

# Consumer Valuation of Milk and Chicken Near the Best Before Date in Canada

Julia Trottier (jtrottie@uoguelph.ca)  
 Dr. Yu Na Lee & Dr. Michael Von Massow  
 Department of Food, Agricultural and Resource Economics (FARE)  
 University of Guelph

## What is a "Best Before" Date?

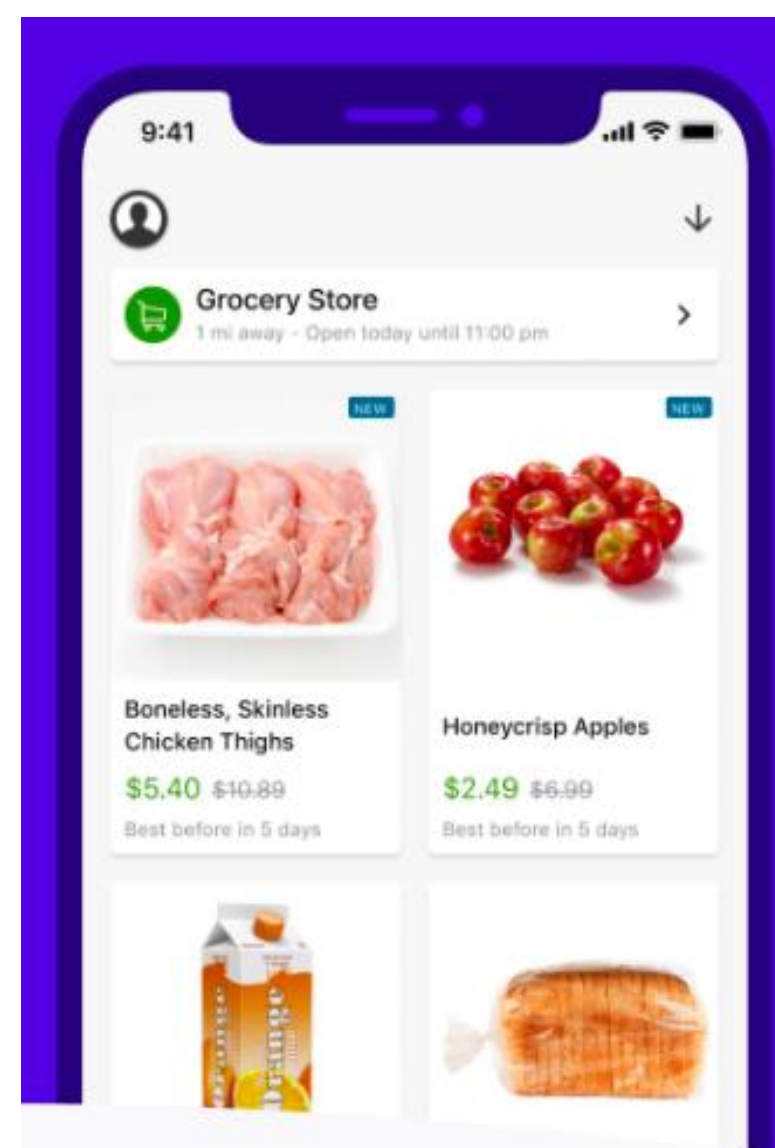
- A best before date indicates **freshness, taste, nutritional value or any other qualities claimed by the manufacturer**
- It is not an indication of product safety
- Food that has exceeded its best before date can still be consumed and legally sold



## Why Does this Research Matter?

- Previous research has found that best before dates create confusion about product safety
- Environmental implications
  - Food waste
  - Resources wasted
- Economic implications
  - Cost to retailer:
  - Potential consumer savings

**\$5.70 billion** worth of food is lost or wasted every year at the retail level (Nikkel et al., 2019)



- Project was motivated by the application FlashFood.
- Research also applies to in-store shopping. Many Retail locations offer "buy today" discounts in stores for 50% off.

## Research Questions

- How do short-dated products change consumer valuation?
  - How does the ability to store a product impact valuation?
  - How does information impact valuation?
  - How do reference prices change consumer perception of valuation?

