A TASTE OF TOMORROW

Industry, Science and Technology Canada
Industrie, Sciences et Technologie Canada

Canada

A Taste of Tomorrow

Trends and Outlook in the Food and Beverage Processing Industry

4th Annual Edition

Food Products Branch
Industry, Science and Technology Canada
June 1992

Cat. No. C2-131/1992
ISBN 0-662-59037-6
IT PU 0019-92-03

Table of Contents

Readership Survey

Four years ago, the Food Products Branch at Industry, Science and Technology Canada launched *A Taste of Tomorrow*, an annual publication, which is now widely distributed to leading food and beverage firms in Canada, industry associations, research, educational and financial organizations, as well as officials at federal and provincial government levels interested in the food processing industry.

Before undertaking the fourth edition, we decided to ask our most important critics — our readers — about every aspect of *A Taste of Tomorrow*. With the assistance of Flaman Partners, we were able to collect some valuable comments. We appealed to about 200 readers for help, a third of whom responded either by completing a questionnaire or agreeing to a personal interview.

We are grateful to those who took an active part in this exercise. Survey participants who indicated that they read *A Taste of Tomorrow* said it was well written and that they usually found something of value in it. But many challenged us to do better! Industry personnel told us they select their reading material by searching for items that help to make them better managers or that in some small way might help them to improve their businesses.

This last idea has been our guiding principle for this edition. We have tried to select a narrower, more strategic range of topics that should be of strong interest to our readership. For the first time, outside contributors have lent us their expertise as we attempt to make *A Taste of Tomorrow* a more worthwhile publication. Suzanne Hendricks, President of the National Institute of Nutrition, and Don Jarvis, of The Neville Group, have added a new and — I think — useful dimension to this edition as we strive to make our publication more informative and useful to our readers. We were delighted when they volunteered to assist us.

A Taste of Tomorrow continues to require your advice and your help. Our readers have told us that they see the Food Products Branch at ISTC as an important advocate in government for food processors and that this publication should reflect such a role more clearly. We want to serve the information needs of the Canadian food industry. Make your opinions and needs known. Reader suggestions and requests are always welcome.

Director General
Food Products Branch
Industry, Technology and
Regional Operations

Food Products Branch

The Food Products Branch is the contact point for the food industry within the federal government. In addition to medium to long-term analyses of sectors for consideration in strategic decision making, the directorate analyzes and advocates positions on policy matters of concern to industry within government. It also manages or provides access to various government programs designed to assist industry sectors making primary food products, processed food and beverage products, and seafood and marine products.

The branch is a source of information on developments in the food and beverage sector. A list of Industry Profiles, reports and other studies available may be found on the next page.

For further information, contact:

Food Products Branch
Industry, Science and
Technology Canada
235 Queen Street
OTTAWA, Ont.
K1A 0H5
Tel.: (613) 954-3579
Telex: 053-4123 (FPB)
Fax: (613) 941-3776

Primary Food Products Directorate
Tel.: (613) 954-2936

Seafood and Marine Product
Directorate
Tel.: (613) 954-2927

Processed Food and Beverage
Products Directorate
Tel.: (613) 954-3087

or any ISTC Business Service Centre listed at the back of *A Taste of Tomorrow.*

Publication Order Form

Please forward copies of the latest departmental Industry Profiles, reports and studies

Industry Profiles assess the competitiveness of individual Canadian industrial sectors.

Food Products

- ❒ Bakery Products (2M)
- ❒ Biscuits (3M)
- ❒ Cattle Processing (5M)
- ❒ Confectionery (6M)
- ❒ Dairy Products (7M)
- ❒ Distilleries (8M)
- ❒ Flour Milling (10M)
- ❒ Fruit and Vegetable Processing (11M)
- ❒ Hog Processing (12M)
- ❒ Livestock and Poultry Feeds (13M)
- ❒ Malting (14M)
- ❒ Oilseed Crushing (15M)
- ❒ Pet Foods (16M)
- ❒ Poultry and Egg Processing (17M)
- ❒ Processed Forage (18M)
- ❒ Starch and Related Products (23M)
- ❒ Wineries (24M)

Seafood and Fish Products

- ❒ Aquaculture (1M)
- ❒ Fish Meal and Fish Oil (9M)
- ❒ Seafood and Marine Products – East Coast (19M)
- ❒ Seafood and Marine Products – Freshwater (20M)
- ❒ Seafood and Marine Products – Overview (21M)
- ❒ Seafood and Marine Products – West Coast (22M)

- ❒ *Directory of Canadian Pet Foods Manufacturers*, September 1990 (Contains names, addresses and other information on pet food manufacturers)
- ❒ *Food Technology Networking Guide*, March 1991 (Contains information on organizations, data bases, events, etc. concerned with food technology)
- ❒ Market Intelligence Reports on Imports
  - Raspberries and Logan Berries, June 1990
  - Ice Cream and Yogurt, September 1990
  - Other Dairy Products, September 1990

  (Provides detailed import statistics, names of Canadian importers and foreign suppliers for the above commodities)
- ❒ *The Canadian Malting Industry*, September 1990 (Gives a highly detailed account of the development of the Canadian malt industry)
- ❒ *Packaging and the Food Industry: Canada and the European Community*, February 1991 (Provides an overview of packaging issues in Canada and the EC, particularly solid waste management)
- ❒ *The Importance of Innovation in the Canadian Food Industry*, Peat Marwick Stevenson Kellogg, June 1991 (Covers the role of innovation including its impact on competitiveness in the dairy and fruit and vegetable sectors)
- ❒ *Competitiveness of Food Processing in Canada*, George Morris Centre, University of Guelph, January 1992 (Outlines an analytical competitiveness framework including a performance assessment of the poultry, horticultural-based, and wheat-based processing industries
- ❒ A list of available publications and videos produced in conjunction with the Seafood and Marine Sector Campaign, Phase II

❒ Please keep my name on the mailing list for future editions of *A Taste of Tomorrow*.
❒ Please send me an additional copy of the 1992 edition of *A Taste of Tomorrow*.
❒ Please delete my name from your mailing list.

Name: _____
Title: _____
Company: _____
Address: _____
_____
Tel.: _____

RETURN TO:

Industry Profiles Publications Task Force
Industry, Science and Technology Canada
Room 704D, 235 Queen Street
OTTAWA, Ont.
K1A 0H5
Tel.: (613) 954-4500
Fax: (613) 954-4499

A Road Map for Survival

by Don Jarvis*

* Don Jarvis is an Ottawa-based government relations/public affairs consultant with The Neville Group.

In today's economy, the only constant appears to be change. Increasingly, it seems that everything we have known about most things is open to question. The comfortable old truths and assumptions that governed the way we lived and did business are undermined daily by new ideas and ways to do things.

For anyone with a stake in the Canadian food and beverage industry, that message can be either very disconcerting or an inspiration to find the means to meet the challenges that reality presents.

We all have an important stake in the future of this industry. The ability to remain competitive — domestically, continentally and internationally — is crucial to the direct livelihood of about 600 000 farmers, fishers and employees in the processing sector.

The continued well-being of this industry is integral to the overall economic future of the economy, especially when one adds the impact on the packaging, transportation, advertising and other sectors servicing the industry.

If the industry and its component parts fail to meet these challenges, our reliance on imported foods and beverages will increase. How well the industry responds to the current need to restructure and reposition itself will determine if indeed that is our future.

Let's take the idea of a road map as a way of illustrating the current state of the food and beverage industry. In looking at unfamiliar areas, one usually needs an up-to-date map to decide where one wants to go and what roads to take to get there.

The Old Map

The 1980s saw the old map used by the Canadian industry turned topsy-turvy: familiar landmarks were moved, others disappeared, major topography was altered and many of the roads we were used to travelling on were either closed or rebuilt into superhighways.

These changes were clearly under way long before the Canada-United States Free Trade Agreement was negotiated, signed and implemented. Food businesses around the world began to recognize in the mid-1980s that to survive and prosper they would have to compete beyond their national markets. They would have to find ways to achieve and maintain competitive advantages in a global economy. For the food and beverage sector in Canada, this has been especially difficult and slow in coming. The landscape on the old map was one where the domestic market was isolated from most international forces. For the most part, the processing sector limited itself to replicating products developed in the U.S. and elsewhere and producing items for the small Canadian market.

Strong growth and demand through the 1970s disguised the reality that the industry's productivity was slowly declining. If the industry continued to use these old roads, a dead-end would be reached, eventually. By the mid-1980s, key factors had altered our map. New technology and major challenges in consumer demand, investment strategies and corporate structures were beginning to affect the industry.

As well, in a country whose wealth and high standard of living had been based on natural resources, we have been slow to shift our market orientations away from primary industries toward industries in which further processing of basic input materials increases the value of the market products. Meanwhile, profound reforms are taking place in our North American and international trading rules that will see traditional trade barriers altered.

Ultimately, this will mean high-quality, low-cost producers will gain greater competitive advantages, no matter where they are located. We require a redrawn map with new roads to find our way through this now unfamiliar territory.

The New Map

There are at least seven roads on which anyone with a stake in the Canadian agri-food sector has to be prepared to travel in the 1990s. Producers, wholesalers, distributors and processors — everyone — needs to be prepared to follow these roads.

Seven roads to meeting the pressures of globalization:

1. **Targeting the global marketplace.**
2. **Recognizing people as the critical resource in any venture.**
3. **Putting first the needs of the customers.**
4. **Making a sensitivity to the environment mandatory in all business practices.**
5. **Developing effective alliances with governments and throughout the agri-food industry.**
6. **Finding ways to innovate by improving products and reducing costs.**
7. **Changing courses continually if required and taking other new roads.**

In most business circles, it seems trite now to talk about globalization. But our Canadian market is far too small on its own to attract major investments in new technologies and products to meet the demands of global competition. Therefore, to travel hopefully on the first road, agri-food businesses will need to be linked in some way with enterprises outside the country and to carve out specialized niches in selected markets.

All of us working in this sector may believe our situation is unique, but this need to address the industry's structural problems and reorient ourselves more globally exists in all sectors and extends into every corner of the Canadian economy.

Knowledge about and utilization of the latest technologies require highly trained and skilled people. Canadians take pride in their educational systems and institutions. Their high quality must be maintained. In addition, the agri-food industry must attract the best-qualified young people and be prepared to train and motivate them in order to retain their loyalty and expertise. On this second road, one must never forget the fact that skilled people are the most critical resource in any successful venture.

