



**BYBLOS
BAKERY**
A World of Taste

Byblos Bakery

Byblos Bakery is western Canada's number one branded pita maker. Started in 1975, the company, which is located in Calgary, Alberta, began with handmade pita bread production. Today, Byblos Bakery sells fresh, high quality pitas, naans, bagels and tortilla wraps made using innovative technologies across western Canada and the United States. Byblos has a long-standing commitment to business sustainability and the Calgary community - it is their company ethos.

Recognizing the company's commitment to sustainability, Alberta Agriculture and Forestry (AF) selected Byblos for a food and resource conservation initiative with Provision Coalition to explore and resolve food loss + waste and related utility consumption within their operation. This initiative involved piloting Provision Coalition's on-line Food Loss + Waste Toolkit in tandem with a facility food waste prevention assessment conducted by Enviro-Stewards. A concurrent utility conservation assessment was also undertaken at Byblos that included identifying the associated energy and water reductions where food waste was occurring.

OVERALL FOOD AND RESOURCE CONSERVATION OPPORTUNITIES

- \$207,000 in resource savings identified with an aggregate payback of 0.3 years (\$61,750 investment required)
- 63,000 kg of food waste (29%) can be reduced
- 2,800 m³ of water (8%), 62,000 m³ of natural gas (13%), and 450 MWh of electricity (26%) can be saved to achieve 500 tonnes/year (21%) of Scope 1 & 2 Greenhouse Gas emissions reduction

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

The FLW Toolkit, which is part of Provision's online Sustainability Management System, is the only Canadian 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.



Food Loss + Waste Assessment & Conservation Opportunities

Provision's FLW toolkit, coupled with the assessment, assisted Byblos in understanding how much and where food waste is generated within the facility. From that process, reduction strategies and solutions were then developed. The toolkit and assessment generated nine opportunities to significantly reduce food waste at Byblos, a cost estimated at approximately \$725,000 annually for the company.



**Reducing seed losses by 30,000 kg
can save \$80,000 annually**



Increasing conveyor capacity can reduce losses by 8,000 kg, valued at \$27,000

The largest source of waste identified was retail product returns due to expiry date, which accounted for about 42% of facility wide waste (by mass) and valued at \$500,000 annually. The next largest sources of food waste were seeds (16%), dough (15%) and bagels (13%) during production.

Every year, retail product returns due to expiration total 84,000 kg. The returned product is sold to a local farmer at a steeply discounted price compared to retail price. Improvements to retail inventory management and strategies to sell product at a reduced rate near the end of shelf life could assist in minimizing retail returns.

Within the facility, reducing the length of the seed hopper and fashioning a second reclaim chute¹ could reduce seed losses by 30,000 kg/year valued at \$80,000.

The largest cause of bagel waste within the facility is due to inappropriate size and shape, accounting for 38% of total bagel waste. The next largest sources of bagel waste are due to line jams (30%) and inconsistent proofing² (28%).

On the production line, increasing the conveyor capacity before the bagel shaker table, could reduce losses by 8,000 kg/year valued at \$27,000. In addition, minimizing process variance in mixing and proofing (with employee training) can further reduce bagel losses by 7,500 kg/year valued at \$25,000 with an immediate payback.

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. A reclaim chute is a sloped tray that allows product to be reclaimed for reuse.
2. Proofing is the process of allowing dough to rise by a predetermined amount based on the quantity of yeast and ingredients in the recipe.

Utilities Assessment & Conservation Opportunities

The assessment revealed eleven utility conservation opportunities to reduce utility consumption (electricity, natural gas, water) within the operation. Total value of implementing the conservation measures is estimated at \$50,000 plus another approximately \$14,500 in greenhouse gas-related savings.

Over half of the utility expenditure at Byblos is on electricity. Natural gas consumption accounts for about 31% of the total utility expenditure, while the remaining 15% is on water.

Addressing the cause of the low ammonia compressor suction pressure could reduce energy consumption by 160,000 kWh/year valued at \$17,000.

Identifying and eliminating the electrical draw on the main pita line during non-production times could reduce energy consumption by 50,000 kWh/year valued at \$5,000.

"It is a fairly simple equation for business that when you streamline operations you improve profitability. This project did exactly that by exploring food loss + waste in our operation and the related utility consumption. At Byblos, we are also concerned about our impact on the environment and now we are a step closer to that goal with an achievable greenhouse gas reduction target of 500 tonnes per year."

Joe Swiston, General Manager, Byblos Bakery

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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.