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# Sampling and Analysis Project

## Canadian Nutrient File

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Canada

# Canadian Nutrient File (CNF), 2007b

[www.healthcanada.gc.ca/cnfonline](http://www.healthcanada.gc.ca/cnfonline)

- **Canada's national reference food composition database**
- **143 food components described for over 5500 foods**
- **Bilingual foodnames, metric measures**
- **2007b version is the 11th edition since inception in 1981**
- **Searchable online application for easy access**



# USDA Nutrient Database vs. CNF

## ■ Foods

- Exclusion of those foods not sold in Canada
- Addition of foods unique to the Canadian food supply
- Cuts and grades of beef

## ■ Food and Drug Act and Regulations

- Fortification
- Specific nutrients which should not be added or must be added at certain levels

## ■ Metric system

## ■ Bilingual



# Limitations - Overview

- **Dependence on USDA/ No opportunity to set our own priorities**
  - for foods
  - for nutrients
- **We know little about how representative the samples from the USDA are**
- **Some Incomplete data sets**
  - nutrition labelling core list only with no additional nutrient data
- **Some less than ideal data quality**
  - no variation provided



# Unique requirements

- **Whole wheat flour definition**
- **Trans fatty acids, reformulation**
- **Regulations for Sodium Addition**
- **Discretionary fortification**



## Food Directorate Strategy to Support the CNF

- **Ongoing program**

Establish priority foods and or nutrients

- **Nationally representative sample**

design, collection(s), transport, processing, storage

- **Analysis**

AOAC or HC approved methods



# Food Composition Laboratory Network

Sample design, coordination, pickup, processing and transport are performed under the direction of the central federal Nutrition Research Division

-some external contracts

Sample analyses for nutrient content are performed in 4 separate Regional Health Canada laboratories experienced in analyzing for components in foods

-using existing staff



# Comprehensive nutrient profiles

Proximates	<b>Moisture, Ash, Total Lipids, Protein</b>
Minerals	<b>10</b>
Vitamins	<b>Depends on the food</b>
Fatty Acids	
Cholesterol	
<b>Fibre</b>	
Amino Acids	<b>Capacity to do in certain foods</b>
Sugars	<b>Capacity to do in certain foods</b>



# Proposal

## Current Short Term (1-3 years) Priority Foods

### Staples/Frequently consumed foods

- **White flour, whole wheat flour, whole grain flour**
- Cheddar Cheese
- Yogurts

### Ingredients

- Milk solids and whey powder
- Hydrolyzed plant protein
- Potato starch

### Collaborations

- Canadian **Turkey** Marketing Association
- Canadian Pulse Association

### Market change

- **Granola bars**
- Breakfast cereals



# Nationally Representative Sample Sets

- Divide country into four major population areas/strongest growth
- Large primary sampling units from Census Metropolitan Areas
- Largest retail chains
- Unique marketing



# Options for Sample pick up

**A** Private companies  
-AC Nielsen, labs

Professional, convenient,  
available, can transport, \$

**B** Internal staff

Can work well for foods that  
have one point of  
manufacture. Very time  
intensive. Work priorities.

**C** Dedicated FTE

Salary and travel costs



# Options for Sample Processing

- A. Regional Labs**      **Not set up for all aspects  
i.e., cooking, dissection, freezer  
space  
Very time consuming**
  
- B. Private Labs/  
Universities**      **Very experienced  
\$\$\$, Overhead costs**
  
- C. Dedicated FTE**      **Investigating cost comparisons  
Lab space**



# 2008/9 – Getting Established

## ➤ Learning Year

- Establishing methodologies, SOPs, training analysts, reporting templates

## ➤ 5 types of retail flour

- All-purpose bleached and unbleached, bread, whole wheat, cake/pastry

## ➤ 12 Categories of granola bars

- i.e., Chewy fruit and nut granola bars



# Budget 2008/9

	O&M	FTEs
- <b>Procurement/Collection of Samples</b>		
- AC Nielsen for Flour (350 bags)	\$9000	
- Toronto and NCR for granola bars (2600 bars)	\$3000	
- <b>Processing and Shipping</b>		
- Kemptville College	\$36,000	
- Ontario Lab	\$ 7,800	
- <b>Analyses</b>		
- Quebec Lab	\$37,500	3
- Ontario Lab	\$ 8,000	3
- Winnipeg Lab	\$26,250	2
- Burnaby Lab	\$20,000	1
- NRC (Private contract lab)	\$38,000	
- <b>Total O&amp;M</b>	<b>\$185,550</b>	<b>9</b>
- <b>Total Capital (one time cost)</b>	<b>\$200,000</b>	



# Lessons/Obstacles

- Continued funding
  - Competing priorities
  - Changing management
  
- Different lot numbers
  - Slow turnover, frequent store visits
  
- Sample processing
  - No in-house capacity for freezing, dissection, cooking
  - Most expensive step for certain foods
  
- Handling of values below LOD/LOQ in the database



## Next Steps

- **Collaboration with Canadian Turkey Marketing Agency**
  - 5 cuts (whole)
  - Broilers, Hens, and Toms
  - Raw and Cooked
  - 3 major regions
  - 8 Federal plants
- **Top selling yogourts/ breakfast cereals / processed meats**
- **Collaboration with Millers Association**

PRAY!



## Valid capital ???



### Quote:

- “At the Forester's unveiling, Subaru showed that you could stash 4,590 granola bars back there without putting the seats down. “