In the constant struggle to survive in an ever more competitive world, businesses can easily lose sight of why they exist. Without customers no business will last for long. Canadians are sophisticated and cost-conscious consumers who demand high-quality products. As well, new awareness and emphasis on the importance of nutrition places more onus on the agri-food sector to meet the needs

and expectations of its customers along this third road to the marketplace.

Despite the current preoccupation of Canadians with the state of our economy and the future of our country, their sensitivity to environmental problems and issues remains strong on the fourth road. Consumers around the world favour products that demonstrate positive environmental benefits. Canada has taken a leadership role in this area with programs like the National Packaging Protocol sponsored by the Canadian Council of Ministers of the Environment. The agri-food industry as a whole and individual businesses in it will prosper domestically and internationally by instituting environmentally friendly products and processes and by telling the public about those efforts.

There has been a tendency in the North American business environment to avoid partnerships either with competitors and suppliers or, particularly, with governments. Taking the fifth road means finding the many advantages in developing strategic alliances. Pooling resources for the high costs and long lead times associated with developing new markets and technologies is often required. Governments should not be viewed as adversaries and impediments but rather as major sources of intelligence and assistance, especially in meeting all the challenges of globalization.

The sixth road features the ability to innovate and improve your products and reduce costs. Many producers and processors in our agri-food sector are working to lower costs and achieve even higher quality. Automation, flexible manufacturing processes and integrated operations along with sound financial management and corporate organization are the keys to achieving that objective. Despite the recession and despite the limited growth in demand domestically for food and beverages, many small and medium-sized companies are providing new ideas, products and jobs, and are finding export opportunities.

Whatever their size, the key to a business's success is to be outward looking, flexible and able to find customers here in Canada or in new export markets.

Finally, to survive the pressures of globalization, the Canadian agri-food industry will have to be prepared to continue to change course and take new roads. To survive, everyone must be flexible. There is a need to be prepared to critically evaluate work practices, to alter them when required and to work closely to harmonize operational systems and procedures. Failure to do so will impede innovation and efficiencies along this seventh road.

By now, producers through to distributors should be critically examining all facets of their operations and the foundations on which their businesses are built. This is especially the case regarding the role of government.

Our current regulatory framework must be understood and assessed, and future directions must be determined — particularly as they relate to the North American market.

Governments everywhere are still streamlining and trying to respond to the conflicting pressures of globalization. We no longer can afford costly duplication. Therefore, harmonizing rules and regulations as well as using and accepting more common continental or international standards and practices will be a part of life in the 1990s. This issue will require vision and leadership, and will challenge industry and government to find a proper road that will benefit Canadian consumers and the agri-food industry.

The bottom line is that people managing successful agri-food businesses will have mind sets that will take them on roads that extend beyond our small domestic marketplace. They will be outward looking and will develop practices and strategies that are based on continental and international views, while still taking into account their Canadian market. They will keep an eye on changing conditions and will move decisively on opportunities when they present themselves.

The Label Maze

*by Suzanne Hendricks**

* Suzanne Hendricks is President of the National Institute of Nutrition, a non-profit organization dedicated to advancing the knowledge and practice of nutrition in Canada.

In order to satisfy their concerns about good health and nutrition, reading the labels on food packages now appears to be more of a way of life for many Canadian food shoppers. Nutrition is reported to be the number-one concern among consumers and health-related reasons are the most important factor when choosing a food product. This was the case for about 800 Canadians who participated in a survey recently completed by the National Institute of Nutrition (NIN) based in Ottawa.

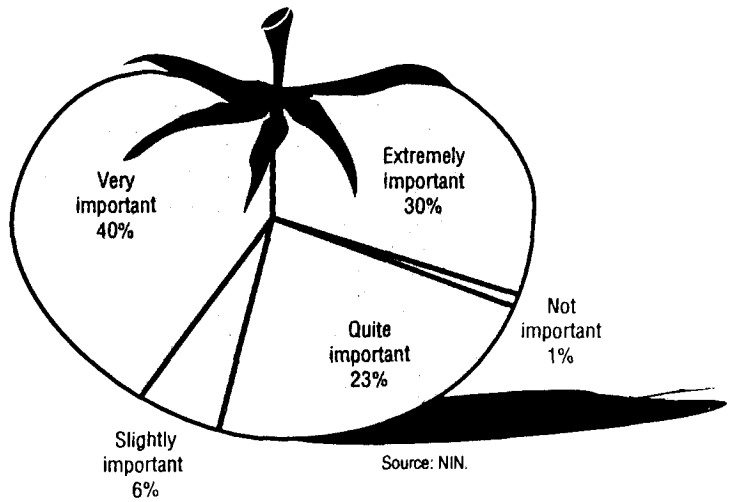
In the NIN survey, over two thirds indicated they look for nutrition information on food packages. Of those who do, the majority said they look at labels on packages in the store prior to purchase.

Claims Appear Pivotal

When making their way through the label information, consumers often are confronted with a barrage of nutrition claims, such as "reduced fat" or "low cholesterol." These are supported by more factual information provided through the detailed nutrition panel or the ingredients list on the package.

An ingredients list simply identifies ingredients in a package in descending order of proportion. A nutrition panel is more technical and more detailed. It identifies actual amounts of proteins, vitamins, calories, etc., per serving. Regulations in Canada require that all packages have an ingredients list, but a nutrition panel is optional unless a nutrition claim is made.

Figure 1 – Nutrition Importance in Choosing Food



When asked to examine nutrition claims, ingredients lists and nutrition panels, survey participants reported that they understand claims and ingredients lists better than the nutrition panel, but described claims as somewhat less usable, simply because they provide only limited information. However, it appeared that claims do play a pivotal role when people are confronted with selecting a product for purchase.

When Food Package Labels Are Read

Of the 522 survey participants who said they read package labels, the

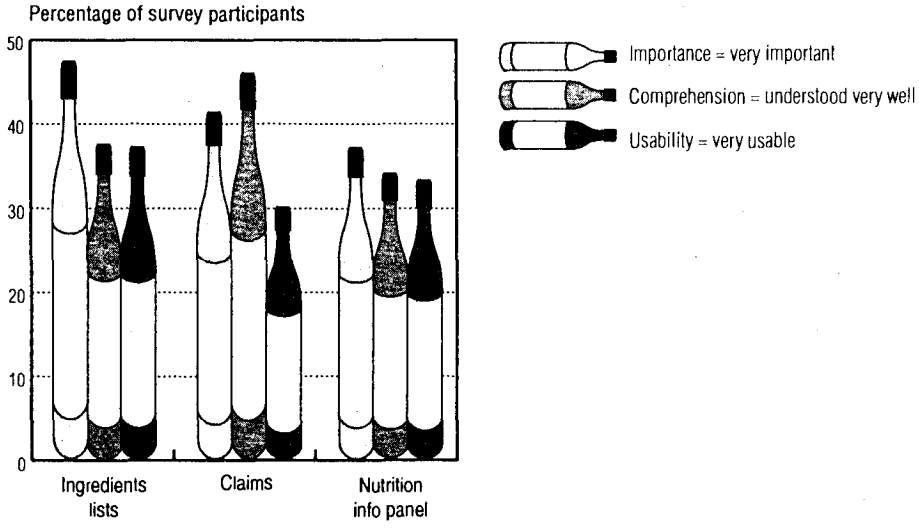
following are the most common times and places when this occurs:

In store – comparing products	71%
In store – first-time buying	46%
At home – unpacking groceries	6%
At home – preparing meals	6%
At home – selecting meals	3%

Note: In some instances, the label on the same package was read more than once, first in the store and later at home.

well consumers understand the nutrition information provided on the label and how they use it to make a purchase decision. After focus group testing in Montreal and Toronto, in-house interviews were conducted in the fall of 1991 with more than 800 Canadians who did most of the household grocery shopping.

Figure 2 – Importance, Comprehension and Usability of Package Information According to Survey Participants



Source: NIN.

Survey participants did attempt to assess the nutritional attributes when asked to choose the healthiest product from an array of similar items. However, nutritional merits of a food that were not highlighted by a claim often went unnoticed. It may therefore be unrealistic to expect that most consumers will refer to the ingredients list or the nutrition label to clarify the meaning of the claim.

A National Institute of Nutrition Initiative

These findings were part of an important national collaborative study conducted by the NIN to identify how

Twenty-four brands of food packages representing eight categories of products were used as part of the interview. The categories included processed cheese, yogurt, margarine, packaged meats, breakfast cereals, frozen meals, processed fruits and crackers.

Product Selection on Nutrition Criteria

This survey confirmed what most marketers knew and what many legislators and health professionals suspected: predominantly displayed and liberally used claims have a significant influence on food choice. For 23 of the 24 products

surveyed, the main reason given by respondents for selecting a particular product as a healthy choice corresponded to a nutritional claim appearing on the label. However, although awareness of claims was high, at least half of the respondents did not know the precise meaning of 75 percent of the claims to which they were exposed in the survey.

When the overall nutrition reasons for selecting a product were compared with product attributes, the optimal product was selected, on average, 60 percent of the time by survey participants. This success rate varied according to the category of product. For instance, 79 percent of those who reported selecting a cracker because they were looking for fibre picked up the one with the most fibre. On the other hand, only 56 percent of those who were looking for a processed cheese with "less fat" selected the one that contained the least amount of fat.

In a separate exercise, when asked to identify from among three brands of yogurt, frozen meals and packaged meats the one in each instance that had the least amount of fat, a number of participants had difficulty, as the accompanying table shows. For the three products, on average, 65 percent answered correctly, but 38 percent of those who did so stated that this was not an easy task. One could conclude that performing such a determination while standing in the aisle of a supermarket could be difficult.

Respondents Who Identified the Brand Containing Less Fat (percent)

Product	Those who made correct choice	Those who expressed difficulty but made correct choice
Yogurt	60	34
Frozen meals	65	47
Packaged meats	70	32
Average for three products	65	38

Understanding of Food Labels

The survey also brought to light some other interesting considerations. The understanding of the exact meaning of claims was superficial, and this could prevent people from making an optimal choice. For instance, the quantitative difference between a "low fat" and a "fat reduced" product seemed to be largely unknown. In the case of "low cholesterol" or "no sugar added" descriptions, people were often misled. Some participants seemed to have mistakenly assumed that a product low in cholesterol automatically was low in fat since a cholesterol-free food was defined by 35 percent of respondents as being lower in fat. A food low in cholesterol may coincidentally be one having less fat but, for example, this is not the case of a vegetable oil or margarine.

