



Consumer Interest Alliance Inc.

**Report on Focus Group Study
Of
Cheese Standards and the Consumer Interest**

Prepared by

Consumer Interest Alliance Inc.

For

Dairy Farmers of Canada

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The Consumer Interest Alliance Inc. (CIAI) is an emerging working coalition of members deeply concerned with consumer interest through cooperation, discussion and representation with other players in the Canadian economy. It has been established to fill the existing gaps in active, national grassroots-based consumer representation and research based submissions.

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Executive Summary

Cheese is an important component of the Canadian diet. Canadians are particularly interested in the nutritional value of cheese and other milk-based products and include them in the daily food choices for their families. Canadians expect Canadian cheese products to be consistent in taste and texture and to perform according to the characteristics of the cheese varieties they purchase. Canadians also appreciate the variety of cheese products on the Canadian market and rely on the safety and quality of these products.

CIAI, the Consumer Interest Alliance Inc., is a working coalition of members deeply concerned with consumer interests through cooperation, discussion and representation with other players in the Canadian economy. It has been established to fill the existing gaps in active, national grassroots-based consumer representation and research based submissions. CIAI's areas of interest include:

- Food and Agriculture
- Health as it relates to Food and Agriculture
- Environment as it relates to Food and Agriculture
- Standards - National and International

The Dairy Farmers of Canada (DFC) has commissioned CIAI to undertake a study on Cheese Standards and the Consumer Interest. The findings and results of the study are represented in this report. The particular interest of DFC and CIAI relates to consumer understanding of cheese, the current Canadian cheese standards, and their communication to consumers through labels and how they are and should be applied. In addition, the project was interested in determining whether there is consumer support for more standards and regulations for Canadian and imported cheese and cheese products or not.

The methodology used concentrated around consumer views solicited through a series of focus groups in different communities across Canada. A background research paper was produced that established the scientific and technical frameworks for the analysis. It documented the status of cheese composition and quality standards in Canada, the United States, the European Union and CODEX and looked at harmonization and the 'smart regulation initiative' to determine how Canada's standards for cheese compared to our largest trading partner, the United States. It also addressed issues surrounding the nutrition levels of cheese and population health and diets in which cheese plays a major role.

An in-store review of cheese product labels identified a wide divergence in ingredient descriptions with some meeting the current Government of Canada regulations while many others did not. Numerous examples were found where a product was labelled "cheese" but that was not made from dairy products.

The focus groups were organized by local consumer network volunteers with professional facilitators and recorders holding the sessions. To ensure both consistency in information sharing and gathering a facilitators' guide and a participant's book were produced. Questionnaires were added to allow for some quantitative analysis. The one-day sessions

were structured in a way that participants were able to respond to the questions with step-by-step increasing levels of knowledge of the issues involved. The findings from the focus groups were compiled and presented to a Volunteer Advisory Committee of consumer issues experts with expertise in nutrition and food as well as in Canadian standards systems selected for this particular project.

Recommendations were developed by the CIAI research team in consultation with the Advisory Committee and based on the result of the focus group consultation process.

The report is structured into three major sections:

- The Canadian regulatory system for cheese and cheese products and its place in comparison to the respective international systems;
- A discussion of issues and concerns with the current system, its implementation and the changes identified in certain areas through the research and the consultation process with consumers,
- Findings and recommendations as they emerged from the research and from the consumer focus groups and the Advisory Committee consultations.

Food standards are necessary to both consumers and food industry. They have been developed to maintain the composition and general quality of a large part of the Canadian food supply and to prevent economic fraud. Without standards, different foods could have the same names or the same foods could have different names. Both situations are confusing and misleading to consumers and create unfair competition.

Food *standards of identity* are standards of composition and establish the baseline specifications for quality requirements. Standards of identity define what a given food product is, its name, and the ingredients that must be used, or may be used in the manufacture of the food.

The composition of cheese is regulated by a regulatory system, first and foremost by the Food and Drug Regulations and the Dairy Product Regulations. The Food and Drugs Act Section 30 (1) provides for the statutory basis for prescribing the ingredients that may be used in production of food sold in Canada as well as the standards such food must meet.

The Food and Drugs Act and Regulations are major pieces of consumer protection legislation. The Food and Drugs Regulations cover essential composition and baseline quality factors to ensure that the consumer will not receive a product below a minimum acceptable standard and that *the nutritional quality is maintained*. Provisions concerning food additives and contaminants and hygiene are included for health and safety of consumers. Other regulations can be enacted but they must have higher quality standards.

Canadians have confidence in these standards and are relying on them to be consistent, monitored regularly and enforced as needed.

The Food and Drug Act and Regulations for cheese were compared with other regulatory systems applicable to cheese standards in Canada: the Canada Agricultural Products Act and the Dairy Products Regulations. The Canada Agricultural Products Act details Canadian

administrative regulations regarding the grading and marketing of agricultural products as they apply to import, export and inter-provincial trade. It defines “grade name” as a prescribed name, mark or designation of a category and includes a *standard* prescribed for an agricultural product. The Dairy Products Regulations detail the standards of the Canadian Dairy industry with regard to import, export and domestic trade. The regulations cover classification of grades, grade names, and product names for standardized products including cheese.

There are differences in the ingredients allowed between the Food and Drugs Regulations and the Dairy Products Regulations. These are discussed in their relevance to the consumer in the report.

Independent from these regulations and without a comparable regulatory basis, the National Dairy Code has been developed by a Federal Provincial Committee, established under the Integrated Canadian Food Inspection System. The National Dairy Code outlines best practices for production and processing of dairy products. The section of Cheese and Cheese Products provides for descriptions for cheeses. However, these descriptions and specifications are at serious variance with the Food and Drugs Regulations (and the Dairy Products Regulations). Consumers expressed their disapproval of any regulation or code that does not live up to the standards defined in the Food and Drug Regulations and presented detailed reasons for their views.

The Food and Drug Act provides for the enforcement of standards defined in regulations. The Canadian Food Inspection Agency is responsible for the enforcement of the provisions of the Food and Drugs Act (and Regulations) as it relates to food and the administration of the provisions of the Food and Drugs Act as they relate to food except those provision that relate to public health, safety or nutrition

Consumers are very clear about the importance of the Food and Drug Act and its Regulations when it comes to cheese and are conscious of the enforcement standards and mechanisms.

For consumers, compositional standards are essential in maintaining the nutritional integrity of major classes of food, such as cheese and cheese products. Composition of cheese and cheese products determines their nutrient composition and nutritional qualities. Standards of identity maintain nutrition profiles of food products.

The role of the Canadian Food Inspection Agency is clear to consumers. They rely on its monitoring and enforcement role and trust that the role is fulfilled according to the standards established by the Food and Drug Act and its Regulations.

The role of the Minister of Health and Health Canada was established in the same context: they are responsible for establishing policies and standards relating to the public health, safety and nutritional quality of food sold in Canada and assessing the effectiveness of the Agency's activities related to food safety.

Cheese products are of high nutritional quality and important food choices in the Canada's Food Guide to Healthy Eating. Cheese makes a very important contribution to the nutritional

well-being of Canadians. That contribution is even more important with the increased consumption of cheese and the decreased consumption of milk.

Studies in Canada and internationally, such as by the World Health Organization, have underlined the importance of the nutritional value of cheese and cheese products for population health. Milk and cheese made from milk have bioactive properties that enhance health. It is the milk itself, not the presence of specific nutrients in the milk and in products made from milk, which creates the beneficial effects of milk and products made from milk on health indicators. In the consumer responses, nutritional value was listed as the first reason for buying cheese.

For Canadians with dietary and certain health challenges, it is essential to maintain the nutritional equivalencies of cheese products to milk as these are frequent food choices for them. Canadians of vulnerable age groups, such as adolescents and seniors are relying on cheese products for their healthy diet.

Research of this project established that the composition of cheese has been changing in recent years. These changes are often not consistent with the regulations of the Food and Drug Regulations. The introduction of an inclusive term 'modified milk ingredients' has raised concerns among consumers. The introduction of the term 'milk solids' (that have not been chemically altered) into the Dairy Products Regulations also caused concern. No information was available to explain what a 'milk solid' fitting the description might be. These ingredients are used in cheese without them being defined as to their components. Not only are such ingredients taken the first or a prominent place in the ingredient listing of non standard cheeses, they are being used in standard cheeses of named varieties. This is in clear contravention of the Food and Drug Regulations.

Consumers felt very strongly that changes in the composition of cheese should not be made unless documented evidence demonstrates that the changes will not negatively affect the bioactive components of milk and products made from milk, which in turn will impact the health of Canadians.

Information on the ingredients and the nutritional value of cheese products is provided through the labels. According to the relevant Food and Drug Regulations, certain standards apply as to required information, presentation and the veracity and accuracy. Practical, in-store research across Canada identified serious flaws with numerous labels for cheese, whether named variety or no-name products. Even cheese products from the same brand did not provide consistent information. It was discovered that many cheese products in the Canadian market place today fall short of the standards established by the various Government of Canada regulation. Inconsistencies between information on the front panel and the ingredient list also create confusion for the consumer. Some labels can only be described as deceptive and misleading the consumer.

During the focus group consultations participants were shocked when they studied and compared labels. They expressed serious disquiet concerning changes they had noticed in the performance of some cheeses and brand varieties that they were familiar with. The flavour and texture had markedly deteriorated and the cheese no longer performed according to the standard they were accustomed to, e.g. melting, browning, crumbling.

While the consumers consulted are not adverse to innovation and new products on the market, they expect that information about these products is clear and explicit. Changing the nutritional composition of components of a major class of foods without an aggressive consumer education program misleads consumers and jeopardizes the health of, in particular, vulnerable Canadians. If a new product does not meet the complete nutritional profile of cheese it should not be called cheese and should not be marketed in a manner that consumers would mistake it for cheese. Changes in specific ingredients used in cheese will limit choice for some consumers with specific metabolic or digestive problems.

Products on the market that do not meet the Food and Drugs Regulations for cheese have undermined the frame of reference for cheese in Canada's Food Guide to Healthy Eating. For consumers, any description of a product that contains the word "cheese" should be cheese made from milk. Processed cheese should be made from cheese as is in the current regulations. Focus group participants were adamant that products not made from dairy products should not be called "cheese".

The recommendations address the different aspects of the consumer consultation on cheese standards and the protection of consumers. Most forcefully, consumers insist that the Food and Drug Act and its Regulations are applied consistently and fully. The regulations need to be monitored and enforced by the Canadian Food Inspection Agency. Focus group participants rejected the section of the National Dairy Code on Cheese. In terms of quality control, consumers want to see increased quality standards and prefer the US and European standards to the current Canadian standards. Harmonization with US grade standards in this area would be good for consumers and for the industry. If quality indicators are not addressed there is the possibility of decreased consumption as consumers turn away from the use of Canadian cheese and cheese products to products that they can purchase with confidence because of quality control.

Cheese Standards and the Consumer Interest

Introduction

Food labels (statements, images and other representations) are used to communicate to the consumer information about a variety of food product characteristics. Do 'cheese' labels lead consumers to make inferences about the composition and consistency of Canadian cheese varieties? Do consumers know, or care, whether cheese and cheese products actually contain dairy products? Are consumers interested in standards for cheese? Should there be industry standards, voluntary standards or should cheese standards be enshrined in legislation?

Consumers increasingly have access to new 'cheese' products. With these developments there is the potential for consumers to be misled by the labels. Do the labels inform consumers or do they confuse them?

The United Nations Declaration of Consumer Protection - International Declaration of Consumer Protection Rights provides the following:

- The right to choice
- The right to be informed
- The right to safety
- The right to be heard
- The right to redress
- The right to consumer education
- The right to participate in marketplace decision making
- The right to have access to basic services
- The right to a sustainable environment

Four of the above rights for consumers are particularly pertinent to cheese, cheese labels and standards.

- The right to choice,
- The right to be informed,
- The right to consumer education and
- The right to participate in the marketplace decision making.

Importance of cheese in the Canadian diet

Canada's Food Guide for Healthy Eating includes cheese in the Milk Products group. To be included in the Milk Products group a reasonable serving (stated in the guide) must have 300 mg of calcium as well as minerals zinc and magnesium, vitamins riboflavin, vitamin A, vitamin D and vitamin B₁₂ and proteins found in milk¹.

Purpose of the project

This project was designed and implemented by the Consumer Interest Alliance Inc. (CIAI) to address the following issues and purposes:

- To explore consumer understanding of cheese and cheese products;
- To determine how consumers interpret labels on these products;
- To investigate consumer knowledge and interest in compositional standards for different varieties and types of Canadian Cheese;
- To explore approaches for preventing misleading cheese labelling;
- To make recommendations for ways forward.

Methodology

The methodology of the project included a series of steps, each designed to address specific information needs and prepare for subsequent steps. These included:

1. Background research and investigation that resulted in a comprehensive background paper;
2. Complementing the research into the Canadian regulations, the equivalent regulations in the US and Europe were reviewed and compared as were the international standards in CODEX...;
3. The background research identified crucial issues that needed to be explored with consumer focus groups;
4. Practical research of cheese products and labels provided further insights into the issues and provided important source data for the focus groups.;
5. Consumer reactions and views were sought through a series of focus groups across Canada;
6. The results of the focus group consultation process were reviewed by an experienced volunteer advisory committee;
7. The final report reflects the findings and overall research conclusions.

¹ Key Nutrients in Canada's Food Guide to Healthy Eating: Milk Products Health Canada www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/using_food_guide_table1_e.html

Context

Standards

Food standards are necessary to both consumers and food industry. They have been developed to maintain the composition and general quality of a large part of the Canadian food supply and to prevent economic fraud. Without standards, different foods could have the same names or the same foods could have different names. Both situations are confusing and misleading to consumers and create unfair competition.

The International Standards Organization (ISO) and the Standards Council of Canada (SCC) define a standard as a “document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.”

Food *standards of identity* are standards of composition and establish the baseline specifications for quality requirements. Standards of identity define what a given food product is, its name, and the ingredients that must be used, or may be used in the manufacture of the food.

The Codex Alimentarius, (CODEX) has become the seminal global reference point for food standards for consumers, food producers and processors, national food control agencies and the international food trade. Article 1 of its statutes, states that CODEX is to protect the health of consumers and ensure fair practices in the food trade. (The World Trade Organization (WTO) uses CODEX standards to resolve trade disputes.)

Cheese

CODEX² defines *cheese* as “the ripened or unripened soft or semi-hard and extra hard product, which may be coated, and in which the whey protein/casein ratio does not exceed that of milk, obtained by:

- a) Coagulating wholly or partly the following raw materials: milk and/or products obtained from milk, through the action of rennet or other suitable coagulating agents, and by partially draining the whey resulting from such coagulation; and/or
- b) Processing techniques involving coagulation of milk and/or products obtained from milk which give an end-product with similar physical, chemical and organoleptic characteristics as the product defined under (a)

Ripened cheese is cheese, which is not ready for consumption shortly after manufacture, but which must be held for such time, at such temperature, and under such other conditions as will result in necessary biochemical and physical changes characterizing the cheese in question.