## Experimental Design

### Choice Set Design:

- Products: Milk & Chicken**

Choice set example:

Alternative	Option 1	Option 2	Option 3
Product	2 Chicken Breasts, Boneless Skinless	2 Chicken Breasts, Boneless Skinless	Purchase Neither
Best Before Date	Best before in 3 days	1 day past best before date	
Price (CAD\$)	\$9.55	\$6.69	
I would choose: (Please check one box)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Choice set questions

Survey questions related to food waste, grocery shopping and sociodemographic information

### 5 varying best before dates :

- Best before in 7 days
- Best before in 3 days
- Best before in 1 day
- Best before today
- 1 day past best before

### 4 varying prices:

- Milk: \$4.69, \$3.99, \$3.28, \$1.88
- Chicken: \$9.55, \$8.12, \$6.69, \$3.82

Control Group:  
 • Best before date  
 • Price

Treatment 1:  
 • Reference prices

Was: \$50  
 Now: \$25

Treatment 2:  
 • Information on food storage

Treatment 3:  
 • Information on requirements for best before dates



## Sociodemographic Characteristics

- Canada-wide survey collected through a survey in Qualtrics
- 1009 participants (50% male & 49.1% female) across various socio-economic groups
- Quotas based on Canadian population used to get a national representative sample

## Contributions

- Study was completed in Canada, which differs from other studies. This is significant because Canadian consumers are different than consumers in other countries. The definition and use of best before dates is also different than in other countries
- Study completed set up to mirror an online shopping experience, which differs from the other studies
- Examines the impact of storage information and reference prices on WTP for products near the best before date
  - The reference price is a discount strategy that shows the regular price (without any discounts) and the offered (discount) price to promote the product.

## Preliminary Results

### Logit Regression Analysis: Chicken

y=Choice (1 if chosen; 0 otherwise)	Control Group	Treatment 1: Reference Prices	Treatment 2: Information on Storage	Treatment 3: Information on Best Before Dates
Price	-0.2115***	-0.2525***	-0.2266***	-0.1985***
Best before in 3 days	-0.2516***	-0.5307***	-0.3108***	-0.3923***
Best before in 1 day	-1.1706***	-1.3982***	-1.3602***	-1.3007***
Day of best before	-1.5372***	-1.8891***	-1.6756***	-1.5383***
1 day after best before	-2.1170***	-2.7239***	-2.4283***	-2.3836***
Constant	1.9347***	2.561***	2.1925***	2.0217***
Observations	6,024	6,240	5,928	6,008
R-squared	0.0751	0.1000	0.0913	0.081

\*\*\*p<0.01, \*\*p<0.05, \*p<0.1

### Logit Regression Analysis: Milk

y=Choice (1 if chosen; 0 otherwise)	Control Group	Treatment 1: Reference Prices	Treatment 2: Information on Storage	Treatment 3: Information on Best Before Dates
Price	-0.0867***	-0.20039***	-0.1737***	-0.1209***
Best before in 3 days	-1.1769***	-1.2449***	-1.1387***	-0.8997***
Best before in 1 day	-2.1893***	-2.3863***	-2.3097***	-2.0389***
Day of best before	-2.5242***	-2.8124***	-2.6314***	-2.3563***
1 day after best before	-3.0656***	-3.0886***	-3.0683***	-2.634***
Constant	1.1445***	1.6193***	1.6013***	1.1112***
Observations	6,024	6,240	5,928	6,008
R-squared	0.0751	0.1000	0.0913	0.081

\*\*\*p<0.01, \*\*p<0.05, \*p<0.1

- For all regressions, the dummy variable on the "best before in 7 days" has been dropped. By doing this we are comparing the other variables to the 7-day option

### Results:

- Utility for milk and chicken decreases monotonically as each product gets closer to and then passes the best before date.
- Signs on price are negative across all treatments
- Impact of treatment groups varies
  - Treatment 1: Reference price increases price sensitivity
  - Treatment 3: For milk, utility from consuming products nearing the best before dates increases when information on best before dates are provided.
- People may be more averse to milk nearing the best before date than chicken



ONTARIO AGRICULTURAL COLLEGE  
 DEPARTMENT OF FOOD, AGRICULTURAL AND RESOURCE ECONOMICS