As well, survey participants didn't seem to realize what the term "no sugar added" meant. Few were aware that the legal definition of "no sugar added" appearing on packaging also included the so-called natural sugars such as honey and fruit juices or that claims like these are government-regulated. A high percentage, at least 70 percent of participants, erroneously thought that there was no government regulation of claims. An additional module of this survey probing further into consumer understanding of claims and

their ultimate influence in product choice is nearing completion.

Survey respondents said they wanted clear information on food labels that is easy to understand. They expressed little interest in seeing more information on labels. However, they did make several suggestions to enhance their comprehension of the information, including standardized formats as well as bigger and brighter print.

Consumer Education Needed

While most participants indicated that nutrition information on labels is valuable, much of the information was being ignored because it was perceived as irrelevant or was difficult to interpret. On the other hand, claims that captured widely disseminated nutrition messages had an important impact on nutrition-conscious consumers.

Voluntary nutrition labelling was introduced in Canada three years ago with the intent of helping consumers make an informed choice. There is no doubt that the label provides a wealth of information for those who are fully initiated, but most Canadians have yet to capitalize on that information. There needs to be a concerted effort to educate the consumer.

In a competitive food market, where nutritional concerns are of rising importance, there is a definite opportunity for manufacturers and retailers to see that consumers clearly understand both the nutritional features and benefits of their products.

Acknowledgment

This collaborative study was made possible through the support of Agriculture Canada (through the Canadian Agri-Food Development Initiative program), Ault Foods Limited, Canadian Egg Marketing Agency, Canadian Sugar Institute, Canadian Turkey Marketing Agency, Christie Brown & Company Ltd., Consumer and Corporate Affairs Canada, Culinar Inc., Dairy Bureau of Canada, Health Protection Branch (Health and Welfare Canada), Health Services and Promotion Branch (Health and Welfare Canada), Heart and Stroke Foundation of Canada, Kraft General Foods Canada Inc., Maple Leaf Foods Inc., National Sea Products Ltd., and Nestlé Canada Inc.

U.S. Nutrition Rules

*by Food Products Branch staff**

* Technical assistance was contributed by Consumer and Corporate Affairs Canada.

Canadian food processors and distributors interested in the U.S. market should be aware of some important changes in nutrition labelling that are occurring there.

New U.S. Labelling Rules Coming

The United States Department of Agriculture (USDA), the regulatory agency responsible for meat and poultry, and the U.S. Food and Drug Administration (FDA), a public health service agency within the U.S. Department of Health and Human Services with responsibility for all other food products, are giving consideration to sweeping changes in what information must be included in food labels. These changes should be carefully assessed for potential production line and packaging implications in the months ahead. Besides incurring the cost of producing new labels, manufacturers may find they have to subject many of their products to laboratory analysis to ensure they can provide the nutrient information required on these labels in future.

The final rules are expected to be published in November 1992 and are to be fully implemented for foods sold on and after May 8, 1993. The highlights of these new labelling proposals are outlined in the accompanying highlights.

While these proposals are not yet law, they are taking shape and will represent the first major change in FDA nutrition labelling regulations since their origin in 1973. The U.S. is setting out a fairly extensive regulatory framework for labelling in comparison with Canada or the European Community, where implementation is voluntary.

The new U.S. regulations are meant to prevent overstated or misleading nutritional claims on food packaging. Uniform labels are to provide consumers a means to compare nutrition qualities of different foods easily. The list of required nutrients to be shown on labels would be changed to emphasize nutrients that have a more significant impact on the health of today's consumers, such as fat, cholesterol and dietary fibre.

HIGHLIGHTS of the New U.S. Labelling Proposals

Information along the following lines could be required on labels of non-exempted food products:

- **Serving size**
- **Number of servings per container**
- **Amount per serving of:**
  - **total calories**
  - **total calories from total fat**
  - **total fat (grams)**
  - **saturated fat (grams)**
  - **cholesterol (milligrams)**
  - **sodium (milligrams)**
  - **total carbohydrates (grams)**
  - **complex carbohydrates (grams)**
  - **sugars (grams)**
  - **dietary fibres (grams)**
  - **total protein (grams)**
  - **certain vitamins (% of daily value) (probably vitamins A and C; thiamine, riboflavin and niacin could be optional)**
  - **certain minerals (% of daily value) (probably calcium and iron)**

Some of these items could be optional on some foods. USDA and FDA-based labels could have some minor differences.

Companies serving the food retail market will have six months to substantially revise all consumer package labels that are currently being used in that market. There may be some sort of transition period whereby foods **packaged** and **labelled** before May 8, 1993, could still be sold after that date. However, manufacturers are concerned that the six-month period from November 1992 to May 1993 to revise labels may not be sufficient. U.S. authorities are under pressure to extend this deadline.[1]

HIGHLIGHTS (continued)
Serving Sizes
USDA is considering the following options:

- **one uniform serving size of 3 ounces (85 g) for raw meat and poultry on a cooked basis**
- **a serving size for meat based on dietary recommendations**
- **a serving size based on actual consumption data**
- **optional use of metric measurement**

FDA proposals include the following considerations:

- **a portion size would be the amount customarily consumed by a person over the age of four**
- **special portion sizes would be available for small children and infants**
- **standard amounts have been determined for 131 food categories**
- **a package with less than two servings would be considered a single-serving container. For example, a standard serving size for soft drinks is 8 ounces (225 mL). A 12-ounce (340 mL) can would be considered a single serving, but the nutrient content would be based on the whole can's contents.**

It is not clear at this point to what extent these new labelling requirements will differ for imports, but the rules are largely expected to apply equally to both imports and domestically produced foods. The U.S. has provided assurances that these differences should be minimal. Canadian officials are monitoring the situation closely to ensure this is the case.

It is difficult to accurately determine what volume of Canadian food products would be impacted by the mandatory changes, but up to $750 million worth of annual shipments packaged for retail sale from Canada could be affected. Pet foods and alcoholic beverages are not affected by the new labelling proposals, although some wine coolers with fruit juices in them may be. Bulk shipments for further manufacture, packaging or shipments to the institutional trade, including restaurants, hospitals, etc., at this point do not appear to be involved (although those institutions may require an analytical breakdown of nutrients by a laboratory), nor would primary food items such as carcasses of beef, pork or other raw or fresh commodities like fruits and vegetables.

U.S. firms with total sales less than $500 000 and with food sales less than $50 000 are also to be exempted. Canadian exporters shipping less than $50 000 of packaged retail food into the U.S. are to be exempted as well.

Foods put up in very small package sizes would also be free from mandatory labelling. Small packages are those with a total surface area of less than 12 square inches (77 cm^2).

[1]The USDA has agreed to extend the implementation period for the meat and poultry products for which it has responsibility for an additional 12 months beyond the currently proposed deadline of May 1993. However, at the time of writing, the FDA, responsible for all other food products, had not announced any changes to its existing plans.

HIGHLIGHTS (continued)
Replacing U.S. Recommended Daily Allowances (RDAs)

- **Consumers for many years have used RDAs as a type of reference in assessing what constituted a healthy diet. RDAs are to be replaced by two new types of references: Reference Daily Intakes (RDIs) and Daily Reference Values (DRVs).**
- **RDIs would replace RDAs for proteins, vitamins and minerals, while DRVs would focus on acceptable daily intakes of other components, such as sodium, potassium, dietary fibre, fats and cholesterol, that affect human health.**

USDA and FDA Coordinate Efforts

USDA and FDA are working jointly on mandatory nutritional labelling for most processed foods and on voluntary labelling (at this stage) for fresh and raw products, which include fruits and vegetables, fish, and "raw, single-ingredient meat and poultry products." USDA and FDA have indicated they are working together in this effort "to restore the credibility of the food label" in the U.S.

USDA and FDA seem to be taking this fresh approach to nutrition labelling not only to make food labels simpler and easier to understand but also to give health-conscious consumers more confidence about what they are buying. According to U.S. experts, if consumers have clearer nutritional information, over the longer run the general population should become healthier, having decreased rates of cancer, coronary heart disease, osteoporosis, obesity, hypertension and allergic reactions to foods. Based on scientific information that will be supplied to the public, people will be able to purchase an item knowing its nutritional make-up (calorie, fat content, etc.) and will be better able to judge what contribution that item will make to their well-being.

HIGHLIGHTS (continued)
Descriptors

- **Terms such as "low," "reduced," "diet," "free," "calorie free," "lean," "cholesterol free," "sugar free," "fat free," "light," "low in saturated fat," "fresh," "fresh frozen," and "quickly frozen" all have clearly defined meanings and can be used only on labels in the context of their newly prescribed definitions.**
- **The terms "high in" and "source of" are intended to emphasize the benefits of certain nutrients that decrease the risk for chronic diseases. "High in" is 20 percent or more of the RDI or the DRV. "Source of" is 10 to 19 percent of the RDI or the DRV.**

New USDA requirements would see mandatory disclosures on total calories and calories from fat as well as on the total fat and saturated fat content of meat and poultry products. USDA proposes to exempt from the requirement small, individually wrapped packages less than half an ounce (14 g). A standardized serving size for raw meat and poultry (3 ounces cooked or 85 g) would be required for 23 meat and 22 product categories.

In the past, food companies could decide on their own serving size and their own units of measure. This situation could change in the future. Declared serving sizes will need to be uniform, consistent across product lines and closer to the amounts people actually eat. Special portion sizes for infants and children from 1 to 3 years of age would have to be shown

on packages of products formulated for that age group.

USDA has accepted FDA descriptive terminology and will define nine core descriptive terms. If the standard serving of a meat and poultry product is less than 0.5 g, it could, for example, be labelled "fat free" while "low fat products" must contain 3 g or less of fat per standard serving size. "Lite" products must have at least a one-third reduction in the number of calories compared with "a reference food."

In the case of meat and poultry, products with less than 10.5 g of fat, 3.5 g of saturated fat and 94.5 mg of cholesterol per 100 g can be labelled as "lean." For "extra lean," the requirements are less than 4.9 g of fat, 1.8 g of saturated fat and 94.5 mg of cholesterol per 100 g. The terms "lean" and "extra lean" for meat and poultry products are not to be used on any other food labels.