² Codex Stan A-6-1978, Rev.1 1999, Amended 2003 Codex General Standard for Cheese

Mould ripened cheese is a ripened cheese in which the ripening has been accomplished primarily by the development of characteristic mould growth throughout the interior and/or on the surface of the cheese.

Unripened cheese including fresh cheese is cheese, which is ready for consumption shortly after manufacture.”

Canada

Legal Requirements for Milk and Cheese

The Acts that relate to Dairy Products are the Food and Drugs Act and the Canada Agricultural Products Act, with their related regulations.

Food and Drugs Act³

The Food and Drugs Act deals with foods, drugs, cosmetics and therapeutic devices applicable to Canadian imports and inter-provincial trade. For foods, it gives general regulations in respect to their manufacture, preparation, preservation, packaging processes and storage, followed by specific details for each. It also covers standards for labelling, packaging, distribution and classification. It also details methods for administration and enforcement.

The Food and Drugs Act defines food in Section 2 as:

"food"
« *aliment* » "food" includes any article manufactured, sold or represented for use as food or drink for human beings, chewing gum, and any ingredient that may be mixed with food for any purpose whatever;

The Food and Drugs Act Section 30 (1) provides for the statutory basis for prescribing the ingredients that may be used in production of food sold in Canada as well as the standards such food must meet. It provides for the Governor in Council to make regulations for carrying the purposes and provisions of this Act into effect, and, in particular, but without restricting the generality of the foregoing, may make regulations

- a) declaring that any food or drug or class of food or drugs is adulterated if any prescribed substance or class of substances is present therein or has been added thereto or extracted or omitted there from;

³ Source: <http://laws.justice.gc.ca/en/F-27/61279.html>

Updated to August 31, 2004

- b) respecting
 - (i) **the labelling and packaging and the offering, exposing and advertising for sale of food**, drugs, cosmetics and devices,
 - (ii) **the size, dimensions, fill and other specifications of packages of food**, drugs, cosmetics and devices,
 - (iii) **the sale or the conditions of sale of any food**, drug, cosmetic or device, and
 - (iv) the use of any substance as an ingredient in any food, drug, cosmetic or device, to prevent the purchaser or consumer thereof from being deceived or misled in respect of the design, construction, performance, intended use, quantity, **character, value, composition, merit or safety** thereof, or to prevent injury to the health of the purchaser or consumer;
- c) prescribing standards of composition, strength, potency, purity, quality or other property of any article of food, drug, cosmetic or device;

The Food and Drugs Act and Regulations are major pieces of consumer protection legislation. The Act provides for the enforcement of standards defined in regulations.

6. (1) Where a **standard** for a food has been prescribed, no person shall
- (a) import into Canada,
 - (b) send, convey or receive for conveyance from one province to another, or
 - (c) have in possession for the purpose of sending or conveying from one province to another

any article that is intended for sale and that is likely to be mistaken for that food unless the article complies with the prescribed standard.

6. (3) Where a **standard** for a food has been prescribed, *no person shall label, package, sell or advertise any article that*
- (a) has been imported into Canada,
 - (b) has been sent or conveyed from one province to another, or
 - (c) is intended to be sent or conveyed from one province to another
- in such a manner that it is likely to be mistaken for that food unless the article complies with the prescribed standard.*

Food and Drugs Regulations

The Food and Drugs Regulations outline the standards of composition, strength, potency, purity, quality or other property of food (and drugs), which include dairy products.

The Food and Drugs Regulations cover essential composition and baseline quality factors to ensure that the consumer will not receive a product below a minimum acceptable standard and that *the nutritional quality is maintained*. Provisions concerning food additives and

contaminants and hygiene are included for health and safety of consumers. Other regulations can be enacted but they must have higher quality standards⁴.

Division 8 of the Food and Drugs Regulations describes the regulations for Dairy Products.

The Food and Drugs Regulations define cheese as the product made by coagulating milk, milk products (as defined in B.08.001.1) or a combination thereof with the aid of bacteria to form a curd and forming the curd into a homogeneous mass after draining the whey and possess the physical, chemical, and organoleptic properties typical for the variety.

Canada Agricultural Products Act

The Canada Agricultural Products Act is an act that details Canadian administrative regulations regarding the grading and marketing of agricultural products as they apply to import, export and inter-provincial trade. It also provides exact requirements for using national trademarks for agricultural products and for selling these products on those three markets.

The Canada Agricultural Products Act⁵ defines “grade name” as a prescribed name, mark or designation of a category and includes a *standard* prescribed for an agricultural product. Section 15 of the Act states that every agricultural product legend and *every grade name* is a national trade-mark and exclusive property in the trade-mark. In Section 32 on regulations the Act states that the Governor in Council may make regulations for carrying out the purposes and provisions of this Act and prescribing anything that is to be prescribed under this Act and, without limiting the generality of the forgoing, may make regulations

- a) prescribing agricultural product legends and grade names and generally respecting agricultural product legends, grade names and other labels
- f) establishing grades and standards, including standards of wholesomeness, for agricultural products and establishing standards for containers.

There is no provision in the Canada Agricultural Products Act for the setting of ‘standards of identity’.

Dairy Products Regulations

The Dairy Products Regulations are regulations, which detail the standards of the Canadian Dairy industry with regard to import, export and domestic trade. Requirements for the registration of dairy related establishments, as well as maintenance of these establishments, are provided. The regulations cover classification of grades, grade names, and product names for standardized products including cheese.

⁴ Claudette Dalpe Associate Director and Dennis Lein Senior Advisor Health Canada Food Regulatory Programs and Access to Information telephone conversation April 5, 2005.

⁵ Canada Agricultural Products Act R.S., 1985, c. 20 (4th Supp.) Updated August 31, 2004
<http://laws.justice.gc.ca/en/C-0.4/10049.html>

The Dairy Products Regulations reference the Food and Drugs Act in several sections. Section 2.2 (Health and Safety) (1) (Subject to subsections (2) and (3),) no person shall market a dairy product in import, export or inter-provincial trade as food unless the dairy product (b) is not contaminated⁶; (e) meets all other requirements of the Food and Drugs Act and the Food and Drugs Regulations with respect to the dairy product. A dairy product may be graded only if it meets the requirements of the Food and Drugs Act and Regulations there under (Section 4 (e))

There are differences in the ingredients allowed between the Food and Drugs Regulations and the Dairy Products Regulations. As indicated above the Dairy Products Regulations prohibit contamination in 2.2 (1). Contamination is interpreted in the Dairy Products Regulations as including food additives and ingredients regulated by the Food and Drugs Act. The Food and Drugs Act and Regulations stipulate the ingredients and the food additives that can be added to standardized cheeses.

National Dairy Code 1997 Amended November 2002

The National Dairy Code has been developed by a Federal Provincial Committee, established under the Integrated Canadian Food Inspection System. The National Dairy Code outlines best practices for production and processing of dairy products. The section of Cheese and Cheese Products provides for descriptions for cheeses. These descriptions and specifications are at variance with the Food and Drugs Regulations (and the Dairy Products Regulations).

Consumer Packaging and Labelling Regulations

The Consumer Packaging and Labelling Regulations govern consumer packaging and labelling of products for import, export and inter-provincial trade in Canada.

The Canadian Food Inspection Agency Act

The Canadian Food Inspection Agency Act is an act to establish the Canadian Food Inspection Agency. The responsibilities of the organization are set out in Section 11 of the act and are as follows:

- 11. (1)** The Agency is responsible for the administration and enforcement of the *Agriculture and Agri-Food Administrative Monetary Penalties Act, Canada Agricultural Products Act, Feeds Act, Fertilizers Act, Fish Inspection Act, Health of Animals Act, Meat Inspection Act, Plant Breeders' Rights Act, Plant Protection Act and Seeds Act.*

⁶ *Contaminated* in respect of a dairy product, means containing, for any reason whatsoever, a chemical, drug, *food additive*, heavy metal, industrial pollutant, *ingredient*, medicament, microbe, pesticide, poison, toxin or any other substance not permitted by, or in an amount in excess of the limits prescribed under or regulated by the Canadian Environmental Protection Act 1999, the Food and Drugs Act and the Pest Control products Act. Interpretation Section 2 Dairy Products Regulations

Consumer Packaging and Labelling Act

11. (2) The Agency is responsible for the enforcement of the *Consumer Packaging and Labelling Act* as it relates to food, as that term is defined in section 2 of the *Food and Drugs Act*.

Food and Drugs Act

11. (3) The Agency is responsible for
- a) the enforcement of the *Food and Drugs Act* as it relates to food, as defined in section 2 of that Act; and
 - b) the administration of the provisions of the *Food and Drugs Act* as they relate to food, as defined in section 2 of that Act, except those provisions that relate to public health, safety or nutrition.

Role of Minister of Health

11. (4) The Minister of Health is responsible for establishing policies and standards relating to the safety and nutritional quality of food sold in Canada and assessing the effectiveness of the Agency's activities related to food safety.

Composition determines the nutritional quality of food

**Health Canada's mission is
to help the people of Canada maintain and improve their health**

Nutritional Value

The World Health Organization (WHO) has noted that *it is the foods themselves, not the specific nutrients in the foods, which creates the beneficial effects on health*. This is particularly true for milk and milk products made from milk.

- Milk has many bioactive properties. These bioactive properties are also present in cheese made from milk. It is the food itself, not the presence of specific nutrients in the foods, which creates the beneficial effects of milk and products made from milk on health. It is not known what the specific bioactive components are.
- The Dietary Approaches to Stop Hypertension, DASH, a diet high in fruits and vegetables and dairy products (3 servings of milk or equivalent dairy product) normalizes blood pressure in borderline hypertensive adults⁷
- The DASH diet produces a significant reduction in homocysteine⁸. This reduction was due to the 3 servings of milk and milk products (made from milk). The control

⁷ Appel LJ et al. 1997 A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. N Engl J Med. 336:1117-1124

and a diet high in fruits and vegetables without milk both increased homocysteine levels, a cardiac risk factor⁹.

- The DASH also significantly reduced total and LDL cholesterol. The use of low fat milk products also reduced the HDL cholesterol.¹⁰
- Children consuming abundant fruits and vegetables and dairy products had much smaller yearly gains in systolic blood pressure than their counterparts who consumed less dairy products, fruits and vegetables (a yearly gain of 1.72 mm Hg with high intake versus 3.03 mm Hg with low intake). By the time these children reached adolescence they had systolic blood pressure that was 7 mm Hg lower than those with lesser intakes of both fruits and vegetables and dairy products. Adolescents with greater intakes of fruits and vegetables or dairy alone had intermediate levels of systolic blood pressure. Dairy intake –whether regular or low fat had a slightly greater protective effect than intakes of fruits and vegetables. The effects on diastolic blood pressure were slightly weaker; however, the consistency of the findings throughout childhood for both measures is striking.¹¹
- The mechanism by which DASH lowers blood pressure in children is unclear. Fruits and vegetables and milk products are rich in minerals that have been associated with blood pressure reduction, such as calcium, magnesium and potassium, but in this study, controlling for intake of these minerals as well as for total fat and saturated fat, failed to explain the reductions in blood pressure.
- The importance of calcium intake during childhood and adolescence cannot be overstated. Peak bone mass is obtained for the most part by our early 20's.^{12,13} Dairy products during childhood and adolescence are key because of their demonstrated persistent long term benefits to bone mass. Low peak bone mass makes one vulnerable to osteoporotic fractures later in life¹⁴
- In the US 73% of calcium intake comes from dairy products. We do not know what the proportion in Canada is until the recent survey has been analyzed, but we know that it is an important source.

⁸ Homocysteine is an amino acid in the blood. Epidemiological studies have shown that too much homocysteine in the blood (plasma) is related to a higher risk of coronary heart disease, stroke and peripheral vascular disease. Other evidence suggests that homocysteine may have an effect on **atherosclerosis** by damaging the inner lining of arteries and promoting blood clots. However, a direct causal link hasn't been established.

⁹ Appel LJ et al. 2000 Effect of dietary patterns on serum homocysteine. *Circulation* 102:852-857.

¹⁰ Obarzanek E. et al. 2001 Effects on blood lipids of a blood pressure-lowering diet: the Dietary Approaches to Stop Hypertension (DASH) Trial. *Am J Clin Nutr* 74:80-89.

¹¹ Moore LL et al. 2005 Intake of fruits, vegetables and dairy products in early childhood and subsequent blood pressure change. *Epidemiol* 16:4-11.

¹² Cadogan J et al. 1997 Milk intake and bone mineral acquisition in adolescent girls: randomized, controlled intervention trial. *Br. Med. J* 315:1255-1260.

¹³ Teegarden D et al. 1999 Previous milk consumption is associated with greater bone density in young women. *Am J Clin Nutr* 69:1014-1017.

¹⁴ Tucker KL 2003 Does milk intake in childhood protect against later osteoporosis? *Am J Clin Nutr* 77:10-11.

- Dairy products are the richest source of conjugated linoleic acid (CLA), a *trans* fat found almost exclusively in foods from animal sources, primarily ruminants. The most active form of CLA is the dominant isomer in dairy fat. Cis-9, trans-11, known as rumenic acid^{15,16}. CLA has been identified as a potent cancer inhibitor.¹⁷ Willet and co-workers¹⁸ suggest that *trans* fat derived from animal sources may be metabolized differently than those *trans* fats derived from vegetable sources. The dominant *trans* fatty acid in milk and milk products is *trans* vaccenic acid, a variable portion of which may be metabolized to CLA.¹⁹

Summary

- Milk and cheese made from milk have bioactive properties that enhance health. It is the milk itself, not the presence of specific nutrients in the milk and in products made from milk, which creates the beneficial effects of milk and products made from milk on health indicators. We do not know what the specific components in milk are.
- Changes in the composition of cheese should not be made unless we have documented demonstrated evidence that the changes will not negatively affect the bioactive components of milk and products made from milk, which in turn will impact the health of Canadians.

¹⁵ Chin SF et al. 1992 Dietary sources of conjugated dienoic isomers of linoleic acid, a newly recognized class of anticarcinogens. *J Food Comp Analysis*, 5:179-185.

¹⁶ Parodi PW 1994 Conjugated linoleic acid: an anticarcinogenic fatty acid present in milk fat. *Aust J Dairy Technol* 49:93-97.

¹⁷ Ip C et al. 1994 CLA, a powerful anticarcinogen from animal fat sources. *Cancer* 74:1050-1054.

¹⁸ Willet WC et al. 1993 Intake of trans fatty acids and risk of coronary heart disease among women. *Lancet* 341:581-585.

