International Agricultural Trade and Policy Center

# A DESCRIPTIVE ANALYSIS OF CANADA AND MEXICO WHO IMPORT UNITED STATES DAIRY PRODUCTS

**By**

**Xumin Zhang, Richard L. Kilmer, & Andrew Muhammad**

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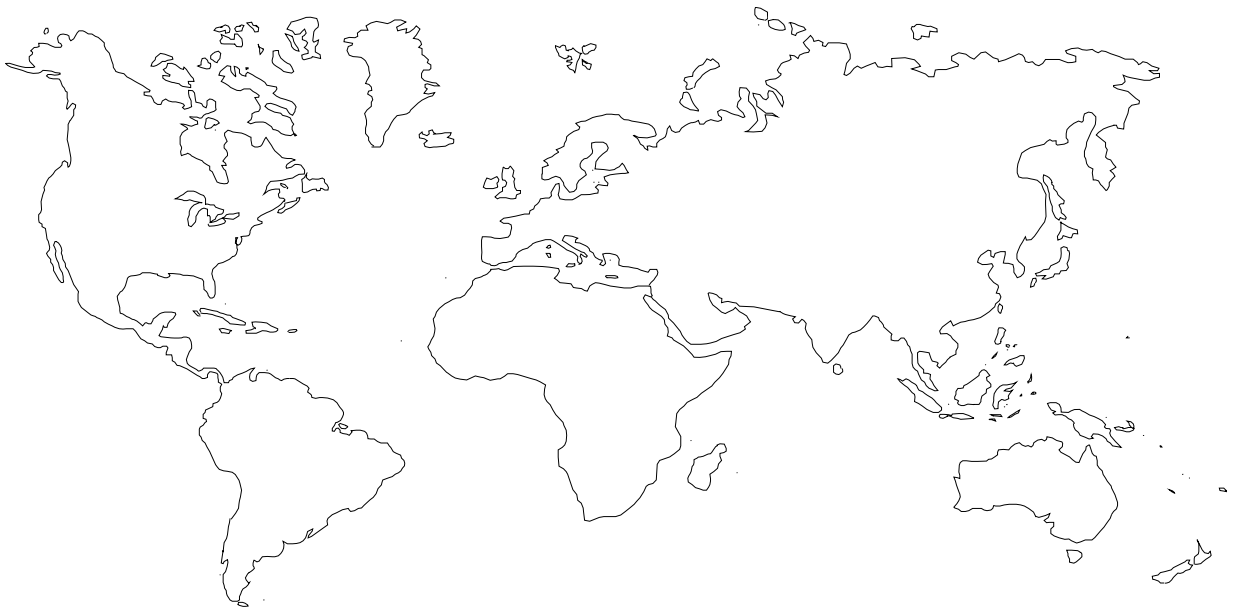

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Xumin Zhang, Richard L. Kilmer and Andrew Muhammad[1]

## INTRODUCTION

World dairy production and trade have experienced increases during the last decade. World trade liberalization, elimination of non-tariff trade barriers, and reduction in dairy export subsidies have increased the United States (US) interest in world dairy markets. The US is in a good position to gain greater access to international dairy markets.

Information by country, which is considered to be a potential importer of U.S. dairy products, and by individual dairy products in the international markets is needed. The information is useful to individuals interested in developing export dairy markets and direct foreign investment in dairy industries in those countries. In the study, 25 dairy import countries were selected from around the world (Table 1). Two countries in North America, Canada and Mexico, are covered in this paper.