Voluntary Labelling and Product Development

To what extent the voluntary labelling guidelines will be followed remains to be seen. In a static U.S. food market, where consumer growth in demand for many items is less than 1 percent annually, some U.S. players may see a new marketing opportunity. With public interest in health and nutrition growing, processors and retailers may find the government-led labelling initiative worth exploiting as a means of gaining better acceptance and market share for many branded raw or fresh product lines.

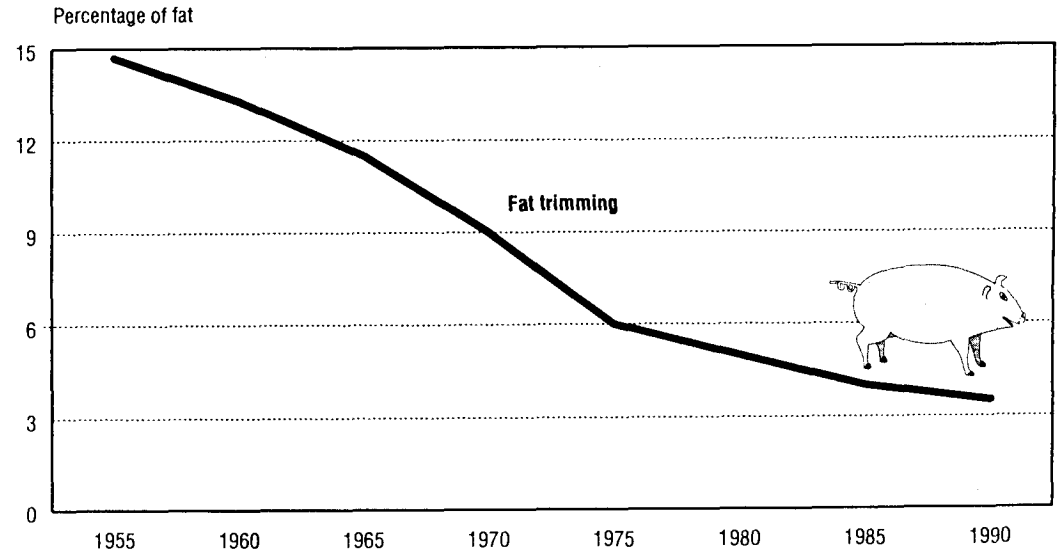
Product development will also now be an area of activity worth watching closely. The desire to produce "life style" and "life stage" food products is already a strong force in the U.S. market. Many industries are working to change their products to improve the health and in many cases the environmental image associated with them. They may use the opportunity of the changes in the new labelling requirements to promote products having lower fat levels as more nutritious products. For example, while processed meat is generally thought of as being fatty and salty, variations of it could be reprofiled as light and healthy food.

The American Meat Institute advises that fresh beef and pork average 30 percent less fat than they did ten years ago, as the accompanying figure for pork fat trimming indicates. Producers of these items, which have been steadily losing ground to their poultry counterparts, feel they have "a story to tell," and seem to be welcoming the new labelling requirements, which in meat products could affect a market worth $100 billion annually in sales.

HIGHLIGHTS (concluded)
Health Claims
Food labels will be able to carry claims about relationships between food and certain diseases or health conditions, provided there is scientific evidence to support the claim.

- **For the following four cases, there is considered to be sufficient scientific evidence:**
  - **calcium and osteoporosis**
  - **sodium and hypertension**
  - **fat and cardiovascular disease**
  - **fat and cancer.**
- **On other health claims such as fibre and heart disease and fibre and cancer, FDA is still reserving judgment, but additional claims would be permitted over time as scientific findings provide confirmation.**

Figure 3 – Fat Reduction in U.S. Hogs



Source: U.S. Department of Agriculture.

Implementation Considerations

The legal basis for making these changes is a federal statute known as the *Nutrition Labeling and Education Act* of 1990. A lot of work has already been done by U.S. authorities, but much remains to be decided regarding which Canadian manufacturers will have an interest. FDA has already made its intentions known on certified colour additives, definitions of serving sizes, approved certain health claims, etc. Still to come are decisions on the format of a standard food label and on the granting of exemptions to states from having to comply if they already have similar laws, to name but a few examples before the final rules can be published.

The U.S. government recognizes that there are significant costs for its domestic food manufacturers and retailers in making labelling changes. Costs on products for which the two agencies are responsible for have been estimated to be $2.8 billion. The social and economic benefits of reduced medical costs and increased productivity arising from a healthier diet are considered to be worth the investment.

Canadian manufacturers looking south to the U.S. and its $300 billion food retail market will also have implementation costs and will have to keep track of the new requirements as they are decided upon.

It should be stressed that this article was prepared based on the best available information at the time of writing. Some modifications could result from the public consultation process now completed.

For further information from the ISTC Food Products Branch, telephone (613) 954-3090. However, only U.S. authorities can officially advise on actual requirements of the *Nutrition Labeling and Education Act*, including new labelling rules. FDA or USDA can be contacted in Washington, D.C., directly. For FDA, telephone (202) 245-1144, and for USDA assistance, telephone (202) 720-4623.

ISO 9000

by Food Products Branch staff*

* Technical assistance was contributed by Canadian General Standards Board, Standards Council of Canada, Agriculture Canada, Canadian Standards Association, and Fisheries and Oceans Canada.

A great deal has been said and written in business circles about Total Quality Management (TQM). Most recently, the discussion has shifted to include the ISO 9000 series of standards that relate to quality management systems developed by the International Organization for Standardization (ISO). Firms in Canada are just now beginning to pay serious attention to these standards. A number have become registered to an ISO 9000 standard but none so far have been food and beverage firms.

Many European food and beverage firms have received an ISO standard (usually ISO 9002) registration over the past three years. In the European Community (EC), market pressures to pursue registration to an ISO 9000 standard seem to be greater than in Canada or the United States. That could change in the near future if interest in ISO 9000 remains and if more firms here become registered.

The following questions and answers have been developed to assist Canadian-based food processing firms make more informed decisions about ISO 9000 and TQM relationships. Some food and beverage associations such as the Food Institute of Canada and leading firms in the sector are now beginning to explore the utility of ISO 9000 registration.

What is the International Organization for Standardization (ISO)?

ISO is a worldwide federation of national standards bodies whose purpose it is to develop and promote the use of international standards. Canada is represented through the Standards Council of Canada. The task of preparing international standards is normally carried out through ISO technical committees of experts in their respective fields. Each participating country interested in a subject for which a technical committee has been established has the right to be actively represented on that committee. ISO covers all fields except electrical and electronic engineering, which are covered by the International Electrotechnical Commission (IEC).

ISO is a non-governmental organization and adoption of any of its standards by member countries or by **industry is purely voluntary**. The organization was founded in 1946 and about 90 countries are currently members.

What are standards and why are they used?

Standards are tools to assist the market. They are technical documents providing solutions or recognized methods for solving identified problems. There are thousands of standards in use throughout the world for everything from nuts and bolts to aircraft and space vehicles. Standards may be company-wide, industry-wide, national, regional or international in scope.

Businesses, governments and consumers all benefit from their use. Standards facilitate trade by specifying requirements for products intended for various markets and they promote safety, reliability and quality in products and services. A product made according to a generally recognized standard yields the following potential benefits:

- greater customer satisfaction;
- value for money; and
- some guarantee or indication of a quality product.

When selling food products internationally the product in question must meet any applicable national health and

safety requirements or standards of the country to which the goods are being shipped. For example, meats exported to EC countries must meet standards set out in what is known as "The Third Country Directive." Meats that are not in accordance with those specifications cannot be sold in any EC country.

There are other examples of standards that must be met by food industry participants wanting overseas business. One of these is the Canadian International Development Agency's (CIDA) Food Aid Program. For example, CIDA has a product standard for the shipment of edible oil as food aid. Suppliers to CIDA must provide a certificate of analysis from an independent laboratory with each shipment attesting that the oil meets the required standard.

Could HACCP be considered as a standard or simply an operating procedure?

Hazards Analysis Critical Control Points (HACCP) is not considered to be a standard in its own right but it is a well-established procedure in many manufacturing operations. In any production process there are usually key problem areas or critical points where the safety and quality of a product could become a problem if not watched closely. In food production, an overriding concern is food safety. For example, recent problems in Europe associated with listeria and salmonella have given rise to concerns about the need for public protection. HACCP procedures deal with this safety problem to control risks and as such might be considered as a critical element of a TQM system in a food processing environment.

The HACCP procedures can be applied to a wide range of food production systems from the monitoring of raw materials through to the finished product to eliminate health hazards. Proper selection of the critical trouble spots (which could be physical, chemical or microbial in nature) and establishment of the correct steps to eliminate each hazard require knowledge and experience with the production process. In some industries, HACCP may be thought of as a safety and quality control measure but, in the food industry, food safety is an essential and integral part of quality.

What international organizations are writing or could potentially write standards for food and beverage products?

Three sets of international standards have been developed by different organizations to serve different purposes, but Canadian, American and European experts have contributed to their development. The European Economic Commission for Europe (a United Nations organization with widespread European membership as well as the former U.S.S.R., the U.S. and Canada) has standards for fruits and vegetables. The Food and Agriculture Organization (FAO) and the World Health Organization (WHO), also UN organizations, have developed the more scientifically oriented Codex Alimentarius standards. Finally ISO, through the work of its technical committee known as ISO/TC34, has also produced standards for food.

What is the Standards Council of Canada?

The Standards Council of Canada, based in Ottawa, was created by an Act of Parliament in 1970 to foster and promote the voluntary use of standards. The council coordinates and acts as a focal point for standardization activities in Canada. It sets out policies and procedures for the development of national standards and accredits certification and testing organizations working in the country.

What organizations in Canada have been accredited by the Standards Council of Canada to write consensus standards?

Five organizations have been accredited as national standards writing organizations in Canada:

- Bureau de normalisation du Québec (BNQ);
- Canadian Gas Association (CGA);
- Canadian General Standards Board (CGSB);
- Canadian Standards Association (CSA); and
- Underwriters Laboratories of Canada (ULC).

What organizations in Canada have written technical national standards for food products?

Food industry interest in having product standards written has been less than that in some other industrial sectors. Much of the government regulation in the food and beverage industry, designed to ensure that food is not hazardous or injurious to human health, may have supplanted the need for other product standards for food and beverages sold in the domestic market.