¹⁹ Aro A and Salminen I 1998 Difference between animal and vegetable trans fatty acids. *Am J Clin Nutr* 68:918-919.

Changed Dietary Reference Intakes

The Dietary Reference Intakes (DRIs)²⁰ are a comprehensive set of nutrient reference values for healthy populations that can be used for assessing and planning diets. DRIs replace previously published Recommended Nutrient Intakes (RNIs). The DRIs were established by Canadian and American scientists through a review process overseen by the National Academy of Sciences, an independent, nongovernmental body. The DRIs reflect the current state of scientific knowledge with respect to nutrient requirements. The Office of Nutrition Policy and Promotion, Health Canada, ONPP, is using the DRIs to ensure that dietary guidance to Canadians is scientifically sound. The DRIs are being used to assess the nutrient intakes of Canadians. The functional indicators used to establish the DRIs are considered when interpreting the dietary assessment.

The new Dietary Reference Intakes have increased the requirements of calcium, vitamin D, Vitamin B₁₂, magnesium, zinc, phosphorus. Milk and milk products made from milk are important sources of these nutrients.

Recommendations for Adequate Intakes (AIs) for Calcium for Specific Age and Sex Groups recommended in the Dietary Recommended Intakes, 1997, range from 500 mg for infants to 1300 mg for boys and girls to 18 years of age; 1000 mg for adults and 1200 mg for over 50 year olds. See Table for the complete table for calcium in **Annex 1**

The Dietary Reference Intakes (DRIs) for Canadians (see Health Canada website) are used to formulate current Canadian food and nutrition policy and as a basis for dietary advice and guidance by dietitians. Nutrition labelling that will be fully implemented by January 2006 bases % Daily Value on values from the Recommended Dietary Intakes (1983) even though we had a revised Recommended Dietary Intakes in 1990. The following table provides some examples of the differences between the Recommended Dietary Intakes RDI (1983) which form the basis of Nutrition Labelling in Canada and the Dietary Reference Intakes (DRIs 1997-2003)

²⁰ Dietary Reference Intakes, Food and Nutrition Board, Institute of Medicine, National Academy Press, Washington, D.C. The following is a list of published reports:
Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride (1997)
Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Biotin, and Choline (1998)
Dietary Reference Intakes: A Risk Assessment Model for Establishing Upper Intake Levels for Nutrients (1998)
Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium and Carotenoids (2000)
Dietary Reference Intakes: Applications in Dietary Assessment (2000)
Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc (2001)
Dietary Reference Intakes: Proposed Definition of Dietary Fibre (2001)
Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Protein and Amino Acids (Macronutrients) (2002)
Dietary Reference Intakes: Applications in Dietary Planning (2003)
Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate (2004)
Dietary Reference Intakes: Guiding Principles for Nutrition Labeling and Fortification (2003)

Milk and milk products made from milk provide are important sources of the highlighted ingredients.

Under and Over estimates of Vitamins and Minerals Using RDIs²¹ versus DRIs²²
(The full table is found in Annex 2)

| Nutrient | RDI Used on Label 2006 | DRI New Guidance | Difference RDI versus DRI % | Unit |
|-----------------------|------------------------|------------------|-----------------------------|------|
| Vitamin | | | | |
| D | 5 | 15 | -66.7 | µg |
| B₁₂ | 2.0 | 2.4 | -16.7 | µg |
| Riboflavin | 1.6 | 1.3 | +23.1 | µg |
| A | 1000 | 900 | +11.1 | RE |
| Thiamin | 1.3 | 1.2 | +8.3 | mg |
| Magnesium | 250 | 420 | - 40.5 | mg |
| Zinc | 9 | 11 | - 18.2 | mg |
| Calcium | 1100 | 1300 | - 15.4 | mg |
| Phosphorus | 1100 | 1250 | - 12.0 | mg |
| Potassium | | | | |

It is important to note that the value used to determine the % daily value (DV) for Canada's new mandatory nutrition labelling is different from the values from the DRIs. The % DV in the new mandatory labelling over estimates the contribution of calcium, magnesium, phosphorus, zinc, and B₁₂. These are all important nutrients found in milk.

The Canadian Nutrient File is the standard reference for dieticians and other health professionals and is used as a standard reference for assessing dietary intake data. The Canadian nutrient file contains information on at least 20 nutrients for each food.

The importance of cheese

Cheese is part of the Milk Products group in Canada's Guide to Healthy Eating. Cheese is one of the best dietary sources of calcium. A 50 gram (3"x 1"x1") serving of natural cheese made with milk is equivalent to an equivalent amount of calcium in 1 cup of milk (250 mL) or ¾ cup (175g) of yogurt made from milk. Canada's Food Guide to Healthy Eating also indicates that 2 slices of processed cheese (50 g) are also equivalent to 1 cup of milk.

Implications of compositional changes in processed cheese

Recent practical research suggests that 2 slices of processed cheese is no longer equal to 1 cup of milk. Some of the cheese slices currently offered for sale in Canada require 5 (20.8g) slices (104g) to meet the calcium equivalent of 1 cup of milk. Others require 4 (21g) slices while others require 2 (41.7g) slices and another required 2 (31.2g) slices of cheese. It

²¹ Canadian Food Inspection Agency Guide to Food Labeling and Advertising

²² Dietary Reference Intakes, Food and Nutrition Board, Institute of Medicine, National Academy Press, Washington, D.C.

appears that only cheese slices where 2 –31.2g slices are equivalent in calcium to 1 cup of milk (250mL) are made according to the regulations. In one example, these processed named the variety cheese slices were available in April 2005 but were no longer available in May 2005. The product had been reformulated.

Calcium Content Listed on the Label of Selected Processed Cheese Compared to Canadian Nutrient File Data. These refer to cheese labels reviewed in the focus groups. For a detailed comparison table see the Focus Group Report in Appendix 1

| Name of the Cheese product (weight of serving in g as per package) | Calcium mg | Energy kCal | Calcium per 30 g | Energy per 30 g kCal | Number of servings equivalent to 1 cup (250 mL) milk/ 300+ mg Calcium | Energy KCal (2% milk 128 kCal; whole milk 159 kCal) |
|--|------------|-------------|------------------|----------------------|---|--|
| Canadian Nutrient file: 1 slice (31 g) | 191 | 117 | 185 | 113 | 2 | 234 |
| Black Diamond Cheddar slices (21 g) | 77 | 59 | 110 | 84 | 3 | 177 |
| Kraft Grilled Cheese Mild Three Cheese (41.7g) | 198 | 120 | 142 | 86 | 2 | 240 |
| Kraft Singles (31.2g) | 110 | 85 | 106 | 82 | 3 | 255 |
| Velveeta cheese slices (20.8g) | 66 | 57 | 95 | 82 | 5 | 285 |
| Velveeta process cheese (30 g) | 143 | 83 | 143 | 83 | 60 g | 166 |
| Canadian Nutrient File Processed spread cheddar (30 g) (2 Tbsp) | 169 | 88 | 169 | 88 | | |
| Cheez whiz original (30 g 2 Tbsp) | 88 | 74 | 88 | 74 | | |
| Cheez Whiz Tex Mex (30 g 2 Tbsp) | 121 | 82 | 121 | 82 | | |

The Canadian Nutrient File information overestimates the calcium contribution of the above listed processed cheeses. These cheeses appear to be representative of processed cheese that is available to consumers. There has been an erosion in the nutrient contribution of processed cheese. Canadian nutrition surveys consistently show that milk products are under consumed especially among women.^{23, 24, 25, 26, 27}

²³ Gray-Donald K et al. 2000 Food habits of Canadians: Reduction in fat intake over a generation. Cdn J Public Health Sept/Oct: 381:384.

²⁴ Nova Scotia Department of Health. 1993. Report of the Nova Scotia Heart Health Program.

²⁵ Bertrand L 1995 Santé Québec. Rapport de l'enquête québécoise sur la nutrition. 1990 Ministre de la Santé et des Services sociaux, Québec.

²⁶ B.C. Ministry of Health Services, British Columbia Nutrition Survey, Report on Food Group Use. 2004 www.healthservices.gov.bc.ca

What are the implications?

- Without cheese, as an important milk product, achieving adequate calcium intake might be difficult at best especially for those who do not drink milk.
- Without sufficient calcium intake the body is forced to raid the bones to get the calcium it needs.
- Decreased calcium intake will accelerate age-related bone loss and increase osteoporotic fractures.
- Dairy products during childhood and adolescence are key to reaching peak bone mass. Research shows that dairy products have demonstrated persistent long – term benefits to bone^{28, 29}, while those of calcium supplementation³⁰ are transient, disappearing once supplementation is discontinued.³¹
- The diet must meet the threshold of calcium necessary to satisfy the needs of the skeleton, if children are to meet their genetic potential for peak bone mass.³² The erosion of the nutrient content of processed cheese has significant negative implications for children and adolescents as processed cheese has been a milk product option.
- In addition to calcium, milk and cheese (made from milk) provide protein, phosphorus, vitamin D, zinc, and magnesium. All of these nutrients are important for the production of bone matrix and may have positive effects on bone growth and mineralization. Lower nutrient density in processed cheese products may lower the intake of essential nutrients required for bone growth and maintenance.

Carbohydrate in Cheese

The carbohydrate content of cheese is very low ranging from a trace to 1 g in 50 g (1 milk equivalent in Canada's Food Guide for Healthy Eating) of hard cheeses, 2 g in soft cheeses, and up to 4 g in ½ cup (125 mL) of cottage cheese. Process cheese made according to the Food and Drugs Regulations has 1 g in a 31 g slice. Two slices equal a milk equivalent according to Canada's Food Guide for Healthy Eating. Thus a serving of milk products for processed cheese made according to the regulations would have 2 g of carbohydrate.

²⁷ Roebottom BV 2003 Nutrition Newfoundland and Labrador. A Report of a Survey of Residents of Newfoundland and Labrador, 1996. St. John's Newfoundland: Department of Health and Community Services, Province of Newfoundland and Labrador.

²⁸ Teergarden D et al. 1999 Previous milk consumption is associated with greater bone density in young women. *Am J Clin Nutr* 69:1014-1017

²⁹ Kalkwarf H et al. 2003 Milk intake during childhood and adolescence, adult bone density, and osteoporotic fractures in US women. *Am J Clin Nutr* 77:257-265

³⁰ Lee WTK et al. 1996. A follow-up study on the effects of calcium-supplement withdrawal and puberty on bone acquisition of children. *Am J Clin Nutr* 64:71-77

³¹ Lee WTK et al. 1997 Bone mineral acquisition in low calcium intake in children following withdrawal of calcium supplement. *Acta Paediatr* 86:570 -576

³² Black RE et al. 2002. Children who avoid drinking cow milk have low dietary calcium intakes and poor bone health. *Am J Clin Nutr* 76:675-680

Carbohydrate Content of Selected Processed Cheese (label information of cheeses reviewed by the Focus Groups) on the Canadian Market

| Name of the Cheese product (weight of serving in g as per package) | Carbohydrate g | Energy kCal | Carbohydrate per 30 g | Energy per 30 mg kCal | Number of servings equivalent serving of milk product ³³ 314 mg Calcium | Carbohydrate KCal |
|--|----------------|-------------|-----------------------|-----------------------|---|-------------------|
| Canadian Nutrient file³⁴ 1 slice (31 g) | 1 | 117 | 1 | 113 | 2 | 2 |
| Black Diamond Cheddar slices (21 g) | 2.7 | 59 | 3.9 | 84 | 3 | 8.1 |
| Kraft Grilled Cheese Mild Three Cheese (41.7g) | 3.6 | 120 | 2.6 | 86 | 2 | 7.2 |
| Kraft Singles (31.2g) | 3.1 | 85 | 3.0 | 82 | 3 | 9.3 |
| Velveeta cheese slices (20.8g) | 1.8 | 57 | 2.6 | 82 | 5 | 9 |
| Velveeta process cheese (30 g) | 2.9 | 83 | 2.9 | 83 | 60 g | 5.8 |
| Canadian Nutrient File Processed spread cheddar (30 g) (2 Tbsp) | 2 | 88 | 2 | 88 | | |
| Cheez whiz original (30 g 2 Tbsp) | 4.4 | 74 | 4.4 | 74 | | |
| Cheez Whiz Tex Mex (30 g 2 Tbsp) | 2.9 | 82 | 2.9 | 82 | | |

What are the implications of the increased carbohydrate content?

- First, for those who have diabetes and are using Lispro, a fast acting insulin, what are the impacts? It is essential that carbohydrate be counted within 5 g.
- What is the contribution of processed cheese products that are produced without reference to the Food and Drugs Regulations?
- What are the implications for those with lactose intolerance that can eat cheese and cheese products made according to the Food and Drugs Regulations. Are

³³ Canada's Food Guide for Healthy Eating

³⁴ Made according to the Food and Drugs Regulations

they now denied these food choices because of their intolerance when they may have been able to consume them before?

Protein Digestibility

How well or how poorly a protein is digested by the body is an important aspect of protein metabolism.

Digestibility of Some Common Food Proteins³⁵

| Food Source | Protein Digestibility (%) |
|---|---------------------------|
| Egg | 97 |
| Milk and cheese (made from milk ³⁶) | 97 |
| Peanut butter | 95 |
| Meat/ fish | 94 |
| Whole wheat | 86 |
| Soybeans | 78 |
| Rice (polished) | 88 |

1. Casein digestibility is unique.
2. Casein forms a gel in the stomach which digestive enzymes take longer to break down, slowing the transit time in the digestive system and slowing the digestion of protein.
3. The slow down of digestion that is evident with casein also slows down the ingestion of other nutrients including carbohydrates.
4. The impact on children and adults using Lispro, a very fast acting insulin to control blood sugar, could be insulin reaction?
5. Casein is the main milk protein that causes allergies.

Is there an increased concentration of casein in some cheese products? Is the increased casein content contributing to the increase in allergic reactions to milk products observed in adults?

Protein quality refers to how well or how poorly a given protein will be used by the body. Biological Value is one of the most commonly used measures of a protein’s quality.

Biologic Value of Some Common Proteins^{37, 38}

| Protein | Biologic Value |
|--------------|----------------|
| Whey Protein | 104 |

³⁵ Protein Quality Evaluation – Report of the Joint FAO/WHO Expert Consultation, December 1989, FAO, Rome 1991. Table 8, p. 32

³⁶ Cheese made ultrafiltered milk, milk protein concentrate or added casein will have decreased protein digestibility.

³⁷ Normal and Therapeutic Nutrition, 17th Edition Corrine H. Robinson, Marilyn R. Lawler, Wanda L. Cheoweth, and Anne E. Garwick. Macmillan Publishing Company, 1986.

