



FOOD WASTE

Preliminary Findings Residential Food Waste Numbers

Michael von Massow and Ralph C. Martin

University of Guelph

Overview

As part of a waste audit conducted in a medium sized Ontario municipality, an assessment of the quantity and type of food waste generated was undertaken. This brief discussion document is a preliminary introduction to the waste numbers to provide some context for the ongoing discussion on food waste.

The total average food waste generated per household per day during the collection period was 500 grams. This represented almost 60% of the total non-recyclable waste stream.

Extrapolated over a year this represents 182.5 kg of food discarded per household per year.

There are more than 12 million households in Canada translating to approximately 2.2 million tonnes of food dropped at the curb every year in Canada. This figure does not take into consideration waste further up the value chain or food consumed away from home. Although we did not determine the proportion of unavoidable waste (peels and cores from fruit, bones from meat), observations indicate that a significant portion of this waste is avoidable and represents a substantial environmental and economic cost to Canada. This merits further attention.

As one would expect, there is a strong correlation between food packaging (both in recycling and waste streams) and the volume of food waste. This will be investigated further, including an analysis on variability by neighborhood. This result, however, highlights the need to consider not only the organic waste but also the packaging waste (for recycling and in the landfill) associated with our food habits.

There is also a strong correlation between food packaging in the garbage stream (i.e. it is not separated and put in the blue box) and total food waste. This needs more research but may suggest that people who are more conscious of waste generally (pay more attention to recyclables) tend to waste less food.

These preliminary results provide some context for the ongoing discussion on food waste. With our additional data, we will conduct statistical analysis to garner further insight on residential food waste. The next section provides some breakdown of the food waste and the final section provides a brief description of the audit.

Components of Food Waste

Food waste was divided into five categories (detailed in the section below on the audit).

Fruits and Vegetables

The average household generated approximately 270 g of fruit and vegetable waste per day, representing just over 50% of the total food waste generated. It is worth noting that the

correlation between total fruit and vegetable waste and food packaging generated was weaker than that for total food waste. This is not unexpected as there is less packaging associated with fresh fruit and vegetables.

A portion of fruit and vegetable waste will clearly be cores and peel and other unavoidable waste. It is also clear, however, that a large portion of this waste is product that would have been consumable under other circumstances.

Controlling purchases and repurposing fruits and vegetables that are beyond their peak are strategies that can reduce the avoidable waste portion.



Sample Fruit and Vegetable Waste

Meat and Proteins

The average household generated 50 g of meat waste per day. This category was highly variable. While this includes trimmings and bones, there was also a lot of uncooked meat that might have reached a best before date. Once again, thinking about purchases so that inventories are used before product reaches a best before date could be a strategy to reduce this category.



Sample Meat Waste

Dairy and Eggs

The average household generated 20 grams of dairy and egg waste per day. This waste was usually small quantities of yogurt or shells. In some cases, whole eggs were thrown out which we anticipate was again an issue with best before dates.



Eggs in Waste Stream

Cereals

The average household generated 70 grams of cereal and grains waste per day. While it is often bread ends, there were also many instances where whole loaves were discarded in the wrapping.

“Other” Waste

All other food waste was lumped into a single category for the purposes of this waste audit. The average household generated 90 g of waste per day in this category. This catchall generates a variety of waste with a large portion being coffee grounds, which would be considered unavoidable as it is a byproduct of coffee production and could be diverted to an organics stream. It is worth noting that the coffee grounds in plastic containers for “pod” type coffee makers were found in this category. These grounds are bundled with the plastic pod and as such go into landfill rather than organics or recycling.



Bread Waste

The Audit

The data were collected as part of a residential waste audit in a mid-sized Ontario municipality. The data are usually aggregated across 10 households but we were able to collect data in five household groups. The process of collection and separation is expensive and individual household data would provide greater insight on variation, but this method provides an excellent start and considerably more detail than has been available before.

The data were collected over two weeks (two collection periods), from a variety of neighborhoods, including single family houses and rental townhomes. Data includes both the recyclable and the waste stream (including recyclables in the waste stream). The typical waste audit will lump all food waste into a single category separate from other organic waste (such as yard waste). In this audit we were able to separate food waste into five categories.

1. Fresh vegetables, salads, fresh fruit and beans – includes pure fruit/vegetable juices, peels, pits/cores, nuts, etc.
2. Meat and fish – including bones and trimming
3. Dairy and eggs - includes shells, & dairy substitutes (e.g. almond milk)
4. Cereals, grains, pasta and bakery - includes granola bars, corn chips, crackers, cookies
5. Other food waste -includes water, other liquids (excluding 100% fruit/veg juice), highly processed foods, candy, chocolate bars, multi-ingredient products, salad dressing, sauces, etc.

Additional research is warranted looking at greater division in waste categories. Nevertheless these data already provide greater detail than previously available in Canada.