CGSB, part of Supply and Services Canada, has written product standards for a range of food products in its 32-GP series. Related items such as 146-GP-1M set a standard for pet food production and the 52 GP series set performance standards for the major pieces of kitchen equipment (such as steam cookers, commercial fryers, and electrical slicing, mixing and peeling machines).

CSA also has standards for a wide range of commercial food production and preparation equipment. These standards are exclusively for preventing electrical shock, safety threats and fire hazards, which are areas in which CSA has expertise.

Total Quality Management (TQM)

TQM refers to the totality of functions necessary for the overall management of products and services to achieve the highest levels of quality.

TQM involves the application of quantitative methods and human resources to improve the material and services supplied to an organization.

TQM integrates philosophy, customer focus, guiding principles, fundamental management techniques, and technical tools and systems to provide a disciplined approach to continuous improvement.

Source: Subhash C. Puri.

What is unique about the ISO 9000 Quality Management and Quality Assurance standards?

Quality is one of the fundamental aims behind the development of a standard for any product. The ISO 9000 series is one of the first international sets of standards dealing exclusively with the quality concept on a generic basis. The ISO 9000 quality standards could be adopted for almost any industry inside or outside the food sector. Any kind of manufactured good or service from chocolate bars to fast food service firms or grocery stores could potentially become registered to an ISO 9000 quality standard.

How does a firm decide which ISO standard to adopt?

There are three standards (namely ISO 9001, ISO 9002 and ISO 9003) to choose from. ISO 9001 is a standard generally of interest to engineering and construction firms and organizations heavily into research design and development projects. Manufacturers that design, develop, produce or install and service products would also be interested in this standard.

ISO 9002 is a standard of particular interest to firms in the food industry. Many European food companies in the past three years have attained ISO 9002 registration. Firms with existing processing operations — that is, they buy inputs, transform them and/or combine them to form a new product — would be potentially interested in this standard. Firms that are particularly interested in having their current manufacturing process registered as a quality production system would look at ISO 9002.

ISO 9003 is of interest only to organizations that inspect and test products. Firms less interested with the manufacturing process but rather in the quality assurance of the final product itself would choose this standard.

It should not be assumed that one of these standards is better than another. Each standard has its own specific purpose for which it is best suited.

What is the connection between Total Quality Management concepts and the ISO 9000 Quality Management concepts?

Many firms in Canada, both inside and outside the food and beverage industry sector, have or claim to have quality products or have implemented a Total Quality Management (TQM) system to improve the quality of their products or services. Taking TQM seriously can be a potentially challenging undertaking. If a TQM system (or an alternative suitable quality management system) is being rigorously implemented, it is usually fairly easy to make sure that the requirements of the appropriate ISO 9000 quality standard have been included. The advantage of doing so is that a third-party organization can audit (i.e. evaluate a company's operation) and pronounce it as meeting these requirements. Receiving such registration from one of Canada's two independent registrars who perform this function could potentially be advantageous in gaining credibility and recognition in the marketplace as a supplier of consistently reliable quality products or services.

Unlike the ISO 9000 series of standards, **there is no actual standard for TQM.** A company's TQM program will be specially designed to satisfy and enhance

its position in the marketplace. Once set up, a TQM program remains under constant review, with improvements being made as they become feasible.

When Canada adopted the ISO 9000 series recently, was that the first time a set of national standards for quality assurance were available in this country?

The answer is no. The first set of national quality assurance standards were developed in Canada in 1975 and were known as the CAN3-Z299 series. In recognition of the global movement toward the implementation of the ISO 9000 series, Canada has been adopted the ISO 9000 series and has supplemented them with requirements from the Z299 series to ensure ISO 9000 standards would meet unique Canadian conditions. The end result is the Q9000 series. In other words, ISO 9002 in Canada has been adopted as CAN/CSA-Q9002.

Copies of the Q9000 series are available for purchase exclusively from the Canadian Standards Association in Rexdale, Ontario.

What is the new Quality Management Program sponsored by Fisheries and Oceans Canada?

Fisheries and Oceans Canada (F&O) has launched a new initiative called the Quality Management Program (QMP). The QMP was developed by F&O in partnership with the fish processing industry. The program is intended to provide greater assurance that Canadian fish products are safe and wholesome by requiring all federally registered fish processing plants to have a quality management system in place. The QMP will also facilitate the certification process for exported fish, will help prevent problems through early detection, will help harmonization with competitors and markets and will allow F&O to utilize its resources more effectively.

Selected Quality Standards Published by ISO/TC176

ISO 8402 (1986)
Quality – Vocabulary
This standard defines fundamental terms relating to quality concepts.

ISO 9000 (1987)
Quality Management and Quality Assurance Standards: Guidelines for Selection and Use
This standard provides guidance for the selection and use of standards in the ISO 9000 series.

ISO 9001 (1987)
Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing

ISO 9002 (1987)
Quality Systems – Model for Quality Assurance in Production and Installation

ISO 9003 (1987)
Quality Systems – Model for Quality Assurance in Final Inspection and Test
The 9001/2/3 standards provide three levels of quality assurance requirements for contractual situations between a purchaser and a supplier.

ISO 9004 (1987)
Quality Management and Quality System Elements – Guidelines
This standard describes elements by which quality management systems can be developed and implemented voluntarily by a producer.

The QMP requires federally registered fish processing plants to implement a system whereby various critical control points are monitored regularly in accordance with standards that they have set. These standards may be higher than or equal to those set out in the Canadian Fish Inspection Regulations. F&O will continue to inspect the fish processing establishments, but under the QMP the establishments will be required to take more responsibility for ensuring compliance with Canadian regulations.

Who in Canada registers ISO 9000?

In Canada there are two registrars:
- CGSB; and
- Quality Management Institute (QMI), a subsidiary of CSA.

When a registrar conducts an audit for the purpose of registering a company to an ISO 9000 standard, what are some of the things that will be examined?

There will be some variations depending on the kind of operation and the particular standard for which the organization in question is seeking registration. In any case, the following are possible elements that would be examined:
- effectiveness of the quality system;
- validation of measurements;
- regular calibration of measuring and testing equipment;
- use of appropriate statistical techniques where required;
- presence of a product identification and traceability system;
- adequacy of the record keeping system;
- adequacy of the product handling storage, packaging and delivery system;
- adequacy of the inspection and testing system;
- procedures for dealing with non-conforming items;
- adequacy of personnel training and experience; and
- independence of decision on non-conforming items from production management.

The ISO 9000 Registration Process

Company decides to pursue registration to an ISO 9000 standard.

Company prepares the following three tiers of documents describing their operations vis-à-vis the requirements of the applicable ISO 9000 standard:
- **Quality Manual – company policy and approach to quality**
- **Procedural Manual – for each department, general operating procedures and objectives describing who, what, where, when and why**
- **Work Instructions – machine/equipment instructions on how to carry out the work.**

Company chooses the registrar and makes an application for registration.[1]

The registrar carries out the complete audit procedures and registers the company to ISO 9000. Maintaining and improving a TQM system or quality management system along with registration to an ISO 9000 standard is an ongoing process.

[1] A company may elect to obtain the assistance of a registrar in its decision-making process at a much earlier stage. There are costs involved in employing the services of a registrar.

Once a firm has been registered to an ISO standard, how long is the registration for the product or process in question valid?

Registration is valid for a set period of time. Depending on the registrar, it can be up to three years. During that time, a company will be subjected to audits at intervals to ensure that no slippage from the standard has occurred.

If a firm has received registration at one of its plants for a given product or plant, does that registration automatically apply to all plants?

The answer is no. Registration for an ISO 9000 standard must be sought for each plant and/or each product line or family of products.

Many firms have processes or manufacturing systems that it may not want to fall into the hands of competitors. Are these firms precluded from ISO 9000 registration?

Not necessarily. Each situation needs to be dealt with individually with the registrar to determine whether or not an audit could be conducted that would still lead to a successful registration while at the same time enabling a company to protect certain strategic information. In many cases, this is not an insurmountable problem since ISO 9000 standards are not in themselves highly technical but instead are generic quality management-oriented standards.

Will it be necessary to become registered to ISO 9000 standards to do business in the U.S. or overseas in the near future?

In the short run Canadian firms selling into the U.S. food market will probably not be hindered by the lack of ISO 9000 registration if they have already been in that market for several years, have become well known and have built up a good reputation there. The same probably applies in Japan also, although quality is an important consideration there. Understanding the peculiar characteristics that particular oriental market wants and providing it will continue to be the priority considerations.

The situation in the EC seems to be somewhat different. EC-based food and beverage companies have been very actively seeking and obtaining ISO 9000 registration. For example, the National Standards Authority of Ireland in Dublin advises that, by the end of 1991, about 11 percent of all Irish firms that had obtained ISO 9000 registration were in the food and beverage sector. The table at the end of this article identifying companies in Ireland with ISO 9002 registration is typical of what seems to be happening in other EC countries. Food and beverage firms, both large and small, in a wide range of product areas have sought or are seeking registration in western Europe.

There is a growing inclination on the part of the EC business community, having made the decision to obtain registration, to tell suppliers that they want to buy goods and services exclusively from those companies who themselves have achieved registration. U.S. multinationals are now beginning to feel the pressure of obtaining ISO 9000 registration to protect existing markets in western Europe and are beginning to show strong interest in reaching that goal. If ISO 9000 registration becomes widespread in the U.S., Canadian-based firms may find in the longer run that ISO registration could be necessary to do business in the U.S. as well as elsewhere.