³⁸ National Dairy Council 2000 Newer Knowledge of Dairy Foods. Rosemont IL. Table 17. Adapted from Nutritional Quality of Proteins, European Dairy Association, 1997.

| Protein | Biologic Value |
|-----------------------|----------------|
| Egg | 100 |
| Milk | 93 |
| Rice | 86 |
| Casein, fish and beef | 77 |
| Corn | 72 |
| Peanut flour | 56 |

Note the decreased biologic value of casein.

Summary

- Composition of cheese and cheese products determines their nutrient composition. Standards maintain nutrition profiles of food products. Cheese makes a very important contribution to the nutritional well-being of Canadians. That contribution is even more important with the increased consumption of cheese and the decreased consumption of milk.
- Products on the market that do not meet the Food and Drugs Regulations for cheese and processed cheese products have undermined the knowledge base of consumers and dieticians.
- Products on the market that do not meet the Food and Drugs Regulations for cheese have undermined the frame of reference for cheese in Canada's Food Guide to Healthy Eating.
- Processed cheese products, which are at variance with the compositional standards, if consumed with the expectation of their being nutritionally equivalent and meeting the requirements of the Food Guide could have a negative effect on the health and well being of Canadians.
- Young children, adolescents and seniors are the most seriously affected by the erosion of the nutritional density in processed cheese products: processed cheese, slices, and spreads. Both young children and persons with digestive problems may be negatively impacted if the casein content in cheese is increased, as casein is poorly digested by some.
- Changes in specific ingredients used in cheese will limit choice for some consumers with specific metabolic or digestive problems.

Labels and Labelling

Information about cheese and cheese products is conveyed to the consumer through the label. For consumers to make a choice in the selection of cheese they have to be confident that the information on the label is accurate, clear and readable.

The Food and Drugs Act section 30 (1 c) provides for the Governor in Council to make regulations prescribing standards of **composition, strength, potency, purity, quality or other property of food**. The Act section 6 (3) states with regard to labelling etc of a food that is imported or moved inter-provincially: Where a standards for a food has been prescribed, no person shall label, package, sell or advertise any article that has been sent or conveyed from one province to another, or is intended to be sent or conveyed from one province to another in such a manner that it is likely to be mistaken for that food unless the article complies with the prescribed standard. In B.01.042 of the Food and Drugs Regulations it states: Where a standard for a food is prescribed in this Part (B – Food)

- The food shall contain only the ingredients included in the standard for the food;
- Each ingredient shall be incorporated into the food in a quantity within any limits prescribed for that ingredient; and
- If the standard includes an ingredient to be used as a food additive to that food for that purpose.

Division 8 of the Food and Drugs Regulations outlines the standards of identity for cheese and cheese products.

Section B.08.032 of the Food and Drugs Regulations requires that the labels on standardized cheese show on the principal display panel, a declaration of the actual percentage of milk fat and moisture content in the product.

The Canadian Food Inspection Agency – Guide to Food Labelling and Advertising Section 4.2.2 under qualified descriptive common names of standardized foods states: The common name of a standardized food must **not** be used to describe any food unless that food meets the provisions set in the standard for **composition, strength, potency, purity, quality or other property of food**... When a nutrient content claim is made (i.e. low fat), all applicable criteria, including both composition and labelling requirements, must be met.

A modified common name of a standardized food may not be used to describe a food that does not meet that standard unless the following conditions are met.

- It must always be clear to consumers that the food so described does not meet the standard.
- The consumer is told, in all respects, on the label and in advertisements, the provision(s) which the food does not meet within the standard. This information must always be in evidence in a clear and prominent manner as part of the common name on labels and in advertisements.

Process(ed) Cheese, Process(ed) Cheese Food and Process(ed) Cheese Product

The common name of the standardized food is processed (naming the variety) cheese or processed cheese food. The modified common name used is process(ed) cheese product.

The labelling of the process(ed) cheese product is in our opinion misleading and deceptive. It does not meet the conditions set out in the Canadian Food Inspection Agency Guide to Food Labelling and Advertising and it contravenes the intent of the Food and Drugs Act (section 6) and Regulations (B.01.042).

- It is not clear to consumers that the cheese product does not meet the standard.
- The consumer is not told on the label the provisions which the food does not meet within the standard. There is no evidence to inform consumers in a clear and prominent manner as part of the common name on the labels.

Samples of processed cheese labels:

| Product Name | Ingredients | Per slice | Protein per slice | % DV Calcium | Comments |
|---|--|--|-------------------|--------------|---|
| Kraft Extra Cheddar Process Cheddar Cheese | Cheese (milk, bacterial culture...) | 31.2g 16 slices/ 500g | 6.5g | 17% | Standardized product Moisture and fat on label |
| Kraft Extra Cheddar Processed Cheese Food | Cheese (milk, modified milk ingredients, bacterial culture...) | 16g slice in nutrition facts 16 slices/ 500g on front panel | 3 | 8 | Not a standardized name the variety cheese yet other information on the label would indicate that it is. Moisture and fat on the label |
| Kraft Singles Process Cheese Product | Modified milk ingredients, cheese (milk, modified milk ingredients salt bacterial culture...) | 31.2g 16 slices/500g | 5.0 | 10 | Labelled source of calcium and a good source of protein even though there is less than 7g of protein in a slice. Moisture and milk fat not on label |
| Black Diamond Cheddar Process Cheese Product | Cheese (modified milk ingredients, bacterial culture, salt...) | 21g 24 slices/500g | 3.8 | 7 | Labelled a source of calcium No mention of cheddar cheese in the ingredient list. Contains hydrolyzed soy protein Moisture and fat not on label |
| Kraft Singles Grilled Cheese Process Cheese Product | Modified milk ingredients, Cheese (Cheese, Mozzarella, Cheddar and Monterey Jack[milk, modified milk ingredients sale, bacterial culture | 41.7g 12 slices/500g | 7.5 | 18 | Highlighted cheeses listed in different order than in ingredient list. Labelled a good source of calcium. No moisture and fat on the label |

| Product Name | Ingredients | Per slice | Protein per slice | % DV Calcium | Comments |
|--|---|-------------------------|-------------------|--------------|--|
| Velveeta Processed Cheese Product (slices) | Modified milk ingredients, Cheese (milk, modified milk ingredients, salt, bacterial culture...) | 20.8g 24 slices/500g | 3.4 | 6 | Product front panel looks the same as the front panel for Velveeta block. Made from Cheddar, Mozzarella and Swiss Cheese. No indication of the proportion or order in list of ingredients. Cheese not the primary ingredient. No moisture or fat listed on label |
| Velveeta Process Cheese Product (block) | Cheese (made from milk, modified milk ingredients, bacterial culture...) | 30g | 5.2 | 13 | No indication of the order of cheeses in the ingredient list. Moisture and fat listed on the label |
| Cheez Whiz Original Process cheese product | Modified milk ingredients, Cheese (milk modified milk ingredients, bacterial culture..) | 30g (2tbsp) | 2.9 | 8 | Same price for same size container with Cheez Whiz Tex Mex |
| Cheez Whiz Tex Mex | Cheese (milk, bacterial culture..) | 30g (2tbsp) | 3.6 | 11 | Note the difference in nutrition profile |

Similarly, the comparison of labels of different cheddar cheeses showed great variances. These were examined in the focus group and described in the report in **Appendix 1**

Other cheese labels that were viewed by the participants in the focus groups included samples of cream cheese labels, cold pack cheese label, and labels from grated cheeses. Some of these labels were chosen because of the 'ease of reading'. One was almost impossible to read. The typography and colour contrast on another made reading very easy. There were also two labels of Mozzarella grated cheese. One of these grated cheese products disintegrates when cooked; whereas, the other is stringy and melts. The ingredients used in the manufacture were different but the same name is used on the label. In this instance the performance characteristics were very different.

Conclusion:

- Labels can be very misleading and deceptive confusing consumers;
- Labels of visibly comparable cheeses reveal considerable differences when inspected closely.
- Many labels show poor levels of readability.

Compositional Standards

The Food and Drugs Regulations and the Dairy Products Regulations define cheese as

- the product made by coagulating milk, milk products or a combination thereof with the aid of bacteria to form a curd and forming the curd into a homogeneous mass after draining the whey;
- possessing physical, chemical and organoleptic properties typical of the variety and
- contain maximum percentages of moisture and minimum percentages of fat depending on the variety.

The National Dairy Code’s description of cheese is at variance with the Food and Drugs Regulations and the Dairy Products Regulations in several key areas. The National Dairy Code provides the following description of cheese:

Cheese is the fresh or matured solid or semi solid dairy food obtained

- i. by coagulating milk or milk products or *any* combination of these materials with the aid of bacterial culture, through the action of rennet and/or *other suitable coagulating agents*, and by *partially* draining the whey resulting from such coagulation; or
- ii. *processing techniques involving coagulation and/or concentration of milk and/or material obtained from milk which give an end-product which has the same essential physical, chemical and organoleptic characteristics as the product defined under (i).*

The National Dairy Code definition also deviates from the Codex General Standard for Cheese³⁹.

CODEX defines cheese as

- the ripened or unripened soft or semi-hard, hard and extra hard product, which may be coated, and *in which the whey protein/casein ratio does not exceed that of milk*. The CODEX standard provides for additional processing techniques which give an end product with *similar* physical, chemical and organoleptic characteristics.

Comparison of the milk (ingredients, products) that can be used as ingredients in standardized cheeses: Canada’s Food and Drug Regulations, Dairy Products Regulations and the National Dairy Code.

| Food and Drug Regulations Canada | Dairy Products Regulations Canada | National Dairy Code |
|--|-----------------------------------|-------------------------------|
| Section B.08.003 Milk ^{40, 41} or whole milk | Section 2. | Milk means the normal lacteal |

³⁹ CODEX Stan A-6-1978, Rev. 1-1999, Amended 2003

⁴⁰ Goat’s milk is defined in B.08.028 and .029

⁴¹ Cheese made from milk that is not the normal lacteal secretion of the mammary gland of animals other than the cow, genus *Bos*, shall a) conform to all requirements of Division 8 with respect to the variety; and b) be labeled to show the source of the milk on the principal display panel.

| Food and Drug Regulations Canada | Dairy Products Regulations Canada | National Dairy Code |
|---|---|--|
| <p>a) shall be the normal lacteal secretion obtained from the mammary gland of the cow, genus <i>Bos</i>, and</p> <p>b) shall contain vitamin D in such an amount that a reasonable daily intake of the milk contains not less than 300 International Units and not more than 400 International Units of Vitamin D.</p> <p>“milk product” means With respect to butter, whey butter or cheese, any of the following products, namely,</p> <ol style="list-style-type: none"> 1. Partly skimmed milk⁴², skim milk, cream, buttermilk and whey cream, and 2. Milk in concentrated dried or reconstituted form or any product referred to in subparagraph (I) in concentrated, dried or reconstituted form. <p>with respect to <i>cream cheese spread, cream cheese spread with added ingredients, processed cheese food, processed cheese food with named added ingredients, processed cheese spread, processed cheese spread with named added ingredients, cold-pack cheese food or cold-pack cheese food with named ingredients</i>, any of the following products, namely:</p> <ol style="list-style-type: none"> 1. butter, whey butter and whey, and 2. any product referred to in subparagraph (I) in concentrated or dried form, including whey protein concentrate. | <p>“milk” or “whole milk”, as used in the manufacture of dairy products, means the normal lacteal secretion, free from colostrums, obtained from the mammary gland of an animal.</p> <p>“milk product” means any of the following, namely:</p> <ol style="list-style-type: none"> 1. partly-skimmed milk, skimmed milk, cream, buttermilk, whey, whey cream, and 2. milk in concentrated, dried, <u>frozen</u>⁴³ or reconstituted form and any product named in paragraph (I) in concentrated, dried, <u>frozen</u> or reconstituted form, <u>including butter, butter oil, whey butter, whey protein concentrate and other milk solids</u>; <p>“milk solids”⁴⁴, in respect of a dairy product for which a grade or standard is established under these Regulations means any component of milk, singly or in combination and other than water or casein, that has not been altered in its chemical composition.</p> | <p>secretion of a dairy animal.</p> <p>Also provides for the inclusion of milk products, milk ingredients and modified milk ingredients but NO definitions are provided.</p> |

Comparison among Food and Drug Regulations and Dairy Products Regulations and the National Dairy Code

⁴² Partly skimmed milk, skim milk and butter fat are defined in the Food and Drug Regulations B.08.005, B.08.006 and B.08.007.

⁴³ Underlined text denotes differences from Food and Drug Regulations

⁴⁴ Milk solids interpreted in the Canada Agricultural Products Act – Dairy Products Regulations Interpretation 2 is not included as a ‘milk product’ in the Food and Drug Regulations

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|--|---|
| <p>Whey Cheese</p> <p>Shall</p> <ul style="list-style-type: none"> ▪ be a product made by coagulating whey or concentrated whey with the aid of heat to form a curd and shaping the curd and <p>May contain</p> <ul style="list-style-type: none"> • Microorganisms to aid further ripening • Added milk and milk products, and • Permitted food additives listed in Food and Drug Regulations B.08.036 | <p>Whey Cheese</p> <p>Is</p> <p>the food obtained by the concentration of whey and the molding of the concentrated whey, with or without the addition of milk, milk products and milk fat. The dry matter of the whey cheese includes the water of crystallization of lactose.</p> <p>May contain</p> <ul style="list-style-type: none"> • Milk ingredients and <i>modified milk ingredients</i> • Microorganisms to aid in further ripening • Salt and • Permitted additives |
| <p>Cream Cheese</p> <ul style="list-style-type: none"> • Shall be the product made by coagulating cream with the aid of bacteria to form a curd and forming the curd into a homogenous mass after draining the whey, and • Contain not more than 55 per cent moisture and not less than 30 per cent milk fat, and • May contain <ul style="list-style-type: none"> • cream added to adjust the milk fat content, • salt, • nitrogen to improve spreadability in an amount consistent with good manufacturing practice and • permitted additives | <p>Cream Cheese</p> <ul style="list-style-type: none"> • is the food made from cream <i>and/or milk ingredients and/or modified milk ingredients</i>⁹ with the use of coagulating agents, with or without the use of concentrating processes to form a homogenous mass. • The food shall contain not more than 55% moisture and not less than 30% milk fat. • May contain <ul style="list-style-type: none"> • the following safe and suitable ingredients: milk ingredients and <i>modified milk ingredients</i>⁴⁵, salt, • permitted food additives |
| <p>Cream cheese with (naming the added ingredients)</p> <ul style="list-style-type: none"> • Shall be the product made by coagulating cream with the aid of bacteria to form a curd and forming the curd into a homogenous mass after draining the whey, and • Contain the named added ingredients which shall be one or more of the following ingredients in amounts sufficient to differentiate the product from cream cheese but not in amounts so large as to change the basic nature of the product: <ul style="list-style-type: none"> • cheese other than cream cheese • seasonings, spices, flavouring preparations, condiments or chocolate, | <ul style="list-style-type: none"> • Cream cheese with (naming the added ingredients) Shall contain not more than 60% moisture and not less than 26% milk fat • May contain • milk ingredients and <i>modified milk ingredients</i>⁴⁶, • salt, • vinegar, • sweetening agents, • flavours, • fruits, vegetables, pickles, relishes, nuts, prepared or preserved meat, prepared or |

