easy to Identify Opportunities for Reduction</th>
<th>Long-term Tracking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Tracking Logs</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automated Tracking Systems (e.g. LeanPath ValuWaste)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Proprietary Tracking Systems</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>EPA's Food &amp; Packaging Tool</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Source: EPA Presentation on Food Waste
FRONT-OF-THE-HOUSE MEASUREMENT STRATEGIES
Create Student Awareness

2012 Kansas State Study:

Students threw out 15 percent less food after researchers peppered dining halls with short anti-waste slogans…and then measured the waste and posted data.

There was no greater reduction after adding data to the signage. However, other study implementation issues may be driving this finding.
Post-Consumer Waste Visibility

• Periodic measurement of post-consumer food waste works well.
  – Daily tracking isn’t necessary for post-consumer food waste; product is commingled and more difficult to characterize

• Prominent data sharing

• Gamification through competition
Audit Options

• Weigh the waste – public event
• Behind the scenes auditing
Public Audit

• Post prominent signage on day of the audit
• Guests, volunteers or staff scrape food waste into clear bins in front of dish return
• Waste in bin is weighed periodically
• Add up daily totals in weight (lbs)
• Record observations about frequently wasted menu items

http://ucscsustainability.blogspot.com
Post-Audit Communication

• Post data prominently
• Consider retaining and displaying one-meal of cumulative waste...or simulate with equivalent display of edible, shelf-stable food
• Create a public goal/challenge
Remember

• You don’t need to be perfect
• Just start moving toward your goal
LeanPath Resources

The Path to Food Waste Reduction Starts Here

• Food Waste Prevention e-newsletter
• Food Waste Focus Blog
• Waste Reduction Toolkit

Questions?

Kathleen Seelye  
Ricca Newmark Design  
kseelye@riccanewmark.com

Tarah Schroeder  
Ricca Newmark Design  
tschroeder@riccanewmark.com

Andrew Shakman  
LeanPath, Inc.  
(503) 620-6512 x100  
asakman@leanpath.com