Table 1 – Food and Beverage Companies in Ireland with ISO 9002 Registration

Company name		Product description	Reg. Date
Avonmore Cheese Ltd.		Cheddar cheese	1989-12-04
Avonmore Co-op Miloko		Dairy spreads	1990-04-30
Avonmore Food Products		Rennet Casein	1989-06-26
Avonmore Foods PLC		Animal feeds	1991-05-15
Avonmore Foods PLC		Liquid milk processing	1990-11-05
Ballyclough Co-op	– Macroom	Powder	1990-11-05
Ballyclough Co-op Dairies		Milk powder	1990-07-16
Carberry Milk Products		Cheddar, whey powder, whey protein powder	1989-12-18
CMP Dairy		Liquid milk, cream, yogurt, desserts	1991-10-10
Cow and Gate Wexford Ltd.		Infant milk food	1991-04-25
D.D. Williamson Ireland		Caramel colouring	1990-11-05
Dawn Dairies	– Cork	Liquid milk and related products	1991-01-24
	– Galway	Liquid milk and cream	1991-01-24
	– Killarney	Liquid milk and low fat milk, cream	1990-12-10
	– Moute	Liquid milk and related products	1991-01-24
	– Limerick	Liquid milk and related products	1991-01-18
Erin Foods		Dried formulated products - soups, gravies, meals	1991-11-18
Gilbeys of Ireland (Manuf.) Ltd		Cream liqueurs	
Lakeland Dairies		Butter (salted and unsalted)	1991-03-08
Lombardstowm Feed Mill		Animal/poultry feedstuffs	
Mallow Foods Ltd		Air dried vegetables, air dried meat	1991-05-10
North Kerry Milk Products Ltd.		Butter, spreads, casein	1990-10-06
Odlum Group Ltd.	– Cork	Wheat products and by-products	1991-05-23
	– Portarlington	Wheat flours, wheat meals, wheat feeds	1991-11-18
Rowntree Mackintosh		Chocolate crumb	1990-04-23
Siuicre Eireanne CPT		Sugar	1991-05-30
Swissco Ltd.		A range of ambient storage ready meals	1991-06-07
T. McDairy Products Ltd.		Dairy Products	1990-12-10
Virginia Milk Products Ltd.		Cream mix for Baileys Irish Cream liqueur	1991-10-10
Walsh Mushroom Ltd.		Mushrooms	1991-02-13
Waterford Foods Dairy Division		Butter, salted sweet cream cheese, spreadable cream	1991-03-19
Waterford Foods Ireland Ltd.		Yoplait, yogurt, yop, cheese, spreadable cream	1990-06-16
Waterford Foods PLC Cheese Division		Cheddar and leerdammer cheese	1991-03-13
Yeast Product Company		Bakers' yeast	1991-07-02

Source: National Standards Authority, Ireland.

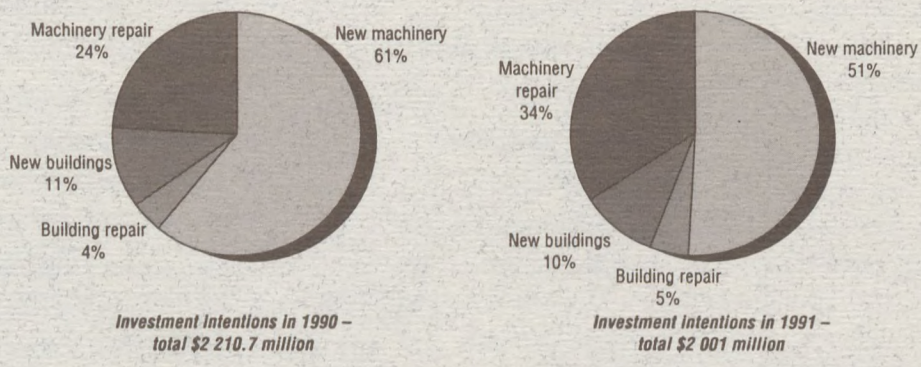
Facts and Figures

by Food Products Branch staff

- Processed food industry sales were down nearly 2 percent in 1991 compared with 1990 but operating profits were up nearly 1 percent in 1991.
- Mergers, acquisitions and new investment activity are slowing.
- Restructuring of Canadian operations is occurring at all levels (manufacturing, distribution and retailing) as firms drive costs out of the system.
- Food services, including restaurants, are seeing the largest sales declines as people head back to the grocery store.
- Exports of processed food, beverages and related products declined in 1991 over 1990 levels but imports continued to rise.

The Investment Picture... more expenditure on repairs to buildings and equipment in 1991 than in 1990 and less on new capital investment....

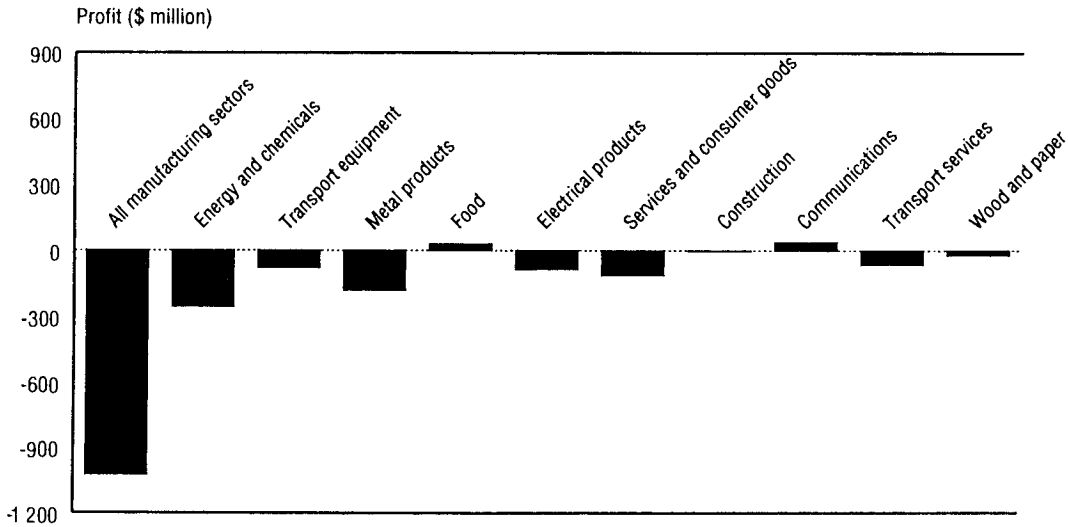
Figure 4 – Food Industry Investment Intentions, 1990 and 1991



Source: Statistics Canada.

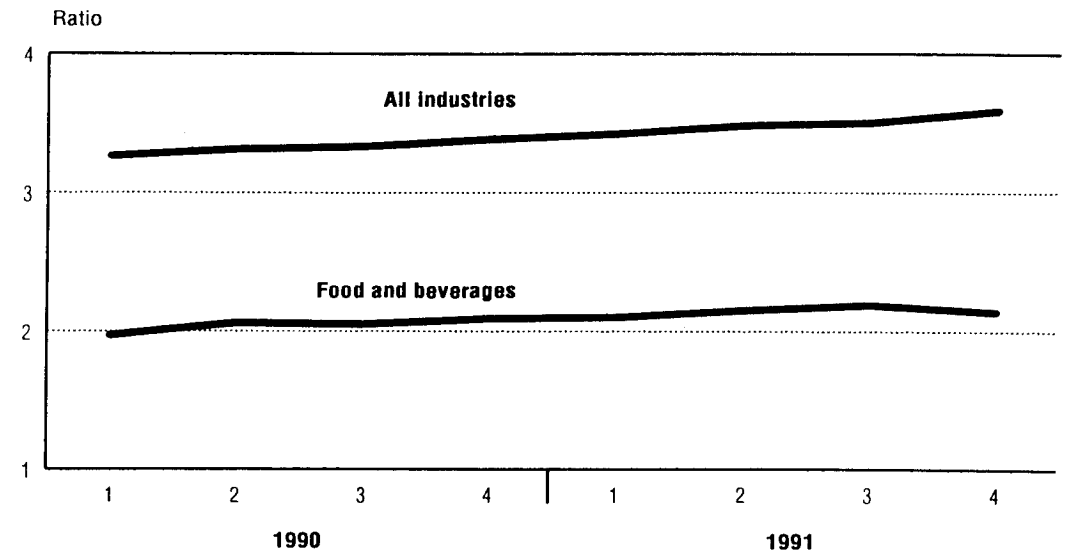
The Financial Picture... stronger profits and a more favourable debt to equity ratio than other manufacturing industries....

Figure 5 – Average Quarterly Change in Operating Profits for Eight Quarters Ending December 1991



Source: Statistics Canada.

Figure 6 – Comparison of Total Debt to Equity Ratio, All Industries versus Food and Beverage Industry, 1990 and 1991



Source: Statistics Canada.

The Food and Beverage Industry... an up-to-date profile for selected sectors....

Table 2 – Selected Food and Beverage Principal Statistics, Estimates, 1991
(number or $ million)

Product	Number of Plants	Total employment	Shipments value	Exports value	Imports value
Fish products	470	29 000	2 600	2 400	750
Red meat and by-products	520	29 000	8 500	1 200	1 000
Poultry and eggs	100	12 500	2 100	35	160
Fruit and vegetables (canned, frozen)	225	18 000	3 000	370	660
Dairy products	350	26 000	7 400	170	140
Biscuits, bakery, pasta	575	30 000	2 200	200	330
Flour, flour mixes and breakfast cereals	70	6 000	1 500	100	70
Confectionery	150	14 000	1 700	200	400
Vegetable oils	10	1 000	850	165	100
Soft drinks	150	8 500	2 000	110	90
Brewery products	50	13 500	2 700	180	60
Wine industry	40	1 300	275	–	350
Distillery products	25	3 900	900	425	200
Tea and coffee	40	3 000	850	45	400
Pet foods	110	1 800	500	60	150
Total	**2 885**	**197 500**	**37 050**	**5 660**	**4 860**

Source: Based on data from Statistics Canada.

The Overall Trade Picture at a glance... food imports are growing much faster than exports....

Table 3 – Canadian Trade in Food and Related Products, 1988 and 1991
($ million or percentage of total)

	Exports					Imports			
	1988		1991			1988		1991	
	Value	Share	Value	Share		Value	Share	Value	Share
U.S.	3 561	56	4 186	66	U.S.	2 349	44	3 306	52
Japan	1 039	16	795	12	EC	988	18	1 072	16
EC	801	13	724	11	Australia	316	6	297	5
Taiwan	106	2	78	1	Brazil	235	4	232	4
Republic of Korea	70	1	41	1	New Zealand	149	3	138	2
Mexico	58	1	21	–	Mexico	68	1	50	1
Other	728	11	544	9	Other	1 287	24	1 266	20
Total	**6 363**	**100**	**6 389**	**100**	**Total**	**5 392**	**100**	**6 361**	**100**

Source: Based on data from Statistics Canada.

The Export Trade Picture... a detailed analysis illustrates a static growth pattern....