[1] Xumin Zhand is a graduate student in the Food and Resource Economics Department at the University of Florida; Richard L. Kilmer is a Professor in the Food and Resource Economics Department at the University of Florida and a member of the International Agricultural Trade and Policy Center (IATPC) at

Table 1. Major importers of U.S. dairy products.

| Canada Mexico | Central America | South America | Caribbean | European Union | East Asia | Southeast Asia | North Africa & Middle East |
|---|---|---|---|---|---|---|---|
| Canada | Guatemala | Chile | Bahamas | Netherlands | Hong Kong | Indonesia | Egypt |
| Mexico | Honduras | Colombia | Bermuda | United Kingdom | Japan | Malaysia | Saudi Arabia |
| | Panama | Venezuela | Dominican Republic | | South Korea | Philippines | |
| | | | Jamaica | | | Thailand | |
| | | | Trinidad & Tobago | | | Vietnam | |

The following paper covers a descriptive analysis for each individual country about the macroeconomic conditions, milk and dairy production, consumption, imports, the US share of the dairy imports, dairy trade policies, and how these factors have changed overtime. The information in this report can provide a starting point for individuals interested in exploring exports to and direct investment opportunities in Canada and Mexico**.**

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the University of Florida; and Andrew Muhammad is an Assistant Professor in the Department of Economics at Southern University.

# OVERVIEW

## World Dairy Production

World production of cow milk increased in the period 1991 to 2001 at an average annual rate of 0.5 percent. In the period 1991 to 1993, world production of milk trended downward from 469,969,290 metric tons in 1991 to 460,185,174 metric tons in 1993 (Table 1). Since then, world production of fresh milk has experienced continuous increases through 2001. In 2001, the world production of cow milk totaled 494,074,772 metric tons, a 1.4 percent increase, compared to 2000 (487,216,313 metric tons) (Table 1). Milk production in Canada and Mexico totaled 17,578,290 metric tons in 2001 (Table 2), or 3.6 percent of the total world production (Table 1).

Overall, in the period 1991 to 2001, world butter production increased at an average annual rate of 0.6 percent. Significant decreases occurred in the period 1991 to 1994 when world butter production decreased from 7,230,211 metric tons in 1991 to 6,626,853 metric tons in 1994, for an average annual decrease of –2.9 percent. Since then, world butter production trended upward through 2001, increasing at an average annual rate of 2.1 percent. World butter production in 2001 was about 7,639,830 metric tons, which was up 3.8 percent from butter production in 2000 (7,361,928 metric tons) (Table 1). Butter production in Canada and Mexico totaled 100,123 metric tons in 2001 (Table 2), which accounted for 1.3 percent of the world butter production (7,639,830 metric tons, Table 1).

Table 1. World milk and selected dairy products production, 1991 through 2001.

| Year | Cow Milk, Whole, Fresh | Butter and Ghee | Cheese (All Kinds) | Whole Milk, Dry | Skim Milk, Dry | Dry Whey |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 469,969,290 | 7,230,211 | 14,273,176 | 2,278,421 | 3,790,059 | 1,591,469 |
| 1992 | 460,815,550 | 7,069,007 | 13,924,948 | 2,223,634 | 3,383,613 | 1,719,527 |
| 1993 | 460,185,174 | 6,949,108 | 14,092,319 | 2,190,812 | 3,435,523 | 1,704,052 |
| 1994 | 461,308,188 | 6,626,853 | 14,413,909 | 2,299,879 | 3,469,588 | 1,721,392 |
| 1995 | 463,742,780 | 6,654,099 | 14,534,298 | 2,297,568 | 3,471,565 | 1,808,545 |
| 1996 | 465,750,719 | 6,728,324 | 14,895,164 | 2,256,240 | 3,359,823 | 1,825,342 |
| 1997 | 468,198,514 | 6,824,872 | 15,182,338 | 2,347,216 | 3,390,716 | 1,797,683 |
| 1998 | 475,397,193 | 6,931,101 | 15,531,190 | 2,424,612 | 3,260,097 | 1,875,487 |
| 1999 | 480,762,511 | 7,140,653 | 15,874,743 | 2,425,512 | 3,400,623 | 1,876,269 |
| 2000 | 487,216,313 | 7,361,928 | 16,451,548 | 2,509,210 | 3,401,153 | 1,927,189 |
| 2001 | 494,074,772 | 7,639,830 | 16,821,541 | 2,633,776 | 3,374,176 | 1,960,928 |
| Average Annual Growth (%) | | | | | | |
| 1991-2001 | 0.5 | 0.6 | 1.7 | 1.5 | -1.1 | 2.2 |

Source: FAO Statistical Databases, 2002

In the period 1991 to 2001, world cheese production increased at an average annual rate of 1.7 percent (Table 1). Particularly in the period 1992 to 2001, world cheese production experienced a continuous increase through 2001, from 13,924,948 metric tons in 1992 to 16,821,541 metric tons in 2001, for an average annual increase rate of 2.1 percent (Table 1). Cheese production in Canada and Mexico totaled 497,837 metric tons

in 2001 (Table 2), accounting for 3.0 percent of the world total cheese production (16,821,541 metric tons, Table 1).

