Food Waste: It’s More Than Just Trash Talk

Guelph’s Food Waste Research Project

Recycling Council of Alberta
“League of Extraordinary Recyclers – Knocking out Waste”
September 29, 2016
Why Food Waste Matters

• It is estimated that the world wastes 1.3 billion tonnes of food annually, at a cost of $750 billion (FAO 2013)

• Canadians waste $27 billion of food annually:
  – 40% of all food produced, and 2% of our GDP and half of this waste happens in hhlds (Gooch et al 2010)
  – Works out to about $28/week/hhld

• Food wasting has many environmental, economic and social issues associated with this food loss
Policy Context

• Changes in federal and provincial policies
• Tax incentives
• Proposed Bill C – to establish a national strategy to reduce food waste in Canada
Food Waste in Canada

Where Food Waste Occurs Through Canada's Food Value Chain (% Distribution)

Gooch et al 2014
Figure 1: The agriculture and food value chain

- **Consumers**
  - Urban
  - Rural

- **Retailers**
  - Hypermarkets
  - Supermarket
  - Corner shops

- **Food companies**
  - Bakery
  - Meat
  - Dairy
  - Snacks
  - Beverages

- **Traders**
  - Crops
  - Meat
  - Oils/meal
  - Biofuels

- **Farmers**
  - Crops
  - Meat
  - Dairy

- **Input companies**
  - Seeds
  - Fertilizer
  - Crop protection
  - Animal health and nutrition
  - Crop insurance
  - Food ingredients

KPMG International 2013
Innovating to Reduce Food Waste

**Food Recovery Hierarchy**

1. **Source Reduction**
   - Reduce the volume of surplus food generated

2. **Feed Hungry People**
   - Donate extra food to food banks, soup kitchens and shelters

3. **Feed Animals**
   - Divert food scraps to animal feed

4. **Industrial Uses**
   - Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

5. **Composting**
   - Create a nutrient-rich soil amendment

6. **Landfill/Incineration**
   - Last resort to disposal

Most Preferred

Least Preferred
Local Food Waste Research

- hshd surveys
- curbside weights
- audits
Limitations of Study

- Focus of waste put out for collection
- Other materials in the waste stream
- Small survey size
Food Waste Surveys

• Door-to-door surveys conducted in 2013 and 2014
• Asked about curbside behaviours and attitudes towards food waste
Food Waste Behaviours & Beliefs

- Family lifestyle and large hhlds
- Food awareness
- Waste awareness
- Convenience lifestyles
**Household Waste Management Behaviours**

1 How do you dispose of food waste in your home?

<table>
<thead>
<tr>
<th>Method</th>
<th>% Yes</th>
<th>% No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Green Bag</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>b Garbage Bag</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>c Backyard/indoor composter</td>
<td>13</td>
<td>87</td>
</tr>
<tr>
<td>d Garburator/sewage system</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>e Feed domestic/wild animals</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>f Take to landfill/transfer station</td>
<td>15</td>
<td>85</td>
</tr>
</tbody>
</table>
Survey Answers

Who is responsible for food waste?

- Individuals: 70
- Stores: 20
- Farmers: 10
- Manufacturers: 30
- Government: 20
- Restaurants: 0

1st, 2nd, 3rd, 4th, 5th
Shopping Habits – Primary Food

Primary Shop

![Bar chart showing primary and secondary shopping habits for different types of food sources.](chart.png)
Shopping Habits – Behaviours

Shopping

- Yes
- Sometimes
- No

(List, Inventory, Flyers, Plan, Budget, Nutrition, Organic)
Feelings About Food Waste
Why Do We Waste So Much Food?

- Convenience lifestyles
- People not waste aware
- Best before/Worst after
- Guilt – the gift that keeps on giving
Food Waste Protocol
Modified WRAP - UK

| Fruit and vegetables | • Fresh or processed
|                     | • “Notably, the group contains some food types not found in fresh form, which are baked beans, coleslaw, hummus, mixed non-leafy salad, vegetable-based sandwich spread, and meat substitute products such as Quorn and soya mince.”
|                     | • Nuts (unlike WRAP) | • “…considered avoidable waste if the vast majority of people would consider it edible.”
|                     |                     | • “Possibly avoidable food includes fruit skins that some people may choose to eat but others do not, for example for example potato and cucumber skin... apple and pear skin.”
|                     |                     | • “Unavoidable waste is that which the vast majority of people would consider inedible, for example onion skin, hard vegetable peel (e.g. swede) and sweet corn cobs... apple cores, banana skin, peel from citrus fruit, melons and pineapple.” |
How Much Food Do We Waste?

• On average, in 2015, households in Guelph produce 5.58 kg of food waste per week
• 36% was unavoidable (trim, peels, inedible bits)
• 64% was avoidable or possibly avoidable
• 53% of fruit and vegetable waste was avoidable
Data From 2015

- 63% of the total waste was fruits and veg
- 14% bread and cereals
- 9% meat and fish
- 8% milk/cheese/eggs
- Less than 1% fats and sugars – small volume
- 6% other (coffee, unidentifiables)
Reducing Household Food Waste

• We learned that people who were ‘waste aware’ or ‘food aware’ wasted less food
• We need to think about food waste in order to avoid it

Targeted campaign may encourage hhlds to:
• Plan weekly meals and shop with a list
• Prioritize eating leftovers and foods that are close to spoiling
• Cook, then freeze individual portions
• Re-skill; cook with friends/family; etc.
What Else is Happening in ON

- Food waste reduction campaigns are underway in Peel Region; York Region; Toronto
- ON Municipal Waste Association has a Food Waste Reduction Working Group
- ON Food Collaborative – Metrics Working Group
- Food Collaborative is considering franchising “Love Food – Hate Waste” campaign
New research questions...

- How do changes to municipal organic waste collection systems influence household food waste production?
- Do demographically different neighbourhoods exhibit different food wasting behaviours/beliefs?
- Does the municipal organic waste stream enable guilt-free food wasting at the household level?
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UoG Blog:  guelphfoodwaste.com