⁴⁵ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

⁴⁶ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|--|---|
| <ul style="list-style-type: none"> • fruits, vegetables pickles and relishes or nuts • prepared or preserved meats, or • prepared or preserved fish, and • contain not more than 60 per cent moisture, and not less than 26 per cent milk fat and • may contain <ul style="list-style-type: none"> • cream added to adjust the milk fat content • salt • nitrogen to improve spreadability in an amount consistent with good manufacturing practice • permitted additives. | <ul style="list-style-type: none"> • preserved fish and • permitted food additives |
| <p>Cream cheese spread</p> <ul style="list-style-type: none"> • Shall be a product made by coagulating cream with the aid of bacteria to form a curd and forming the curd into a homogeneous mass after draining the whey, and • Contain <ul style="list-style-type: none"> • added milk and milk products • not less than 51 per cent cream cheese • not more than 60 per cent moisture and not less than 24 per cent milk fat • may contain <ul style="list-style-type: none"> • cream added to adjust the milk fat content • salt, vinegar and sweetening agents • nitrogen to improve spreadability in an amount consistent with good manufacturing practice • permitted additives | <p>Cream(ed) cheese spread</p> <ul style="list-style-type: none"> • Shall contain not more than 60% moisture, not less than 24% milk fat and not less than 51% cheese. • May contain <ul style="list-style-type: none"> • milk ingredients and <i>modified milk ingredients</i>⁴⁷, • salt, vinegar, sweetening agents, flavours, • fruits, vegetables, pickles, relishes, nuts, prepared or preserved meat, prepared or preserved fish and • permitted food additives |
| <p>Cream Cheese Spread with (naming the added ingredients)</p> <ul style="list-style-type: none"> • Shall be a product made by coagulating cream with the aid of bacteria to form a curd and forming the curd into a homogeneous mass after draining the whey, and • Contain the named added ingredients which shall be one or more of the following ingredients in amounts sufficient to differentiate the product from cream cheese but not in amounts so large as to change the basic nature of the product: <ul style="list-style-type: none"> • cheese other than cream cheese | <p>Cream Cheese Spread with (naming the added ingredients)</p> <ul style="list-style-type: none"> • Shall contain not more than 60% moisture and not less than 26% milk fat. • May contain <ul style="list-style-type: none"> • milk ingredients and <i>modified milk ingredients</i>⁴⁸, • salt, vinegar, sweetening agents, flavours, • fruits, vegetables, pickles, relishes, nuts, prepared or preserved meat, prepared or preserved fish and • permitted food additives |

⁴⁷ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

⁴⁸ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|---|---|
| <ul style="list-style-type: none"> • seasonings, spices, flavouring preparations, condiments or chocolate, • fruits, vegetables pickles and relishes or nuts • prepared or preserved meats, or • prepared or preserved fish, and • contain not more than 60 per cent moisture, and not less than 24 per cent milk fat and • may contain <ul style="list-style-type: none"> • cream added to adjust the milk fat content • salt, vinegar and sweetening agents • nitrogen to improve spreadability in an amount consistent with good manufacturing practice • permitted additives | |
| <p>Processed (naming variety) Cheese</p> <p>a) Shall</p> <ol style="list-style-type: none"> i. subject to subparagraph (ii) be the product made by comminuting and mixing the named variety or varieties of cheese, other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass with the aid of heat, ii. In the case of processed cheddar cheese, be the product made by comminuting and mixing one or more of the following: <ul style="list-style-type: none"> • cheddar cheese • stirred curd cheese • granular curd cheese, or • washed curd cheese into a homogeneous mass with the aid of heat iii. have where it is made from <ol style="list-style-type: none"> a. one variety of cheese, in which the maximum amount of moisture is less than 40 per cent, or b. two or more varieties of cheese, in which the average maximum amount of moisture permitted is less than 40 per cent a moisture content that does not exceed by more than 5 per cent, the amount referred to clause a or b as the case may be and a milk fat content of not less, by more than 3 per cent, than the minimum milk fat content or average minimum milk fat content permitted for that variety or those varieties, as the case may be | <p>Processed (naming variety) Cheese</p> <p>a) is</p> <ol style="list-style-type: none"> i. the food made by comminuting and mixing the named variety or varieties of cheese <i>and/or optional ingredients and permitted additives</i>⁴⁹ into a homogenous mass with the aid of heat. ii. <i>Processed cheese shall contain not less than 51% milk ingredients of which at least 50% are cheese.</i> iii. The cheese(s) used shall meet the compositional standards of the named variety or varieties. iv. <i>Shall have a total cheese ingredient content of not less than 51%.</i> v. <i>contain not more than 60% moisture, except in the case of fat-reduced processed cheeses, the latter containing a maximum of 65% moisture.</i> <p>b) may contain</p> <ol style="list-style-type: none"> i. <i>milk ingredients and modified milk ingredients,</i> ii. <i>salt, and</i> iii. <i>permitted food additives</i> |

⁴⁹ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|---|--|
| <p>iv. subject to sub paragraph (v), have, where it is made from</p> <ol style="list-style-type: none"> a. one variety of cheese, in which the maximum amount of moisture permitted is 40 per cent or more, or b. two or more varieties of cheese, in which the average maximum amount of moisture permitted is 40 per cent or more <p>a moisture content that does not exceed, by more than 3 per cent, the amount referred to clause a or b as the case may be and a milk fat content of not less, by more than 2 per cent, than the minimum milk fat content or average minimum milk fat content permitted for that variety or those varieties, as the case may be, and</p> <p>v. in the case of processed skim milk cheese, contain not more than</p> <ul style="list-style-type: none"> • 55 per cent moisture, and • 7 per cent milk fat; and <p>b) may contain</p> <ol style="list-style-type: none"> i. water added to adjust moisture content, ii. added milk fat iii. in the case of processed skim milk cheese, added skim milk powder, buttermilk powder and whey powder iv. salt, vinegar and sweetening agents v. permitted additives (listed in Food and Drug Regulations B.08.040) | |
| <p>Processed (naming variety) Cheese with (naming added ingredients)</p> <p>a) Shall</p> <ol style="list-style-type: none"> i. be the product made by comminuting and mixing the named variety or varieties of cheese, other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass with the aid of heat, ii. contain the named added ingredients which shall be one or more of the following ingredients in amounts sufficient to differentiate the product from processed (named variety) cheese but not in amounts so large as to change the basic nature of the product: <ul style="list-style-type: none"> • flavouring preparations other than such preparations that resemble the flavour of the | <p>Processed (naming variety) Cheese with (naming added ingredients)</p> <p>a) Is</p> <ol style="list-style-type: none"> i. the food made by comminuting and mixing the named variety or varieties of cheese <i>and/or optional ingredients and permitted additives⁵⁰</i> into a homogenous mass with the aid of heat. ii. <i>Processed cheese shall contain not less than 51% milk ingredients of which at least 50% are cheese.</i> iii. The cheese(s) used shall meet the compositional standards of the named variety or varieties. iv. <i>Shall have a total cheese ingredient content of not less than 51%.</i> v. <i>contain not more than 60% moisture, except</i> |

⁵⁰ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|---|--|
| <p>varieties of cheese used in the product,</p> <ul style="list-style-type: none"> • seasonings, spices, condiments or chocolate, • fruits, vegetables, pickles, relishes or nuts, • prepared or preserved meat, or • prepared or preserved fish, <p>iii. have where it is made from</p> <ul style="list-style-type: none"> • one variety of cheese, in which the maximum amount of moisture is less than 40 per cent, or • two or more varieties of cheese, in which the average maximum amount of moisture permitted is less than 40 per cent <p>a moisture content that does not exceed by more than 5 per cent, the amount referred to clause a or b as the case may be and a milk fat content of not less, by more than 3 per cent, than the minimum milk fat content or average minimum milk fat content permitted for that variety or those varieties, as the case may be</p> <p>iv. subject to sub paragraph (v), have, where it is made from</p> <ul style="list-style-type: none"> • one variety of cheese, in which the maximum amount of moisture permitted is 40 per cent or more, or • two or more varieties of cheese, in which the average maximum amount of moisture permitted is 40 per cent or more <p>a moisture content that does not exceed, by more than 3 per cent, the amount referred to clause a or b as the case may be and a milk fat content of not less, by more than 2 per cent, than the minimum milk fat content or average minimum milk fat content permitted for that variety or those varieties, as the case may be, and</p> <p>v. in the case of processed skim milk cheese, contain not more than</p> <ul style="list-style-type: none"> • 55 per cent moisture, and • 7 per cent milk fat; and <p>b) may contain</p> <ol style="list-style-type: none"> i. water added to adjust moisture content, ii. added milk fat iii. salt, vinegar and sweetening agents iv. permitted additives (listed in Food and Drug Regulations B.08.040) | <p><i>in the case of fat-reduced processed cheeses, the latter containing a maximum of 65% moisture.</i></p> <p>b) may contain</p> <ol style="list-style-type: none"> i. <i>milk ingredients and modified milk ingredients,</i> ii. salt, vinegar, sweetening agents, iii. flavours, iv. seasonings, spices, condiments, v. chocolate, vi. fruits, vegetables, pickles, relishes, nuts, vii. prepared or preserved meat, prepared or preserved fish and viii. permitted food additives |
| <p>Processed Cheese Food Shall</p> | <p>Process(ed) Cheese Is</p> |

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|---|--|
| <ul style="list-style-type: none"> i. be the product made by comminuting and mixing one or more varieties of cheese other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass with the aid of heat, and ii. contain <ul style="list-style-type: none"> added milk and milk products not less than 51 % cheese not more than 46 % moisture, and not less than 23% milk fat and iii. may contain <ul style="list-style-type: none"> water added to adjust moisture content added milk fat salt vinegar and sweetening agents, and permitted food additives | <ul style="list-style-type: none"> i. the food made by comminuting and mixing the named variety or varieties of cheese <i>and/or optional ingredients and permitted additives</i>⁵¹ into a homogenous mass with the aid of heat. ii. <i>Processed cheese shall contain not less than 51% milk ingredients of which at least 50% are cheese</i> iii. shall contain not more than <i>60% moisture</i>, except in the case of fat-reduced processed cheeses, the latter containing a maximum of 65% moisture. iv. May contain <i>milk ingredients and modified milk ingredients</i>, salt, vinegar, sweetening agents permitted food additives |
| <p>Cold-Pack (naming the variety) cheese Shall</p> <ul style="list-style-type: none"> i. Subject to paragraph (ii), be the product made by comminuting and mixing the named variety or varieties of cheese, other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass without the aid of heat, ii. In the cast of cold-pack cheddar cheese, be the product made by comminuting and mixing one or more of the following: <ul style="list-style-type: none"> i. Cheddar cheese ii. Stirred curd cheese iii. Granular curd cheese, or iv. Washed curd cheese into a homogeneous mass without the aid of heat. iii. contain where it is made from <ul style="list-style-type: none"> a. one variety of cheese, not more moisture and not less milk fat than the maximum moisture content and minimum fat content permitted for that variety, or b. more than one variety of cheese, not more moisture and not less milk fat than the average maximum moisture content and the average minimum fat content permitted for those varieties; and <p>b) may contain</p> <ul style="list-style-type: none"> i. water added to adjust moisture content | <p>Cold-Pack (naming the variety) cheese Shall</p> <ul style="list-style-type: none"> i. be the food obtained by comminuting and mixing the named variety or varieties of cheese into a homogenous mass without the aid of heat. <i>The food shall contain not less than 51% cheese and not more than 46% moisture.</i>⁵² ii. the cheese(s) used shall meet the compositional standards of the named variety or varieties iii. may contain <i>milk ingredients and modified milk ingredients</i>, added water to adjust moisture content and permitted food additives |

⁵¹ Not provided for in the Food and Drug Regulations or in the Dairy Products Regulations

⁵² Not provided for in the Food and Drug Regulations (B.08.041.5 and B.08.041.6) and Dairy Products Regulations 42/43)

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|--|---|
| <ul style="list-style-type: none"> ii. added milk fat iii. salt, vinegar and sweetening agents, iv. permitted additives as listed in Food and Drug Regulations B.08.041.5 | |
| <p>Cold-Pack (naming variety) Cheese with (naming the added ingredients)</p> <p>a) Shall</p> <ul style="list-style-type: none"> i. be the product made by comminuting and mixing the named variety or varieties of cheese, other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass without the aid of heat, ii. contain the named added ingredients which shall be one or more of the following ingredients in amounts sufficient to differentiate the product from cold-pack (named variety) cheese but not in amounts so large as to change the basic nature of the product. <ul style="list-style-type: none"> a. flavouring preparations other than such preparations that resemble the flavour of the varieties of cheese used in the product, b. seasonings, spices, condiments or chocolate, c. fruits, vegetables, pickles, relishes ,or nuts, d. prepared or preserved meat, or e. prepared or preserved fish, and iii. contain where it is made from <ul style="list-style-type: none"> a. one variety of cheese, not more moisture and not less milk fat than the maximum moisture content and one per cent less than the minimum fat content permitted for that variety, or b. more than one variety of cheese, not more moisture and not less milk fat than the average maximum moisture content and one per cent less than the average minimum fat content permitted for those varieties; and <p>b) may contain</p> <ul style="list-style-type: none"> i. water added to adjust moisture content ii. added milk fat iii. salt, vinegar and sweetening | <p>Cold-Pack (naming variety) Cheese with (naming the added ingredients)</p> <p>Shall</p> <ul style="list-style-type: none"> i. be the food obtained by comminuting and mixing the named variety or varieties of cheese into a homogenous mass without the aid of heat. <i>The food shall contain not less than 51% cheese and not more than 46% moisture.</i>⁵³ ii. the cheese(s) used shall meet the compositional standards of the named variety or varieties iii. may contain <ul style="list-style-type: none"> a. <i>milk ingredients and modified milk ingredients</i>¹⁰, b. added water to adjust moisture content and c. permitted food additives |

⁵³ Not provided for in the Food and Drug Regulations (B.08.041.5 and B.08.041.6) and Dairy Products Regulations 42/43)

| Food and Drug Regulation and standardized product in Dairy Products Regulations | National Dairy Code 1997 (amended 2002) |
|---|--|
| <p style="text-align: right;">agents, iv. permitted additives as listed in Food and Drug Regulations B.08.041.6</p> | |
| <p>Cold-Pack Cheese Food Shall</p> <p>i. be the product made by comminuting and mixing the named variety or varieties of cheese, other than cream cheese, cottage cheese or whey cheese, into a homogeneous mass without the aid of heat,</p> <p>ii. contain</p> <p style="padding-left: 20px;">a. added milk and milk products b. not less than 51 % cheese c. not more than 46 % moisture, and d. not less than 23 per cent milk fat; and</p> <p>may contain</p> <p style="padding-left: 20px;">a. water added to adjust the moisture content, b. added milk fat, c. salt, vinegar and sweetening agents, and d. permitted food additives</p> | <p>Cold- Pack Cheese</p> <p>Shall</p> <p>i. be the food obtained by comminuting and mixing the named variety or varieties of cheese into a homogenous mass without the aid of heat.</p> <p>ii. The food shall contain not less than 51% cheese and not more than 46% moisture.</p> <p>May contain</p> <p style="padding-left: 20px;">a. <i>milk ingredients and modified milk ingredients</i>¹⁰, b. added water to adjust moisture content and permitted food additives</p> |

CODEX individual standards for cheese are consistent with Canada's Food and Drug Regulations. Section 28 (2) of the Dairy Products Regulations states that "a cheese variety (named in Table 1 of the Regulations) shall meet any standard developed for that cheese as accepted by Canada, that is published in "Recommended International Standards for Cheese and Government Acceptances" issued by the Secretariat of the Joint FAO/WHO Food Standards Program (No. KAC/CI – C25 of CAC/CI-C25 (1972)⁵⁴. CODEX is the FAO/WHO food standards organization. Canada accepted some of the international (CODEX) cheese standards in the 1970's. The acceptance of these standards has never been cancelled. Yet, no one at CFIA was able to provide information as to which of the CODEX standards had been accepted. Information from the Canadian CODEX secretariat has similarly not been forthcoming.