Table 2. Canada and Mexico milk and dairy products production in 2001.

| | Cow Milk, Whole, Fresh | Butter and Ghee | Cheese (All Kinds) | Whole Milk, Dry | Skim Milk, Dry | Dry Whey[a] |
|---|---|---|---|---|---|---|
| | Metric Tons | | | | | |
| NORTH AMERICA | | | | | | |
| Canada | 8,106,000 | 85,150 | 344,330 | 4,000 | 94,520 | 45,000 |
| Mexico | 9,472,290 | 14,973 | 153,507 | 104,250 | 17,500 | --- |
| TOTAL | 17,578,290 | 100,123 | 497,837 | 108,250 | 112,020 | 45,000 |

[a] Whey production in milk equivalent metric tons was not available.
Source: FAO Statistical Databases, 2002.

World production of dry whole milk increased in the period 1991 to 2001 at an average annual rate of 1.5 percent (Table 1). World dry whole milk production fluctuated in the period 1991 to 1996, ranging from a high of 2,299,879 metric tons in 1994 to a low of 2,190,812 metric tons in 1993 (Table 1). Since then, world dry whole milk production has trended upward through 2001. In the period 1996 to 2001, world dry whole milk production increased at an average annual rate of 3.2 percent. In 2001, world dry whole milk production totaled 2,633,776 metric tons, which was up 5.0 percent from 2000 (Table 1). Dry whole milk production in Canada and Mexico totaled 108,250 metric tons in 2001 or 4.1 percent of world production (Table 2)

World dry skim milk production (nonfat dry milk or skim milk powder) has exceeded dry whole milk production during the period 1991 through 2001 (Table 1). However, in

the period 1991 to 2001, world dry skim milk production trended downward, for an average annual decrease rate of –1.1 percent (Table 1). World dry skim milk production experienced fluctuations in the period 1991 to 2001, ranging from a high of 3,790,059 metric tons in 1991 to a low of 3,260,097 metric tons in 1998 (Table 1). Overall, between 1991 and 2001, world dry skim milk production decreased 415,883 metric tons. In 2001, world dry skim milk production totaled 3,374,176 metric tons, which was down 0.8 percent from 2000 (Table 1). Dry skim milk production in Canada and Mexico totaled 112,020 metric tons (Table 2), accounting for about 3.3 percent of the world total dry skim milk production (3,374,176 metric tons) in 2001.

The most growth in the production of milk and its products has occurred in the dry whey market. From 1991 to 2001, the average annual growth in world dry whey production has been 2.2 percent, with periods of increases and decreases (Table 1). World dry whey production trended upward through 2001, from 1,591,469 metric tons in 1991 to 1,960,928 metric tons in 2001, for an overall increase of 369,459 metric tons (Table 1). Mexico doesn't produce dry whey, and Canada produced 45,000 metric tons of dry whey in 2001, accounting for 2.3 percent of the world dry whey production.

## World Imports of Dairy Products

World imports of dairy products in milk equivalent metric tons increased at an average annual growth rate about 2.6 percent in the period 1991 to 2001. In the period 1991 to 1995, world imports of dairy products increased continuously from 52,405,310 metric tons in 1991 to 62,616,493 metric tons in 1995 (Table 3). Although decreases occurred in 1996, 1998, and 2001, world imports of dairy products trended upward through 2001, peaking at 68,138,509 metric tons in 2000 (Table 3). Between 1991 and 2001, world imports of dairy products increased 14,715,220 metric tons, from 52,405,310 metric tons in 1991 to 67,120,530 metric tons in 2001, for an overall increase of 28.1 percent. Dairy imports into Canada and Mexico totaled 3,522,356 metric tons in 2001 (Table 4), and represented 5.2 percent of the world total dairy imports (67,120,530 metric tons, Table 3).