Table 4 – Summary of Food and Beverage Exports, 1988-91
($ million)

Product	1988	1989	1990	1991	% change 1988-91
Fish, fresh or chilled	549.2	533.2	583.6	639.1	+16
Fish, frozen	377.1	329.3	321.5	254.0	-33
Fish, fillets, blocks and slabs	793.8	676.7	752.2	680.4	-14
Fish, dried, salted, smoked	403.4	357.6	434.0	386.5	-4
Crustaceans, molluscs, frozen, dried	251.6	182.2	238.4	185.0	-26
Fish in containers, in meals	323.2	288.6	255.8	276.2	-15
Beef, cuts, carcasses, edible offal	193.1	252.0	253.4	248.4	+29
Pork, cuts, carcasses, edible offal	604.6	552.9	624.4	501.9	-17
Processed meat	71.6	71.9	95.0	97.5	+36
Other meat (lamb, rabbit, horse)	81.7	77.9	69.7	66.7	-18
Poultry and eggs	26.2	26.0	31.0	34.3	+31
Canned, preserved fruit and vegetables	206.8	208.9	222.4	218.2	+6
Frozen fruits and vegetables	147.4	155.6	153.9	151.3	+3
Dairy products	196.1	180.1	194.0	169.4	-14
Maple syrup, honey, peanut butter, nuts	60.2	63.9	54.7	68.9	+15
Spices, herbs, flavourings, seasonings	20.6	8.5	1.0	1.5	-93
Flour mixes and breakfast cereals	10.0	16.3	36.2	58.0	+480
Biscuits industry	152.7	134.2	152.7	171.3	+12
Bakery products	12.6	9.4	14.8	13.1	+4
Dry pasta	18.7	17.8	23.9	24.5	+31
Chewing gum and confectionery	122.3	122.3	180.7	205.5	+68
Refined vegetable oils	7.5	6.9	13.6	31.7	+322
Miscellaneous food items	103.9	91.1	117.8	177.2	+70
Total – food	**4 734.3**	**4 363.3**	**4 824.7**	**4 660.6**	**-2**
Fruit and vegetable juices	25.8	20.7	18.0	17.6	-32
Tea and coffee	21.9	34.0	39.3	45.8	+109
Soft drinks and mineral waters	13.6	17.7	44.8	112.6	+728
Distillery products, other alcohol, spirits	311.6	271.0	455.8	426.1	+37
Brewery products	211.1	214.8	204.1	183.9	+13
Drink preparations (cocktail mixes)	-	-	-	-	-
Wine, cider, vermouth	3.9	1.2	1.3	1.1	-72
Total – beverages	**587.9**	**559.4**	**763.3**	**787.1**	**+34**
Crude vegetable oils	202.3	115.9	111.3	131.9	-35
Sugar, raw, refined, molasses	30.7	20.9	21.2	22.0	-29
Malt and malt extracts	62.4	89.7	93.9	89.3	+44
Glucose and fructose	47.5	80.8	70.0	58.8	+23
Cereal flour	50.9	62.3	50.0	47.7	-6
Pet foods	19.9	39.0	61.7	57.6	+190
Prepared animal feeds	45.6	40.1	47.1	48.7	+6
Pet food and animal feed ingredients	295.8	251.6	248.9	247.1	-17
Hides, skins, horse hair and feathers	257.4	244.0	287.0	207.2	-19
Other industrial inputs (non-food use)	27.8	28.6	31.5	31.1	+11
Total – pet foods, animal feeds and industrial inputs	**1 040.3**	**972.9**	**1 022.6**	**941.4**	**-10**
Total export trade	**6 362.5**	**5 895.6**	**6 610.6**	**6 389.1**	**< 1**

Source: Based on data from Statistics Canada.

... and among the major destinations for Canadian food and related products, the U.S. dominates....

Table 5 – Summary of Food and Beverage Exports, by Country of Destination, 1991 ($ million)

Product	U.S.	Japan	EC	Taiwan	Republic of Korea	Mexico
Fish, fresh or chilled	524.3	38.0	59.1	3.6	0.4	–
Fish, frozen	32.7	154.5	43.1	3.5	2.8	0.1
Fish fillets, blocks and slabs	599.4	17.3	48.8	0.3	0.5	–
Fish, dried, salted, smoked	90.1	133.4	107.9	0.2	–	0.1
Crustaceans, molluscs, frozen, dried	49.1	76.8	46.4	0.4	0.8	–
Fish in containers, in meals	127.8	9.6	96.7	0.4	0.3	–
Beef, cuts, carcasses	226.1	16.5	0.8	0.5	0.2	0.8
Pork, cuts, carcasses	371.5	103.5	2.9	0.1	0.5	3.9
Processed meat	82.5	4.3	0.7	–	–	0.6
Other meat (lamb, rabbit, horse)	5.1	14.6	40.3	–	–	0.1
Poultry and eggs	14.9	10.7	1.2	–	0.5	0.3
Canned, preserved fruit and vegetables	24.1	4.7	111.5	1.4	–	–
Frozen fruits and vegetables	92.4	15.5	33.2	0.4	–	0.2
Dairy products	3.3	18.6	31.8	1.0	0.6	13.7
Maple syrup, honey, peanut butter, nuts	50.6	1.8	13.8	–	0.1	0.3
Spices, herbs, flavourings, seasonings	0.8	–	–	–	–	–
Flour mixes and breakfast cereals	55.8	0.1	0.8	–	0.1	0.2
Biscuits industry	166.7	0.2	2.3	–	–	0.1
Bakery products	10.3	2.2	0.3	–	–	–
Dry pasta	22.6	–	–	–	–	–
Chewing gum and confectionery	199.6	1.2	0.8	0.5	0.4	–
Refined vegetable oils	26.2	0.1	–	0.4	–	–
Miscellaneous food items	141.2	4.4	12.4	1.2	0.4	–
Total – food	**2 917.1**	**628.0**	**654.8**	**13.9**	**7.6**	**20.4**
Fruit and vegetable juices	15.8	0.1	–	0.1	–	–
Tea and coffee	45.5	–	–	–	–	–
Soft drinks and mineral waters	107.7	0.7	2.8	–	–	–
Distillery products, other alcohol, spirits	380.5	11.5	22.4	0.4	0.4	0.5
Brewery products	183.8	–	0.1	–	–	–
Drink preparations (cocktail mixes)	–	–	–	–	–	–
Wine, cider, vermouth	0.3	0.4	0.2	–	–	0.1
Total – beverages	**733.6**	**12.7**	**25.5**	**0.5**	**0.4**	**0.6**
Crude vegetable oils	112.4	4.9	0.3	0.3	1.4	–
Sugar, raw, refined, molasses	19.2	–	–	–	–	–
Malt and malt extracts	7.1	70.7	–	–	4.3	–
Glucose and fructose	58.8	–	–	–	–	–
Cereal flour	6.4	0.1	0.7	–	–	–
Pet foods	51.1	3.7	1.8	0.1	–	–
Prepared animal feeds	42.2	1.0	0.8	–	0.9	–
Pet food and animal feed ingredients	138.8	48.8	29.0	0.1	3.7	0.3
Hides, skins, horse hair and feathers	72.3	24.8	9.7	63.4	23.1	–
Other industrial inputs (non-food use)	26.9	0.6	1.8	–	–	0.1
Total – pet foods, animal feeds and industrial inputs	**535.2**	**154.6**	**44.1**	**63.9**	**33.4**	**0.4**
Total export trade	**4 185.9**	**795.3**	**724.4**	**78.3**	**41.4**	**21.4**

Source: Based on data from Statistics Canada.

The detailed Import Picture... shows steady growth for most food items....

Table 6 – Summary of Food and Beverage Imports, 1988-91
($ million)

Product	1988	1989	1990	1991	% change 1988-91
Fish, fresh or chilled	97.6	102.0	107.5	125.3	+28
Fish, frozen	59.2	76.5	58.4	69.5	+17
Fish fillets, blocks and slabs	70.8	75.1	78.4	78.4	+11
Fish, dried, salted, smoked	10.8	13.3	12.6	10.9	+1
Crustaceans, molluscs, frozen, dried	227.9	234.1	238.6	251.8	+10
Fish in containers, in meals	242.4	255.9	202.9	215.6	-11
Beef, cuts, carcasses	423.6	458.4	553.7	625.9	+48
Pork, cuts, carcasses	34.2	29.5	32.5	35.7	+4
Processed meat	49.4	58.6	72.7	81.7	+65
Other meat (lamb, rabbit, horse)	61.1	67.7	70.1	67.6	+11
Poultry and eggs	89.1	126.3	158.4	155.5	+75
Canned, preserved fruit and vegetables	478.0	508.9	535.3	606.8	+27
Frozen fruits and vegetables	45.7	44.2	79.0	55.7	+22
Dairy products	143.2	135.6	145.3	142.5	-1
Maple syrup, honey, peanut butter, nuts	157.1	170.9	189.3	216.8	+38
Spices, herbs, flavourings, seasonings	88.9	85.2	100.7	113.7	+28
Flour mixes and breakfast cereals	36.7	52.5	51.5	60.6	+65
Biscuits industry	94.7	113.1	133.1	148.8	+57
Bakery products	53.1	64.2	88.2	108.7	+105
Dry pasta	30.0	40.2	56.2	76.0	+153
Chewing gum and confectionery	346.2	333.9	382.8	400.6	+16
Refined vegetable oils	58.9	53.3	55.2	56.4	-4
Miscellaneous food items	159.8	165.9	188.6	220.5	+38
Total – food	**3 058.4**	**3 265.3**	**3 591.0**	**3 925.0**	**+28**
Fruit and vegetable juices	303.6	295.5	322.0	324.6	+7
Tea and coffee	510.0	460.4	393.1	400.4	-21
Soft drinks and mineral waters	39.4	49.5	82.1	89.1	+126
Distillery products, other alcohol, spirits	161.2	206.3	209.7	194.7	+21
Brewery products	43.5	67.5	62.4	56.5	+30
Drink preparations (cocktail mixes)	45.0	49.8	56.6	52.2	+16
Wine, cider, vermouth	265.6	342.1	359.3	336.1	+27
Total – beverages	**1 368.3**	**1 471.1**	**1 485.2**	**1 453.6**	**+6**
Crude vegetable oils	43.4	39.2	43.5	46.2	+6
Sugar, raw, refined, molasses	282.7	258.3	406.4	280.6	-1
Malt and malt extracts	9.5	11.3	13.7	15.5	+63
Glucose and fructose	27.7	40.9	69.7	69.7	+152
Cereal flour	5.1	6.4	10.0	9.0	+76
Pet foods	70.1	94.5	122.0	145.2	+107
Prepared animal feeds	97.2	88.3	84.7	104.1	+7
Pet food and animal feed ingredients	258.6	216.9	177.1	194.7	-25
Hides, skins, horse hair and feathers	90.0	88.3	73.9	49.8	-45
Other industrial inputs (non-food use)	81.4	94.7	75.6	67.5	-17
Total – pet foods, animal feeds and industrial inputs	**965.7**	**938.8**	**1 076.6**	**982.3**	**+2**
Total import trade	**5 392.4**	**5 675.2**	**6 152.8**	**6 360.9**	**+18**

Source: Based on data from Statistics Canada.