The United States sets out 'standards of identity' for Cheese and Cheese Products in the Food Drugs and Cosmetic Act⁵⁵. The United States describes each cheese separately (prescriptive) rather than putting varietal cheeses in one group. The United States standards for cheese are similar to Canada's Food and Drugs Regulations. Both the Dairy Products Regulations and the National Dairy Code descriptors for both varietal and processed cheese are at variance with the cheese standards in the United States.

⁵⁴ Canada Agricultural Products Act: Dairy Products Regulations Part II International and Interprovincial Trade Section 28 (2).

⁵⁵ Code of Federal Regulations, Title 21, Volume 2 Food and Drugs Part 133 Cheese and Cheese Products

The definition of what constitutes a milk product is different between the Food and Drugs Regulations and the Dairy Products Regulations. The definition in the Food and Drugs Regulations is consistent with the definitions in the Cheese and Related Cheese Products Standards in the United States and with the Codex individual standards for cheese.

The Canadian Food Inspection Agency Dairy Products staff were unable or unwilling to provide a list of what would be considered a milk solid that had not been chemically altered and thus permissible if the Dairy Products Regulations were used.

How can fraudulent practices be controlled and regulations enforced if the regulators cannot provide comprehensive answers to what ingredients are permitted?

The Canadian Food Inspection Agency Dairy Products staff was unable or unwilling to provide the criteria or the indicators that would objectively demonstrate that the Dairy Products Regulations raised the bar and provides an enhanced 'standard of identity'.

The National Dairy Code does not define milk products or modified milk ingredients. The National Dairy Code if followed would erode the nutritional profile for cheese and would significantly impact expected performance characteristics.

The preamble to the Canadian Food Inspection Agency Act 1997 states:

*WHEREAS the consolidation of those services (inspection and related services for food and animal and plant health) under a single food inspection agency will contribute to **consumer protection and facilitate a more uniform and consistent approach to safety and quality standards** and risk-based inspections systems.*

Consumers were shocked when they learned that a Regulatory Impact Analysis Statement (R Carberry 1998-04-15) referred **to industry as clients**. *The Dairy Products Regulations have been amended in conjunction with modifications to the dairy program that were negotiated between the Canadian Food Inspection Agency (CFIA) and **its clients** whose activities are regulated under the Canada Agriculture Products Act.* In the same regulatory impact statement the Consumers Association of Canada, representing the consumer interest, expressed concerns that changes made through the CFIA Business Alignment Project (BAP) would adversely affect **quality** and safety of food in Canada. Consumers have the right to be heard. CFIA is mandated to protect consumers and ensure quality standards.

Consumers have the right to be informed and to be protected. The Government of Canada has the responsibility to protect the consumers and ensure quality standards.

Definitions

What are the definitions?

The Food and Drug Regulations in Division 1 define class or common names for ingredients or components B.01.010 (3) Item 7, 7.1 and 7.2.

7 Milk Ingredients any of the following in liquid, concentrated, dry, frozen or reconstituted form, namely butter, buttermilk, butter oil, milk fat, cream, milk, partially skimmed milk, skim milk, and any other component of milk the chemical composition of which has not been altered and that exists in the food in the same chemical state in which it is found in milk.

7.1 Modified Milk Ingredients

Any of the following in liquid, concentrated, dry, frozen, or reconstituted form, namely calcium-reduced skim milk (obtained from the ion exchange process), casein, caseinates, cultured milk products, milk serum proteins, ultrafiltered milk, whey, whey butter, whey cream and any other component of milk the chemical state of which *has been altered* from that which it is found in milk.

7.2 Modified Milk Ingredients

one or more ingredients or components set out in item 7 combined with any one or more ingredients or components set out in item 7.1.

“Milk Solids” are described in the Dairy Products Regulations as any component of milk, singly or in combination and other than water or casein that *has not been altered in its chemical composition*.

We were not able to find out what constitutes a ‘milk solid that has not been chemically altered’ from the regulators. Consumers have the right to be informed. Consumer trust is lowered when the regulators cannot define what is included in terms in regulations.

Is milk protein concentrate considered a milk solid under this definition?

Ultrafiltered milk is not permitted as an ingredient by either the Food and Drugs Regulations or the Dairy Products Regulations. Ultrafiltered milk is defined in the Food and Drugs Regulations as a modified milk ingredient; that is an ingredient *that has been chemically changed*. Ultrafiltration is the preferred method employed to extract milk proteins used in the manufacture of milk protein concentrate. Ultrafiltration removes minerals (calcium and magnesium). Milk is an important source of riboflavin, a water soluble vitamin, which may be lost as well. A wide variety of milk protein concentrates is available with different chemical composition. It would appear that milk protein concentrates are not a milk solid under the Dairy Products Regulations as they have been chemically changed and different compositions are available. This has not been confirmed.

Under the Dairy Commission website there is a link to MILKingredients.ca. This site provides ingredient profiles. The profile for Milk Protein Concentrate indicates that milk protein concentrate cannot be used in Canada as an ingredient in the production of cheeses which

are regulated by federal standards of identity (e.g. cheddar cheese). However small quantities may be incorporated in the starter cultures that are used in cheese making.⁵⁶

It is impossible to tell from the label of 'standardized cheese' whether it is actually a 'standardized' cheese.

Summary

- The current use of inclusive terms in the labelling of ingredients is not helpful to consumers.
- The lack of information available from regulators erodes trust in the regulatory system.
- The inability to know whether a product meets the compositional standards from the label is a major cause of concern.

Consumers have the right to have the nutritional profile of major classes of food protected. Cheese is a major class of food. The Government of Canada is responsible.

Focus group findings

Consumer input was gleaned from focus groups. Focus group input was designed to provide information on buying practices of foods with a focus on cheese and then to provide considered opinion on cheese standards: whether they provide any consumer protection and whether they are necessary. The detailed facilitator's guide is contained in **Appendix 1.a**. The participant's guide is contained in **Appendix 1.b**. Trained facilitators and recorders were used. The facilitator's guide and the power point presentation were designed to maximize a neutral presentation of the issues.

Focus groups were conducted in Penticton, Winnipeg, Fall River (just outside Halifax), Toronto and Montreal during April and May 2005. Participants for each focus group included male and female participants representing youth (18 -22), young adults with families, middle aged and senior adults. Participants had a wide range of income with some in the very low income range. Included were people who lived alone as well as those who shopped and prepared food for their family. Participants came from a range of educational levels. Some participants had allergies or other specific health condition; others had disabilities and were on disability allowance. Some had a wide experience with cheese; others had less.

The detailed report on the focus groups can be found in **Appendix 1**

⁵⁶ MILKingredients.ca Milk Protein Concentrate
www.milkingredients.ca/dcp/article_e.asp?caid=145&page=1441

Characteristics of Cheese

Participants in the focus groups thought that cheese was made from milk. They consider milk to be the key ingredient in cheese. The focus group participants were shocked when they saw the term 'modified milk ingredients' and demanded clarification.

All focus groups participants were adamant that cheeses identified by a varietal name should have all of the characteristics of a cheese of that variety. These included not only the taste and texture but the functional and performance characteristics. The cheese should melt, or brown, or be stringy when cooked, or crumble ... depending on the characteristics of a particular cheese. Consumers want to have confidence that when they purchase a particular variety of cheese that it will taste, smell and have the texture of that cheese and that it will perform the same way each time that they purchase that same variety. Participants had story after story of their experiences and frustrations with the lack of consistency with some of the cheeses that they had purchased. Marked changes in taste, texture, performance and functional characteristics were described:

- *You can't stir it into a sauce. It all just sticks to the spoon.*
- *The texture is rubbery.*
- *It looks and tastes like plastic.*
- *The texture of cheddar is grainy, mealy, gritty*
- *I bought this big block of cheddar and it just bent all the way and bounced back.*
- *I like the cheese to be there when I finish cooking.*
- *Mozzarella isn't stringy. Mozzarella should be stringy. It shouldn't all come off the pizza in one blob.*
- *You can't make cheese au gratin with it.*
- *It won't brown?*
- *It disappears when you cook it?*
- *Isn't there supposed to be some cheese left when you cook store bought pizza?*
- *Some cheddar tasted so bad that I threw it out.*
- *It's horrible when I buy cheese and pay a lot of money for it and it tastes bad or the texture is awful. I am on a limited budget and I can't afford to throw it out.*
- *The 'stuff' sticks to the packaging?*
- *You can't judge the taste, texture and performance by the price. Some poor 'quality' cheese are as high or higher priced than cheese that tastes and acts like cheddar or Mozzarella.*
- *The cheese moulds more quickly than it used to.*

Some of the participants thought that they may have placed the cheese in the wrong place in the refrigerator or that they may have left it too long in the trunk of the car and that was why it

tasted off and performed so poorly in recipes. Some seniors felt that their taste change was responsible for the observed taste change in cheese.

Cheeses that were tasted during the focus group sessions allowed participants to experience various tastes and textures. Without exception, cheeses that had unexpected flavour and texture characteristics for the named variety cheese had modified milk ingredients on the label. Consumers described textures in cheeses with modified milk ingredients as grainy, mealy, gritty... and the flavour after tastes were not as pleasing as the cheeses made with milk and no modified milk ingredients.

Participants in the focus groups wanted the Food and Drugs Regulations for cheese and cheese products to be enforced. The Food and Drugs Act is seen as a major piece of consumer protection in the area of foods. The ingredients for making cheese in the Food and Drugs Regulations are clear. The use of the term 'milk solids' in the Dairy Products Regulations caused consumer concern because no one knew what it was? The CFIA regulators could not provide information about what would be included under that definition. If the regulators don't know, then consumers have no way of knowing. It is unacceptable to have regulations that cannot be interpreted. There was concern that whatever these ingredients were, they were the cause of the negative changes consumers observed in Canadian cheeses. Consumers have the right to be informed.

Standards of Identity for Cheese

All participants at the focus groups rejected outright the section in the National Dairy Code on Cheese. Reasons for the rejection include but are not limited to the following:

The descriptors

- are at variance with the federal regulations
- are at variance with international standards
- are not in the consumer interest
- were developed outside the legislative and regulatory process and without due process and consultation

The reactions by the participants in the focus groups to the development of a National Code that contravened Government of Canada regulations were: enraged, how dare they, astounded, concerned, angry, disillusioned, flabbergasted, astonished, disheartened, deceived and disempowered.

Without exception, the focus groups participants want standards of identity for cheese, cream cheese and processed cheese to be federally regulated. Standards of identity are important pieces of consumer protection legislation. For the consumer

- Food (quality, composition and safety) standards provide confidence that the products have specific characteristics and properties that conform to established recognized standards.

- Standards give consumers information concerning the specific character of products.
- Standards of identity provide confidence that the food products meet specific nutritional parameters.
- Standards for food products protect product names from misuse and imitation by food products that do not meet the compositional and quality standard.
- Standards of identity for food promote honesty and fair dealing in the interest of consumers⁵⁷.

Labels and Label Reading

An in-store review was conducted to determine the available types of cheese. Cheese labels were chosen for a wide variety of reasons:

- Cheeses that met the Food and Drugs Regulations;
- Cheeses of a similar type where the labels were suggestive that ingredients (not provided for in the Food and Drugs Regulations) were ingredients in the cheese.;
- Processed cheeses and for cold-pack cheese;
- Labels that did not provide information about the milk fat and the moisture on the front panel were included.
- Products that were different from each other but their labels looked the same to assess consumer reaction to having a product appear to be the same or similar to another product and then to learn by carefully reading the label that there were significant differences.
- Labels that listed major components on the front panel in a different order than in the ingredient list.
- Labels that showed the variation in serving sizes among products of a similar nature.

A review of labels was undertaken in several communities in Canada in close proximity to where focus groups were held to determine the similarities and differences in presentation, varieties and choice available. For further detail and a table comparing the different cheeses selected for the tests, please see the Focus Group Report in **Appendix 1**.

Consumer label reading practices ranged from always to never. If participants purchased a particular brand they seldom re-read the label.

Participants were asked to look at the components of a label beginning with the front panel. The name/variety of cheese, the brand, the moisture and fat content are all part of the front panel. For some labels there was other information on the front panel as well. Some of the

⁵⁷ U.S. Food Drugs and Cosmetic Act <http://www.fda.gov/opacom/laws/fdact/fdact4.htm>

labels did not identify moisture and fat content. Many participants were unaware of why moisture and fat percentages are on the front panel of cheese labels.

Participants did not distinguish between processed cheeses. Processed cheese is made by blending cheese. In their minds there is also no difference between processed cheese (food) and processed cheese product. All are processed cheese foods.

The ingredient listing and nutrition panel were also discussed. A generic nutrition facts panel was distributed and participants were told that as of January 2006 pre-packaged foods will have nutrition facts presented in this format. On the labels on cheese and processed cheese products nutrition facts were presented in different formats.

The Front Panel

Reactions:

- Consumers did not know that reporting moisture and milk fat content on the front panel was mandatory. Labels without the moisture and milk fat content on the front panel were found. – Consumers want this information standardized.
- Consumers did not differentiate between processed cheese and process(ed) cheese product – all processed products are understood to be processed cheese.
- Front label information was found to be inconsistent with other information on the label.
- Calcium claims were inconsistent through a brand group with the processed cheese products having the least calcium labelled as a 'source of calcium'.