In the period 1991 to 2001, world butter imports decreased at an average annual rate of -0.1 percent. Between 1991 and 2001, world butter imports decreased 52,311 metric tons, reaching a low in 1996 of 1,203,892 metric tons (Table 3). A significant decrease occurred in 1994 when world butter imports decreased from 1,454,129 metric tons in 1993 to 1,288,247 metric tons in 1994, for an annual decrease of –11.4 percent. Since then, world butter imports fluctuated through 2001, ranging from a high of 1,368,933 metric tons in 1995 to a low of 1,203,892 metric tons in 1996 (Table 3). World butter imports in 2001 were 1,280,750 metric tons, which was up 1.5 percent from total world butter imports in 2000 (1,261,586 metric tons) (Table 3). Butter imports into Canada and

Mexico were 62,901 metric tons (Table 4). This represented 4.9 percent of the world total butter imports.

Table 3. World dairy imports, 1991 through 2000.

| Year | Milk Equivalent | Butter | Cheese | Dry Whole Milk | Dry Skim Milk | Dry Whey |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 52,405,310 | 1,333,061 | 2,127,089 | 1,115,052 | 1,664,905 | 627,884 |
| 1992 | 55,385,703 | 1,376,590 | 2,230,616 | 1,073,993 | 1,821,565 | 657,822 |
| 1993 | 55,463,235 | 1,454,129 | 2,222,401 | 1,059,341 | 1,843,592 | 645,911 |
| 1994 | 57,759,324 | 1,288,247 | 2,461,275 | 1,161,280 | 1,773,160 | 713,385 |
| 1995 | 62,616,493 | 1,368,933 | 2,468,786 | 1,525,707 | 1,890,674 | 783,249 |
| 1996 | 59,844,367 | 1,203,892 | 2,688,552 | 1,281,604 | 1,716,935 | 838,526 |
| 1997 | 62,626,024 | 1,321,235 | 2,843,580 | 1,357,158 | 1,727,457 | 862,943 |
| 1998 | 62,478,356 | 1,213,138 | 2,786,286 | 1,401,542 | 1,607,154 | 915,807 |
| 1999 | 66,593,229 | 1,217,796 | 2,887,650 | 1,439,868 | 1,879,505 | 998,073 |
| 2000 | 68,138,509 | 1,261,586 | 3,093,644 | 1,418,968 | 1,805,896 | 1,067,210 |
| 2001 | 67,120,530 | 1,280,750 | 3,354,503 | 1,351,083 | 1,577,319 | 1,165,912 |
| Average Annual Growth (%) | | | | | | |
| 1991-2001 | 2.6 | -0.1 | 4.7 | 2.6 | -0.2 | 6.5 |

Source: FAO Statistical Databases, 2002.

In the period 1991 to 2001, world cheese imports increased at an average annual rate of 4.7 percent (Table 3). Except for 1993 and 1998, world cheese imports experienced continuous increases, from 2,127,089 metric tons in 1991 to 3,354,503 metric tons in

2001 (Table 3), for an overall increase of 57.9 percent from 1991. In 2001, world cheese imports were up 8.4 percent from 2000 (Table 3). Cheese imports into Canada and Mexico totaled 92,908 metric tons (Table 4). This represented 2.8 percent of the world total cheese imports.

Table 4. Canada and Mexico dairy imports in 2001.

| | Milk Equivalent | Butter | Cheese | Dry Whole Milk | Dry Skim Milk | Dry Whey |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| NORTH AMERICA | | | | | | |
| Canada | 743,095 | 25,831 | 26,642 | 15,892 | 2,662 | 59,191 |
| Mexico | 2,779,261 | 37,070 | 66,266 | 55,117 | 140,498 | 73,660 |
| TOTAL | 3,522,356 | 62,901 | 92,908 | 71,009 | 142,160 | 132,851 |

Source: FAO Statistical Databases, 2002.

