

**PROVISION
COALITION**

MAKING FOOD SUSTAINABLY

CANADIAN FOOD LOSS + WASTE CASE STUDY SERIES

Campbell's®

Campbell Company of Canada

Campbell Company of Canada is driven and inspired by its Purpose, “Real food that matters for life’s moments”. The Company makes a range of products from high-quality soups and simple meals to snacks and healthy beverages. For over 85 years, Canadians have trusted Campbell Canada to provide authentic, flavorful and readily available foods and beverages that connect them to each other, to warm memories, and to what’s important today. Led by its iconic Campbell’s brand, the company’s portfolio includes Pepperidge Farm, Goldfish, V8, Prego, Pace and Plum Organics. For the foodservice industry, Campbell Canada markets frozen soups and healthcare products such as Campbell’s Verve and Eating Smart Soups. Based in Etobicoke, Ontario, the Canadian operation is a strong supporter of local non-profit and charitable organizations and is one of the largest contributors to food banks across Canada.

Campbell Canada partnered with Provision Coalition, Canada’s food and beverage manufacturing sustainability organization, to reduce food loss and waste in its Toronto facility and pilot Provision’s online Food Waste Reduction Toolkit. Enviro-Stewards was engaged to assist with conducting a food waste prevention assessment.

Implementing identified food waste reduction measures, with a net payback period of less than 6 months, could increase the yield of Campbell Canada’s Toronto facility by 938 tonnes per year valued at \$706,000.

PROVISION COALITION'S FOOD LOSS + WASTE (FLW) TOOLKIT

The FLW Toolkit, which is part of Provision's online Sustainability Management System, is the only online resource accessible by all food and beverage manufacturers to assist in quantifying in-plant avoidable food waste, calculating its dollar value, and conducting a root cause analysis to developing cost effective FLW reduction strategies.


This Toolkit was developed by Enviro-Stewards, 2cg and Dillon Consulting and is available at no cost to all food and beverage manufacturers through Provision Coalition's online Sustainability Management System.

Campbell Canada annually conducts a solid waste audit in accordance with Ontario's 3 Rs regulations. However, this audit has little impact on food waste as assessments are normally completed at the dumpster and only 1% of the company's food waste is lost at landfill. As with many other operations, the majority of food loss + waste occurs within the facility during production, which is the focus of the FLW toolkit.



The food waste assessment started with an evaluation of the entire processing facility from raw vegetable receiving to final product packaging and canning. The quantity and value of food waste was then determined along the production process by using the FLW toolkit, followed by a "5 Why" approach to identify root causes of each waste stream. Possible solutions for reducing each food waste stream were considered, and an implementation plan was developed for selected measures that were quantified using the FLW Toolkit.





Food waste savings typically range from \$1,000 to \$6,000 per tonne for saleable product when compared to \$80 to \$100 per tonne commonly used to value waste management options as part of a solid waste audit.

Food Loss + Waste Assessment & Conservation Opportunities

The utilization of Provision's FLW toolkit coupled with the assessment, generated six quantifiable food waste reduction opportunities that will significantly reduce food waste at Campbell. The top four recommendations are highlighted.

1. Product Push at End of Production Runs

Campbell Canada's aseptic¹ packaging facility is losing about 897 kg of finished product² per day within three separate transfer pipes at the end of each production run. Provision's Toolkit estimated that this loss represents over 247 tonnes of product per year, valued at over \$284,000. Improvements to the transfer process could potentially recover 90% of end of push transfers saving 222,000 kg of product ingredient or \$259,000 annually.

Food loss + waste is a global issue.

According to the Food and Agriculture Organization of the United Nations, roughly one third, or approximately 1.3 billion tonnes of the food produced in the world for human consumption every year, gets lost or wasted.

In Canada, the numbers are comparable, with 40 percent of the food produced wasted - a loss that is valued at \$31 billion dollars annually. With this challenge comes opportunity for Canadian food and beverage manufacturers to continue to optimize operations, reduce costs and overall environmental impact.

1. Aseptic processing is the process by which a sterile (aseptic) product (typically food or pharmaceutical) is packaged in a sterile container in a way that maintains sterility. (Source: Wikipedia; https://en.wikipedia.org/wiki/Aseptic_processing)
2. Finished product refers to fully processed and mixed ingredients ready for packaging.



Dave Fox of Enviro-Stewards and John Lillard of Campbell Soup with a tote of optical sorter rejected product together with collateral losses.

2. Manual Sort of Vegetables

Campbell Canada uses fresh raw vegetables as a main ingredient in soups. Once received at the facility, potatoes and carrots are peeled and manually sorted to remove off specification produce. Potatoes and carrots then share a common conveyor system following the peeler. The food waste prevention assessment found that excessive amounts of vegetables that were of satisfactory condition were diverted to waste. The Toolkit estimates these losses at over 215,000 kg/yr. A review of this situation with employees identified measures that will recover upwards of 75% of discarded vegetable waste, saving over 161,000 kg or \$61,000 annually.

3. Optical Sort of Vegetables

When carrots and potatoes are received at the facility they are sorted, sliced and diced followed by optical sorter processing to remove blemished vegetables. Floor measurements found that collateral losses of good quality carrots and potatoes amounts to 799 tonnes per year. It was found that by preprocessing or decreasing the speed of the optical sorter, collateral losses could be reduced by 2/3. This would potentially avoid over 537 tonnes of vegetable matter from entering the food waste stream. In addition to saving over \$227,000 in raw ingredient costs annually, addressing this issue will reduce the amount of BOD sewage surcharge fees and embedded natural gas, electrical and water costs.

By reducing collateral loss of quality vegetables from the optical sorter over 537 tonnes of vegetables could be avoided from the waste stream annually, and incorporated into product.



4. Can Pre-Filling

Campbell Canada's canned soup production process pre-fills cans with key ingredients before adding the soup base and sealing the can. The food waste prevention assessment found reoccurring losses of frozen beef and chicken, one of the highest valued ingredients, at certain points in the can filler and weight checking process. In total, losses of 17,000 kg per year valued at over \$171,000 were identified. Redesigning the filling mechanisms could potentially reduce this loss by 80%, resulting in a savings of over 13,000 kg of frozen meat ingredients per year.

"This has been a rewarding process for the team at Campbell Canada in Toronto. We have been committed to Provision's food loss + waste reduction challenge for some time and now we have successfully applied the recently developed Toolkit in our own facility. Food loss + waste has a direct impact on food insecurity - 1 in 8 Canadian families struggle to put food on the table - with 20% of waste occurring at the manufacturing level we have an important role to play. Provision's Food Loss + Waste Reduction Toolkit is available to manufacturers across the country, this is a milestone achievement for the industry."

John Lillard, Research & Development, Campbell Company of Canada

For more information, contact:

Meena Hassanali
 Director of Industry Programs
 Provision Coalition
 519.822.2042 ext. 303
 mhassanali@provisioncoalition.com

PROJECT PARTNERS:



Provision Coalition is Canada's premier food and beverage manufacturer sustainability organization. At Provision, the latest sustainability advances, resources and solutions are shared with food and beverage businesses across the country. To learn more about Provision's Canadian food loss + waste strategy and the online Sustainability Management System and Support Program, visit www.provisioncoalition.com.

This project is funded in part through *Growing Forward 2 (GF2)*, a federal-provincial-territorial initiative.