Suggestions for the front panel:

- Milk fat and moisture information should be mandatory on all cheese products and should be in a standard position in the same order and adjacent.
- Front panel information must be consistent with information on the other parts of the label. Highlighted ingredients should be listed in the same order as in the ingredient list. All highlighted ingredients should be listed in the ingredient list. Failure to do so is misleading to the consumer.
- Quantitative ingredient labelling should be used for all highlighted ingredients as well as the primary ingredients in the ingredient list.
- Non-standard products that do not meet the nutritional profile of standardized cheese must be called something other than "cheese".
- Identification of any performance criteria that cannot be met (e.g. it won't melt)

Ingredient List

Participants

- Indicated that they read the ingredient list especially if they or members of their families had allergies, other health or weight issues.
- Expected cheese to be made from milk.
- Expected processed cheese to be made from cheese.
- Do not understand inclusive terms like 'modified milk ingredients'.
- Labels with 'May contain' statements are not considered adequate by consumers.

Suggestions for ingredient list

- Non standardized products should clearly identify all components of the ingredients that are not allowed in the compositional standards in the Food and Drugs Regulations for cheese and cheese products.
- QUID (Quantitative Ingredient Declaration) labelling of ingredients
- Any components in addition to milk that have casein, casein levels should have to be labelled because of sensitivities and intolerances to casein. This is a health issue and requires labelling.

Nutrition Panel

Participants' reactions

- Many participants use the nutrition panel
- Consumers are looking for information on calcium, sodium, protein and fat content in cheese and cheese products.
- Products containing ingredients not listed in the compositional standards do not provide standard amounts of nutrition for a standard serving. This is confusing for consumers.
- Changed ingredients in products used as cheese can have serious impacts on population health
- Increasing intake to attain the necessary amount of calcium and/or protein can result in increased caloric intake.

Suggestions for Nutrition Panel

- Serving size should bear some relation to the product. (As of January 1 the serving size for cheese is standardized as 30 g)
- Standardize nutritional levels for the serving size.
- Nutritional qualities should always appear in the same order and use the same measurement.
- Products that do not meet the compositional standards should clearly identify that they do not deliver standard levels of nutrition.

- There is a need for a comprehensive educational initiative for consumers if non-standardized processed cheese products are allowed to remain on the market. The nutrition provided in a serving is not equivalent to the nutritional recommendations given in Canada's Food Guide to Healthy Eating.

Summary

- The label is the primary source of information for the consumer.
- Cheeses that meet the standards of identity must use the 'standard of identity' name.
- Cheeses that do not meet the standards in every respect must be called by a name that cannot be mistaken for the standardized cheese. These cheeses must not use the standardized cheese name nor the word 'process' or 'processed' in their description if they do not meet the standards of identity for either the named variety cheese or for processed cheese (either process name the variety cheese or processed cheese) whether solid, slices, or spread.
- Consumers do not differentiate between a processed cheese food and a processed cheese product. These terms are confusing to consumers. Furthermore when the regulators were asked for clarification there was no answer forthcoming.
- Only cheese made from milk from mammals should be labelled cheese. All imitation products should be called by another name.
- Features of the label such as placement, language, punctuation, typography and grammar influence how consumers interpret label information. Statements on food labels are sometimes qualified. Consumers may be misled if the qualification is in fine print, is presented in poorly contrasting print and background, or is placed in a location where consumers are unlikely to notice it.
- Label information should be the same in English and in French.

Consumers have the right to be informed, not misled or deceived.

Dietitians and nutritionists responsible for educational efforts related to Canada's Food Guide for Healthy Eating were interviewed for this research. Their reaction was that the current situation is creating: **consumer confusion and a dietitian's dilemma.**

Why is there confusion and dilemma.

- Changes in composition changes the nutritional profile of the cheese
- Standard rules for substitution to maintain daily nutritional values do not apply when named products do not follow a standard. Two slices of processed cheese no longer equal a cup of milk for the milk products group of Canada's Food Guide

for Healthy Eating. One slice of processed cheese used to have 7 g of protein – 1 diabetic meat exchange. Current slices have 3.4g, 5 g, 3.8 g, 7.5 g. All diabetic teaching materials and patient education materials equate 1 slice of processed cheese to one meat exchange. The implications are obvious!

- Items not specifically listed but included in the inclusive term 'modified milk ingredients' may be creating dietary problems for some consumers.
- Regulators cannot provide information on what is actually in some of these non standard ingredients.

Consumers participating in the focus groups were bewildered.

- *Are these products contributing to a society that is overfed and undernourished?*
- *We want to know what we're buying.*
- *Manufacturers change whenever they feel like it and catch consumers out!*
- *I don't know what to tell my clients with Diabetes in class tomorrow?*

New Products and Innovation

Choice is a basic consumer right BUT it should be informed choice and for that consumers need information.

Participants were not opposed in principal to new products and processes. Innovative products and ingredients support marketplace choice BUT because these are food products, they should be examined by Health Canada using the 'precautionary approach' to ensure that the introduction or continuation of these products in the marketplace will not have a negative impact on general nutrition and population health.

Innovative products and ingredients should be identified. - These products are not standardized cheeses. They cannot be called by the standardized cheese name. If they do not meet the nutritional profile for cheeses or cheese products of that type they should **not** be called cheese. The products should be promoted for what they are. The consumer must not be misled or confused. The products must not be deceptive. The products should succeed or fail based on quality, performance and nutritional value.

Price

Practical research has shown that price is not a determining factor between cheeses that meets the Food and Drugs Regulations standards for cheese and those which do not. In fact some of the cheeses made with modified milk ingredients were higher in price than the standardized product.

Few examples of the grade label were found. The ingredient list on those cheeses with the grade label were not in compliance with Section 4(e) of the Dairy Products Regulations which states that a dairy product may be graded only if it meets the requirements under the Food

and Drugs Act and Regulations there under. These products did not meet the Dairy Products Regulations, and were priced as high as or higher than other products which were of superior quality.

- There was an expectation among participants of good nutritional value for money but this expectation was not always fulfilled.
- Price was an issue for most participants BUT they wanted value for price and were willing to spend more for cheese of a higher quality. Unfortunately it is impossible to judge quality in the marketplace.
- Consumers did not put a price on health.

Rewarding Quality

Participants indicated that they wanted to be able to reward the producers of high quality cheese. While they felt that poor quality cheeses may have a place in the marketplace they wanted to be able to know the quality of the cheese that they were buying. Consumers who participated in the focus groups viewed grading as a mechanism to provide them with an impartial appraisal of product quality. They wanted a mechanism in place that would allow them to buy cheeses with the confidence that the cheeses met a recognized quality standard. They wanted manufacturers to produce uniformly high-quality stable products. If the product did not meet this standard they wanted the product labelled as such i.e. Grade B. Some participants indicated that it may be their right to buy poor quality product ('crap') but they want to know that it is poor quality before they buy it. There was a feeling that cheese quality was sliding to the lowest common denominator.

Consumers want grades for cheese to provide them with the quality they want. They want an independent audit of the grade standards to ensure an impartial appraisal. Participants preferred grade standards to be regulated. They also wanted more than one grade. Harmonization with the US grade standards for four varieties of cheese: Cheddar, Colby, Swiss, and Monterey would provide consumers with choice based on quality.

Participants indicated that many cheeses produced by small cheese factories were excellent in quality. Consumers drove many miles in order to purchase specific cheeses from a small cheese factory.

Imported cheese was seen as being more consistently higher in quality than Canadian cheese purchased at the supermarket. Imported cheese would be the cheese of choice for a number of cheeses especially if there were being used for a special occasion because the imported cheese can be depended on to deliver the taste, texture, mouth feel, aroma ... expected from that variety of cheese.

There was also interest in the various EU quality schemes: Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Speciality Guaranteed (TSG).

Consumers have responded positively to the Vintners Quality Assurance, VQA, a quality system for wine. The quality approach has been positive for the wine industry which had anticipated negative impacts from NAFTA.. Consumers would like to be able to have a similar quality mark for cheese.

Canada's Agriculture Policy Framework has as a key element the 'branding' of Canada as a producer of high quality foods. We asked participants what messages that they would like to send to the Minister of Agriculture and Agri-Food Canada.

- Quality begins at home. If we do not have high quality products for Canadian consumers we will not be able to make an impression abroad. What would visitors think of some of the cheeses currently sold in Canada that have neither the organoleptic qualities associated with the named cheese not the performance and functional characteristics.
- Set high standards that are clear.
- Maintain the nutritional quality of cheese as provided in the Food and Drugs Regulations
- Set quality grading standards that are in line with the highest of international standards
- Consumers are misled and deceived by named variety cheeses that do not meet the organoleptic characteristics of the cheese and do not meet performance expectations. Current cheese and cheese products available to consumers vary in composition and in their physical, chemical and organoleptic properties and many are not representative of the cheese variety named on the label.
- Quality standards are good for consumers. Quality standards would assist in creating consumer confidence in Canadian cheeses.
- Enforce, Enforce, Enforce, Enforce until the manufacturers get the message!
- Increase the number of inspectors that are devoted to enforcing regulations related to food. Consumers understand that inspection is funded with their tax dollars and they want to be protected. *The CFIA are consumers' food police.*

In the United States Section 401 of the Federal Food, Drug and Cosmetic Act requires the following:

SEC. 401. [341]⁵⁸ Whenever in the judgment of the Secretary such action *will promote honesty and fair dealing in the interest of consumers*, he shall promulgate regulations fixing and establishing for any food, under its common or usual name so far as practicable, a reasonable definition and standard of identity, a reasonable standard of quality, or reasonable standards of fill of container... In prescribing a definition and standard of identity for any food or class of food in which optional ingredients are permitted, the Secretary shall, *for the purpose of promoting honesty and fair dealing in the interest of consumers, designate the optional ingredients which shall be named on the label...*

⁵⁸ <http://www.fda.gov/opacom/laws/fdcact/fdcact4.htm>

Participants liked the requirement that optional ingredients needed to be identified. Even a member of the Council of Canadians thought that the United States had it right.

Consumer Advisory Committee findings

A volunteer Consumer Advisory Committee was formed made up of people with extensive experience in consumer affairs and representation and with experience and expertise in nutrition and dietetics. A list of the Advisory Committee and short bibliographies are found in **Appendix 2**.

Practices that infringe on consumer rights

The following actions have denied consumers the right to choice, information, consumer education and participation in marketplace decisions.

- Products use the same varietal names, whether or not they actually meet the compositional standard for that variety.
- Changes in composition of brand name products that have been on the market for some time have not been clearly identified to consumers.
- There have been no 'gazette' changes to compositional standards for cheese under the Food and Drugs Regulations.

The CFIA must ensure that compositional standards are maintained and enforced to prevent long-term negative health impacts such as obesity and osteoporosis.

Advisory Committee Recommendations

The Advisory Committee provided strategic advice and input about the consumer interest in standards, assessed the outputs from the focus groups, and assisted in the development of recommendations for the final report as they are presented here:

Recommendation 1

Standards of Identity for standardized cheeses described in the Food and Drugs Regulations preserve the complete nutrition profile (of cheese made from milk) and should be maintained.

There are a number of fundamental reasons for this.

- Cheese is an important component of the overall diet and an important source of calcium, magnesium, phosphorus, potassium, protein, and vitamins A, and B.
- Cheese is an alternative choice for milk

- Hard cheese is a low lactose alternative to milk for those with lactose intolerance
- Milk has many bioactive properties. These bioactive properties are also present in cheese made from milk. It is the food itself, not the presence of specific nutrients in the foods, which creates the beneficial effects of milk and products made from milk on health.

Products that do not meet the full nutritional profile of standards for cheese products should not be called cheese and should not be marketed in such a way as the consumer might be confused or misled that they are a cheese product.

Innovation

Cheese products which do not meet the standards should remain in the marketplace if they meet the following criteria:

- The product should be named in such a way that the consumer does not mistake it for cheese that meets the prescribed 'standards of identity' for cheese or for cream cheese or processed cheese products.
- The non-standardized product is not nutritionally inferior to standardized cheese or cheese products.
- The percent of the first three or four ingredients should be listed as is the case in Europe.
- The moisture and milk fat must be provided on the front panel
- All ingredients are listed; the use of modified milk ingredients is not used as a collective term. It does not inform consumers.
- If the product does not meet the expected performance characteristics, the deviation from consumer expectations must be provided on the front panel (e.g. will not melt; not to be used for baking, will not brown).
- That both the Government of Canada and the manufactures engage in consumer education that informs consumers about these products including new ingredients and the fit or lack of fit that they have with the milk product group in Canada's Food Guide to Healthy Eating.
- If not nutritionally equivalent the product should not be called cheese. The product should use an appropriately descriptive term or fanciful name.

Discussion must be held immediately with Health Canada's Nutrition Policy and Promotion Branch. The revision of Canada's Food Guide for Healthy Eating is currently underway. The impact of non standardized cheese-like products on the nutritional health and well-being needs to be considered in light of the most recent dietary intake of Canadians data.

Recommendation 2

Foods named by use of a nutrient content claim and a standardized term need to be regulated.

Consumer participants in the focus groups expressed support for Canada to include a 'general standard of identity' for modified versions (i.e. reduced fat) of traditional standardized foods in line with 21 CFR 130.10 of the U.S. Food Drugs and Cosmetic Regulations. That is, the modified food must:

1. Comply with the provisions for the standard for the traditional standardized food except for the deviation described by the nutrition content claim.
2. Not be nutritionally inferior to the traditional standardized food.
3. Possess performance characteristics, such as physical properties, flavour characteristics, functional properties, and shelf life, that are similar to those of the traditional standardized food, unless the label bears a statement informing the consumer of a significant difference in performance characteristics that materially limits the use of the modified food (e.g. "not for baking").
4. Contain a significant amount of any mandatory ingredient required to be present in the traditional standardized food.
5. Contain the same ingredients as permitted in the standard for the traditional standardized food, except that ingredients may be used to improve texture, prevent syneresis, add flavour, extend shelf life, improve appearance so that the modified food is not inferior in performance characteristics to the traditional foods.
6. All optional ingredients are labelled.

Recommendation 3

Maintain and enforce the compositional standards in the Food and Drugs Regulations.

Rationale for the supremacy of the Food and Drugs Regulations (Division 8) for 'standards of identity' for cheese and cheese products follows:

- The Food and Drugs Act is the core piece of legislation governing standards of identity for food products. Section 30.1 (c) of the Act provides the Governor in Council to prescribe standards of composition, strength, potency, quality or other property of any article of food, drug, cosmetic or device.
- The Food and Drugs Regulations (Division 8) provide standards of identity for 62 cheeses and cheese products
- The composition requirements outlined in the Food and Drugs Regulations are clear and enforceable. Fraudulent practices can be identified.