World imports of dry whole milk increased in the period 1991 to 2001 at an average annual rate of 2.6 percent. World dry whole milk imports fluctuated in the period 1991 to 2001, ranging from a high of 1,525,707 metric tons in 1995 to a low of 1,059,341 metric tons in 1993 (Table 3). World dry whole milk imports trended downward in the period 1995 to 2001, for an average annual rate of –1.7 percent. In 2001, world dry whole milk imports totaled 1,351,083 metric tons, down from 1,418,968 metric tons in 2000 (Table 3). Dry whole milk imports into Canada and Mexico totaled 71,009 metric tons in 2001 (Table 4), accounting for 5.3 percent of the world total dry whole milk imports.

World dry skim milk imports (nonfat dry milk or skim milk powder) have exceeded dry whole milk imports in the last decade (Table 3). However, in the period 1991 to 2001, world dry skim milk imports trended downward, for an average annual decrease rate of –0.2 percent (Table 3). World dry skim milk imports fluctuated, ranging from a high of 1,890,674 metric tons in 1995 to a low of 1,577,319 metric tons in 2001 (Table 3). Overall, between 1991 and 2001, world dry skim milk imports decreased 87,586 metric tons. In 2001, world dry skim milk imports totaled 1,577,319 metric tons, which was down 12.7 percent from 2000 (Table 3). Dry skim milk imports into Canada and Mexico in 2001 totaled 142,160 metric tons (Table 4), or 9.0 percent of the world total dry skim milk imports.

The most growth in world dairy imports has occurred in the dry whey market. From 1991 to 2001, average annual growth in world dry whey imports was 6.5 percent (Table 3). Except for 1993, world dry whey imports increased continuously from 627,884 metric tons in 1991 to 1,165,912 metric tons in 2001 (Table 3). Dry whey imports into Canada and Mexico totaled 132,851 metric tons (Table 4), accounting for about 11.4 percent of the world total dry whey imports in 2001.

The rest of this paper covers the following information for Canada and Mexico: macroeconomic conditions, milk and dairy production, consumption, imports, the US share of the dairy imports, dairy trade policies, and how these factors have changed overtime.

# CANADA

## Overview of Canada

Canada is located in North America, bounded by the United States to the south, the North Atlantic Ocean to the east, the North Pacific Ocean to the west, and the Arctic Ocean to the north. The total area of Canada is 9,976,140 square kilometers. The population of Canada in 2001 was about 31.9 million, with a population growth rate of 0.96 percent (CIA World Factbook, 2002).

Canada has an affluent, high-tech industrial economy, which closely resembles that of the United States. During the last decade, its economy increased at an average real growth rate of over three percent (CIA World Factbook, 2002). As a result of the close proximity and integrated manufacturing sectors of Canada and the United States, the economic slowdown in the US in 2001 and 2002 had a negative impact on the Canadian economy. The real growth rate declined to 1.4 percent in 2001, with a slight recovery in 2002 (Department of State, 2002). Moreover, the terrorist attacks on September 11, 2001 exacerbated the negative impact on Canada. In 2002, Canada's gross domestic product (GDP) was $923 billion (purchasing power parity), with per-capita purchasing power parity of $29,400 (CIA World Factbook, 2002). Agriculture accounted for two percent of its total GDP (CIA World Factbook, 2002).

In 1994, the North American Free Trade Agreement (NAFTA) came into force. NAFTA superseded the 1989 US-Canada Free Trade Agreement (FTA) and expanded the free trade area to include Mexico. NAFTA has increased trade and economic integration

between Canada and the United States (CIA World Factbook, 2002). Canada's total exports in 2002 were $260.5 billion, with the US receiving 84.6 percent. Its total imports in 2002 were $229 billion, with 72.7 percent coming from the United States (CIA World Factbook, 2002). Canada's main trading partners include the United States, the European Union (EU), and Japan (CIA World Factbook, 2002).