... and the U.S. also has a strong position as the primary source of imports....

Table 7 – Summary of Food and Beverage Imports, by Country of Origin, 1991
($ million)

Product	U.S.	EC	Australia	Brazil	New Zealand	Mexico
Fish, fresh or chilled	114.6	4.4	–	–	0.4	–
Fish, frozen	51.8	2.1	–	0.1	0.1	–
Fish fillets, blocks and slabs	38.3	16.1	0.3	0.1	5.3	–
Fish, dried, salted, smoked	1.9	2.2	0.2	–	–	–
Crustaceans, molluscs, frozen, dried	78.1	4.3	0.9	1.9	1.1	1.4
Fish in containers, in meals	79.3	10.3	0.1	–	0.2	0.1
Beef, cuts, carcasses	408.4	–	106.4	–	80.9	–
Pork, cuts, carcasses	19.8	15.9	–	–	–	–
Processed meat	58.5	2.1	3.7	8.3	0.1	–
Other meat (lamb, rabbit, horse)	20.9	1.2	10.3	–	31.2	–
Poultry and eggs	153.5	0.8	–	–	–	–
Canned, preserved fruit and vegetables	324.7	77.4	38.3	2.5	0.4	3.6
Frozen fruits and vegetables	37.3	1.7	–	–	0.1	7.6
Dairy products	22.5	79.8	0.4	–	8.2	–
Maple syrup, honey, peanut butter, nuts	114.2	3.6	0.5	19.1	0.4	–
Spices, herbs, flavourings, seasonings	78.8	9.3	–	0.4	–	0.1
Flour mixes and breakfast cereals	59.1	0.6	–	–	–	–
Biscuits industry	83.6	48.7	0.1	–	0.1	–
Bakery products	95.9	9.9	–	–	–	–
Dry pasta	40.6	12.6	–	–	–	–
Chewing gum and confectionery	164.6	134.9	0.5	29.4	–	0.6
Refined vegetable oils	23.5	22.5	–	–	–	–
Miscellaneous food items	170.3	25.0	0.6	2.1	–	0.1
Total – food	**2 240.2**	**485.4**	**162.3**	**63.9**	**128.5**	**13.5**
Fruit and vegetable juices	160.4	14.3	1.6	102.0	2.8	1.8
Tea and coffee	74.3	61.6	–	58.7	–	18.0
Soft drinks and mineral waters	51.4	30.1	3.9	–	–	–
Distillery products, other alcohol, spirits	18.3	131.4	0.1	4.7	–	11.2
Brewery products	32.5	16.6	0.7	–	0.3	4.3
Drink preparations (cocktail mixes)	48.9	2.4	–	–	–	–
Wine, cider, vermouth	39.0	262.0	13.8	–	0.4	–
Total – beverages	**424.8**	**518.4**	**20.1**	**165.4**	**3.5**	**35.3**
Crude vegetable oils	17.2	14.2	–	0.3	–	–
Sugar, raw, refined, molasses	39.5	13.4	113.2	–	–	–
Malt and malt extracts	2.4	12.2	0.9	–	–	–
Glucose and fructose	66.9	2.7	–	–	–	–
Cereal flour	8.0	0.1	–	–	–	–
Pet foods	136.9	1.5	–	–	–	–
Prepared animal feeds	79.5	16.8	–	2.3	–	0.3
Pet food and animal feed ingredients	194.6	–	–	–	–	–
Hides, skins, horse hair and feathers	41.5	0.5	–	–	3.3	–
Other industrial inputs (non-food use)	54.2	7.0	–	0.1	2.4	0.7
Total – pet foods, animal feeds and industrial inputs	**640.7**	**68.4**	**114.1**	**2.7**	**5.7**	**1.0**
Total import trade	**3 305.7**	**1 072.2**	**296.5**	**232.0**	**137.7**	**49.8**

Source: Based on data from Statistics Canada.

Here are some other interesting features of Canadian trade.

Table 8 – Trade in High-valued Foods
($ million)

Product	Exports				Imports			
	1988	1989	1990	1991	1988	1989	1990	1991
Fish in containers, in meals	323	289	256	276	242	256	203	216
Processed meat	72	72	95	98	49	59	73	82
Fowl meat, in containers, in meals	6	6	12	9	28	47	61	48
Canned vegetables, canned fruit, jams and juices	71	75	68	58	630	642	690	759
Dairy products, excluding fluid milk and milk powder	78	73	75	92	140	128	138	137
Biscuits, bakery, pasta	184	161	191	209	178	217	277	334
Chewing gum, sugar candy, chocolate confectionery	121	114	173	198	220	224	272	294
Tea, coffee, soft drinks, mineral waters	36	52	84	158	549	510	475	490
Alcoholic beverages	527	487	661	611	471	616	631	588
Refined vegetable oils	8	7	14	32	59	53	55	56
Total	**1 426**	**1 336**	**1 629**	**1 741**	**2 566**	**2 752**	**2 875**	**3 004**

Source: Based on data from Statistics Canada.

Note: Meat and fish items are basically those described in Chapter 16 of the Customs Tariff while fruit and vegetable products are from Chapter 20. In confectionery, partially processed items are excluded.

Table 9 – Fastest-growing Exports, 1988-91
($ million)

Product	1988	1989	1990	1991	% increase 1988-91
Soft drinks and mineral waters	13.6	17.7	44.8	112.6	728
Flour mixes and breakfast cereals	10.0	16.3	36.2	58.0	480
Refined vegetable oils	7.5	6.9	13.6	31.7	322
Pet foods	19.9	39.0	61.7	57.6	190
Tea and coffee	21.9	34.0	39.3	45.8	109
Chewing gum and confectionery	122.3	122.3	180.7	205.5	68

Source: Table 4.

Table 10 – Fastest-growing Imports, 1988-91
($ million)

Product	1988	1989	1990	1991	% increase 1988-91
Dry pasta	30.0	40.2	56.2	76.0	153
Pet foods	70.1	94.5	122.0	145.2	107
Bakery products	53.1	64.2	88.2	108.7	105
Poultry and eggs	89.1	126.3	158.4	155.5	75
Beef, cuts, carcasses	423.6	458.4	553.7	625.9	48
Canned, preserved fruits and vegetables	478.0	508.9	535.3	606.8	27

Source: Table 6.

ISTC Business Service Centres

These centres have been established at headquarters and in every regional office to provide clients with a gateway into the complete range of ISTC services, information products, programs and expertise.

Regional Offices

NEWFOUNDLAND
ISTC
Suite 504
Atlantic Place
215 Water Street
P.O. Box 8950
ST. JOHN'S, Nfld.
A1B 3R9
Tel.: (709) 772-ISTC
Fax: (709) 772-5093

PRINCE EDWARD ISLAND
ISTC
Suite 400
National Bank Tower
Confederation Court Mall
134 Kent Street
P.O. Box 1115
CHARLOTTETOWN, P.E.I.
C1A 7M8
Tel.: (902) 566-7400
Fax: (902) 566-7450

NOVA SCOTIA
ISTC
5th Floor
Central Guaranty Trust Tower
1801 Hollis Street
P.O. Box 940, Station M
HALIFAX, N.S.
B3J 2V9
Tel.: (902) 426-ISTC
Fax: (902) 426-2624

NEW BRUNSWICK
ISTC
12th Floor
Assumption Place
770 Main Street
P.O. Box 1210
MONCTON, N.B.
E1C 8P9
Tel.: (506) 857-ISTC
Fax: (506) 851-6429

QUEBEC
ISTC
Suite 3800
800 Tour de la Place Victoria
P.O. Box 247
MONTREAL, Que.
H4Z 1E8
Tel.: (514) 283-8185
or 1-800-361-5367
Fax: (514) 283-3302

ONTARIO
ISTC
4th Floor
Dominion Public Building
1 Front Street West
TORONTO, Ont.
M5J 1A4
Tel.: (416) 973-ISTC
Fax: (416) 973-8714

MANITOBA
ISTC
8th Floor
330 Portage Avenue
P.O. Box 981
WINNIPEG, Man.
R3C 2V2
Tel.: (204) 983-ISTC
Fax: (204) 983-2187

SASKATCHEWAN
ISTC
Suite 401
119 – 4th Avenue South
SASKATOON, Sask.
S7K 5X2
Tel.: (306) 975-4400
Fax: (306) 975-5334

ALBERTA
ISTC
Suite 540
Canada Place
9700 Jasper Avenue
EDMONTON, Alta.
T5J 4C3
Tel.: (403) 495-ISTC
Fax: (403) 495-4507

ALBERTA
ISTC
Suite 1100
510 – 5th Street Southwest
CALGARY, Alta.
T2P 3S2
Tel.: (403) 292-4575
Fax: (403) 292-4578

BRITISH COLUMBIA
ISTC
Suite 900
Scotia Tower
650 West Georgia Street
P.O. Box 11610
VANCOUVER, B.C.
V6B 5H8
Tel.: (604) 666-0266
Fax: (604) 666-0277

YUKON
ISTC
Suite 210
300 Main Street
WHITEHORSE, Y.T.
Y1A 2B5
Tel.: (403) 667-3921
Fax: (403) 668-5003

NORTHWEST TERRITORIES
ISTC
10th Floor
Precambrian Building
P.O. Bag 6100
YELLOWKNIFE, N.W.T.
X1A 2R3
Tel.: (403) 920-8568
Fax: (403) 873-6228

Headquarters

ISTC
1st Floor, East Tower
235 Queen Street
OTTAWA, Ont.
K1A 0H5
Tel.: (613) 952-ISTC
Fax: (613) 957-7942