- The Dairy Products Regulations Health and Safety Section 2.2 (1) (Subject to subsections (2) and (3),) no person shall market a dairy product in import, export or inter-provincial trade as food unless the dairy product (b) is not contaminated⁵⁹; (e) meets all other requirements of the Food and Drugs Act and the Food and Drugs Regulations with respect to the dairy product. Composition determines the nutritional profile which is a fundamental determinate of health. Cheese is equated to milk in all health promotional materials. Cheese, milk and yogurt make an important food group, Milk Products, in Canada's Food Guide for Healthy Eating.
- A dairy product may be graded only if it meets the requirements of the Food and Drugs Act and Regulations (Section 4 (e))
- The Dairy Products Regulations inclusion of 'milk solids' that have not been chemically changed is undefined and the Canadian Food Inspection regulators were unable or unwilling to provide details of what those 'solids' may be.
- The Canadian Food Inspection Agency was unable to provide the criteria and indicators to objectively verify that the changes in composition from the Food and Drugs Regulations enhanced the product. The Food and Drugs Regulations form the baseline and other regulations must raise the bar (Food and Drug Regulators Claudette Dalpe and Dennis Lien April 5, 2005).
- The Food and Drugs Regulations provide for the nutritional quality of food to be maintained.
- The Food and Drugs Act (6) states that when a 'standard' has been prescribed it cannot be labelled, packaged, sold or advertised in a manner that is likely to be mistaken for that food unless it complies with the prescribed standard.
- The Food and Drugs Act (5) states that no person shall label, package, treat, process, sell or advertise any food in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character, value, quantity, composition, merit, or safety.
- The Food and Drugs Regulations (B.01.042) states: Where a standard for a food is prescribed in this Part (B – Food)

The food shall contain only the ingredients included in the standard for the food;

Each ingredient shall be incorporated into the food in a quantity within any limits prescribed for that ingredient; and

If the standard includes an ingredient to be used as a food additive to that food for that purpose.

⁵⁹ *Contaminated* in respect of a dairy product, means containing, for any reason whatsoever, a chemical, drug, *food additive*, heavy metal, industrial pollutant, *ingredient*, medicament, microbe, pesticide, poison, toxin or any other substance not permitted by, or in an amount in excess of the limits prescribed under or regulated by the Canadian Environmental Protection Act 1999, the Food and Drugs Act and the Pest Control products Act. Interpretation Section 2 Dairy Products Regulations

- On the Government of Canada official website on regulation, www.regulations.gc.ca the President of the Treasury Board states: *Canadians want the government to be accountable for its regulatory actions and results. Smart Regulation is about accountability, as well as enhanced predictability in a system that is both transparent and fair.* ... *“Smart Regulations is also about transparency; enabling citizens to have access to information about how decisions are made and the progress of regulatory activities.”* The Joint Statement on a New Partnership in North America (Nov. 30, 2004) commits to pursuing joint approaches to partnerships, *consensus on standards*, and regulations that result in greater competitiveness, while *enhancing the health and safety of Canadians*. This is essential in part to provide Canadian industry and investors improved competitiveness and access to North American markets.
- Both the National Dairy Code 1997 and the amended 2002 version state, in the section on Dairy Product Compositional Standards: *Canada must work towards harmonization regionally as set out under the North American Free Trade Agreement.*
- The Food and Drugs Regulations are consistent with the US Regulations. In the interest of harmonization and smart regulations Canada should enforce the Food and Drugs Regulations. This is important to position Canadian Cheese in the international marketplace.

Recommendation 4

Canada should harmonize with the United States for the standards of identity for cheese used in manufacturing.

Rationale

- Consumers have indicated that there has been an erosion of the quality and performance characteristics in ready made cheese products.
- Consumers have identified that cheese used in some commercial establishments is of poor quality and does not melt in the way that it is anticipated.
- Standards of identity for commercial cheeses have a consumer protection component.;
- Standards for commercial cheese would make a more level playing field for manufacturers.

Conclusion

- The Food and Drugs Regulations related to Cheese (Division 8) are in the Canadian consumers' interest. These regulations provide for a consistent and predictable nutrition profile, protect population and individual health, provide

consumer protection and instil trust and confidence in the regulatory system because the regulations are transparent, clear, fair and enforceable. The Food and Drug Regulations (Division 8) support the Government of Canada objectives of harmonizing regionally.

Labelling

Recommendation 5

Cheese and processed cheese products which do not meet the standards of identity as described in the Food and Drugs Regulations must be labelled in such a way that the modified product is not confused with the standard cheese.

Rationale:

- The Canadian Food Inspection Agency – Guide to Food Labelling and Advertising Section 4.2.2 under qualified descriptive common names of standardized foods states: The common name of a standardized food must **not** be used to describe any food unless that food meets the provisions set in the standard for **composition, strength, potency, purity, quality or other property of food...** When a nutrient content claim is made (i.e. low fat), all applicable criteria, including both composition and labelling requirements, must be met.
- A modified common name of a standardized food may not be used to describe a food that does not meet that standard unless the following conditions are met.
- It must always be clear to consumers that the food so described does not meet the standard.
- The consumer is told, in all respects, on the label and in advertisements, the provision(s) which the food does not meet within the standard. This information must always be in evidence in a clear and prominent manner as part of the common name on labels and in advertisements.
- The common name of the standardized food is processed (naming the variety) cheese or processed cheese food. The modified common name used is process(ed) cheese product. The labelling of the process(ed) cheese product is in our opinion clearly misleading and deceptive. It does not meet the conditions set out in the Canadian Food Inspection Agency Guide to Food Labelling and Advertising and it contravenes the intent of the Food and Drugs Act (section 6) and Regulations (B.01.042).
- It is not clear to consumers that the cheese product does not meet the standard.

- The consumer is not told on the label the provisions which the food does not meet within the standard. There is no evidence to inform consumers in a clear and prominent manner as part of the common name on the labels.

Recommendation 6

Labelling should use large enough print and appropriate colour contrast to be readable.

In the marketplace competition for visibility and recognition often take precedence over ease of reading. When ease of reading may determine whether or not a particular text will be ignored, skimmed, or closely read, in an overloaded print environment, the surface features of that text must be user-friendly. The use of condensed print alters the usual visual cues for the reader, making letters and words more difficult to discriminate. Print size that is 8 to 14 point is optimal. For ease of reading, print smaller than 8 point must be presented using optimal values of other typographic variables.^{60 61 62 63}

Recommendation 7

Information on the front panel should be consistent with information found elsewhere on the label. The front panel should not be misleading.

Consumers are misled when the information on the front panel does not describe the product in a truthful manner.

Recommendation 8

Changes from expected performance characteristics should be identified on the front panel of the label.

Consumers have the right to know if a product will disappear when heated, won't brown, will not melt...

Recommendation 9

All ingredients should be listed separately.

The use of inclusive terms such as 'modified milk ingredients does not inform consumers. For some consumers it is important that they be able to identify the ingredients that are being used.

⁶⁰ Metz Marilyn 1996 Preference of Consumers over Fifty for Typographic Variables on Consumer Product Instruction Labels. PhD Thesis, Montreal: McGill University, Faculty of Education p.58.

⁶¹ Craig, J. 1980 Designing with Type. London: Pitman Publishing Ltd.

⁶² Paterson, DG., Tinker MA 1940 How to Make Type Readable. New York: Harper & Brothers.

⁶³ Spencer H. 1969 The Visible Word 2nd ed. Rev. New York: Visual Communication Books, Hastings House.

Recommendation 10**Canada should adopt the Quantitative Ingredient Declaration System (QUID) (percentage by weight).**

Percentages should be provided for the three most prevalent ingredients and any other ingredient whose presence is emphasized by words or pictures on the label or in advertising. Manufacturers should be obliged to disclose QUID whenever there is a foreseeable likelihood that consumers will be deceived about ingredient composition as a result of marketing claims or consumer expectations about ingredient composition. The EU QUID standard requires that even when no marketing claims are made, QUID must be disclosed when consumer expectations regarding ingredient composition are evident.

QUID promotes honesty in the marketplace and provides consumers with the information that they need to make informed food choices.

A review of labels by the Consumer Advisory Committee identified the absolute need to establish quantitative ingredient declaration (QUID) on cheese and cheese products. Quantitative ingredient declaration (QUID) on food labelling is important to consumers. Visual inspection does not always provide information about the relative contribution of specific ingredients. The ingredient list does not indicate the amount of a particular ingredient that is in the combination food (i.e. how much milk (if any) is in the cheese – like product; how much cheese is in the product; how much (name the variety cheese) is in the product.

Recommendation 11**All cheese-like products not meeting the standards described in Division 8 of the Food and Drugs Regulations should immediately be subject to quantitative ingredient labelling.**

This provision is necessary because labels often imply that the product contains significant amounts of a desirable ingredient or ingredients but these ingredients may be present in trivial amounts.

(QUID information is now routinely provided in more than 18 countries including the European Union, Australia, New Zealand, and Thailand.)

A number of labels for processed cheese reviewed by the participants indicated on the label that they were made from named variety cheeses but when the ingredient list was examined it was found that the first ingredient was modified milk ingredients.

(The National Dairy Code suggested description for processed cheese provides for not less than 51% milk ingredients of which at least 50% or 25.5% is cheese.) (Note: 'milk ingredients', as defined in the Food and Drugs Regulations, does not include cheese.)

QUID provides useful information in addition to mandatory nutrition labelling which enhances informed choice. When any ingredients are emphasized on a food label or in advertising by words, pictures or graphics the label shall indicate the percentage by weight of the emphasized ingredients beside the emphasized words or pictures or beside the common

name of the food. Where highlighted ingredients may be on the principal display panel, the percentage by weight of the ingredient should be displayed next to the claim. Our preference is to have the information on the display panel and in parenthesis in the ingredient list.

For the consumer, QUID provides information to facilitate:

- product comparisons on the basis of quality by informing consumers which product contains the greatest amount of desirable ingredients (milk, variety of cheese etc.)
- the selection of healthier food choices by providing information about the percentage of healthful (milk) or unhealthful (casein – difficult to digest) ingredients that a food contains
- avoidance of economic adulteration by providing information about the amount of water or inferior ingredients in a product;
- understanding of the contribution of ingredients highlighted in pictures or words on the label (i.e. the amount of cheese in prepared cheese-like products that do not meet the standards described in the Food and Drugs Regulations)
- the development of higher quality products.

Competition and Trade

Recommendation 12

Canada should follow the example of the European Union and the United States by focusing on quality. “Branding Canada” under the Agricultural Policy Framework as a producer of quality agricultural products should begin in the Canadian Marketplace.

Standards of identity are needed that provide legal clarity. These standards are important to create consumer confidence. Quality grade standards are described in the United States Department of Agriculture information as:

- a processor’s aid to marketing
- A buyer’s guide to value
- A consumer’s guide to quality.

The consumer wants

- uniform high quality wholesome cheese and cheese products
- consistent taste, feel, colour and appearance of named variety cheeses
- customer-focused approach
- a quality assurance system that is approved, documented and published for consumers to be able to be informed.

- A grading system that provides for an impartial appraisal of product quality.
- Verification by process audits.

Consumers want to be able to buy with confidence.

Participants in the focus groups wanted quality grade standards to be implemented for the most frequently consumed cheese. They want to know the quality they are purchasing. The focus group participants did not favour a voluntary system. They did not think that the manufacturers could be trusted. They had observed the erosion in quality of some cheese using standardized cheese names.

The Advisory Committee recommend that the industry established clearly stated and internationally recognized grade standards for standardized cheeses. That an independent audit system be put in place and the system tried. If the system does not work or be seen to be working then quality grade standards should again become part of regulations and enforced.

Consumers want quality and they want to be able to recognize quality cheeses. There was discussion about the cow logo. Focus group participants would like to see the cow only on high quality cheeses.

The Canadian industry must continue to increase its competitiveness. Quality is an essential way forward to grow the Canadian industry. Ways to encourage and support more small and medium sized cheese factories is a way to encourage both high quality and innovation.

From the consumers

‘We’ve been making a lot of assumptions about compositional standards and about quality. This is very dangerous as we’ve based decisions that effect our long-term health on these assumptions’ Winnipeg Focus Group

From the Consumer Advisory Committee

“By failing to enforce compositional standards described in the Food and Drugs Regulations, the CFIA has destroyed the knowledge base of consumers and dietitians. Failure to enforce has undermined the frame of reference for Canada’s Food Guide to Healthy Eating” – Ottawa May 15th, 2005

Annexes: Tables relating to Nutrition

Annex 1:

Recommendations for Adequate Intakes (AIs) for Calcium for Specific Age and Sex Groups recommended in the Dietary Recommended Intakes, 1997

| Populations Group | Age in years | Adequate Intakes per Day |
|-------------------|---------------|--------------------------|
| Children | 1 through 3 | 500 mg |
| | 4 through 8 | 800 mg |
| Boys | 9 through 13 | 1300 mg |
| | 14 through 18 | 1300 mg |
| Girls | 9 through 13 | 1300 mg |
| | 14 through 18 | 1300 mg |
| Men | 19 through 30 | 1000 mg |
| | 31 through 50 | 1000 mg |
| Women | 19 through 30 | 1000 mg |
| | 31 through 50 | 1000 mg |
| Men | 51 through 70 | 1200 mg |
| Women | 51 through 70 | 1200 mg |
| Men | > 70 | 1200 mg |
| | > 70 | 1200 mg |

Annex 2:

Under and Over estimates of Vitamins and Minerals Using RDIs⁶⁴ versus DRIs⁶⁵ (complete table)

| Nutrient | RDI Used on Label 2006 | DRI New Guidance | Difference RDI versus DRI % | Unit |
|-----------------------|------------------------|------------------|-----------------------------|-----------|
| Vitamin | | | | |
| D | 5 | 15 | -66.7 | µg |
| E | 10 | 15 | -33.3 | mg |
| C | 60 | 90 | -33.3 | mg |
| K | 80 | 120 | -33.3 | µg |
| Folate | 220 | 400 | -45.0 | µg |
| B₁₂ | 2.0 | 2.4 | -16.7 | µg |
| Biotin | 300 | 30 | +900.0 | µg |
| Panthenic acid | 7 | 5 | +40.0 | mg |
| Niacin | 23 | 16 | +43.8 | NE |
| Riboflavin | 1.6 | 1.3 | +23.1 | µg |

⁶⁴ Canadian Food Inspection Agency Guide to Food Labeling and Advertising

⁶⁵ Dietary Reference Intakes, Food and Nutrition Board, Institute of Medicine, National Academy Press, Washington, D.C.

| Nutrient | RDI Used on Label 2006 | DRI New Guidance | Difference RDI versus DRI % | Unit |
|----------|------------------------------|---------------------|--------------------------------|------|
| A | 1000 | 900 | +11.1 | RE |