## Dairy Industry in Canada

### Production of Dairy Products

Canada is one of the largest dairy countries in the world in terms of dairy cattle production and fluid milk and dairy product production. Its dairy sector has experienced dramatic changes over the last 30 years. Dairy farming is the fourth largest source of revenue in the Canadian agricultural sector, behind grains, red meats, and horticulture (Agriculture and Agri-Food Canada, 2002).

In Canada, there were about 19,363 dairy farms, along with dairy herds of 1.14 million cows in 2001 (Agriculture and Agri-Food Canada, 2002). About 81 percent of Canada's dairy farms are in Ontario and Quebec, with 14 percent in the Western provinces and five percent in the Atlantic provinces. The number of dairy farms and milk cows have fallen significantly over the past three decades, compared with 122,914 farms and 2.36 million cows in 1971 (Agriculture and Agri-Food Canada, 2002). There are fewer farms, but they are larger, with more cows. Most dairy farms are relatively

specialized, characterized by family-owned operations with herds of about 59 Holstein cows each. Modern research and technologies, such as hardier crops, feed supplements, and improved livestock, have played an important part in Canada's dairy farming (Agriculture and Agri-Food Canada, 2002). Computerization of feeding and herd management systems, biotechnological advances, and equipment innovations also are rapidly changing on the farm.

Although the national dairy herd has declined by half over the past three decades, total milk production has remained level. Modern technological practices and increased managerial expertise in the sector have increased the milk yield per cow. The Canadian milk yield is one of the highest in the world. In 2001, there was approximately 1.14 million head of milking cows in the country, with an average milk yield of over 7,000 kilograms per cow, per year (USDA-FAS, 2002).

Canada has developed a cattle population with a high genetic level. The primary breeds are Holstein, Ayrshire, Jersey, Canadienne, Guernsey, and Shorthorn. In 2001, over 90 percent of the nation's dairy herd was Holsteins (Agriculture and Agri-Food Canada, 2002).

In Canada, the dairy industry is one of the most protected agricultural sectors. This protection takes the form of high tariffs on dairy imports and domestic production quotas (Furtan, et al., 2003). The Canadian dairy sector has operated under a supply management system since the early 1970s. The Canadian dairy production is regulated through production quotas, pricing schemes, and import tariffs (Furtan, et al., 2003).

However, direct government payments were eliminated in 2002 in favor of higher administered prices.

The supply management system restricts production and allows producers to price discriminate based on the end use of milk. For example, the price paid by processors for fluid milk is generally higher than the price for industrial milk (Furtan, et al., 2003). The total fluid milk production quota is set at the provincial level and is based on current provincial population levels, i.e., a farm cannot sell milk without a production quota. Milk production quotas, combined with import restrictions, allow Canada to maintain a protected domestic market and a system of administered prices.

Milk production in Canada increased slightly during the 1990s at an average annual rate of 0.4 percent (FAO Statistics, 2002). Milk production increased from 7,790,000 metric tons in 1991 to 8,090,000 metric tons in 2000. Between 1991 and 2000, milk production increased 300,000 metric tons, peaking at 8,200,000 metric tons in 1998 (Table 1). In 2000, Canada's milk production was 8,090,000 metric tons, down one percent from 1999 (Table 1).

About 40 percent of its milk production was processed into fluid milk (table milk and cream). The remaining 60 percent was used in the production of dairy products (industrial milk). Fluid milk is generally consumed within the producing province, while industrial milk products move across provinces or are exported. Provincial marketing boards govern the production and marketing of fluid milk within their provinces. The marketing

of industrial milk is governed under Federal and Provincial legislation (USDA-ERS, 2001).

Between 1991 and 2000, Canada's butter production decreased 20,771 metric tons, to 80,288 metric tons in 2000 (Table 1), for an average annual decrease rate of –2.3 percent. The decrease in butter production during the 1990s was the result of reduced supplies of industrial milk and increased use of milk for cheese production (USDA-FAS, 2000).

Table 1. Canada milk and selected dairy products production, 1991 through 2000.

| Year | Cow Milk, Whole, Fresh | Butter and Ghee | Cheese (All Kinds) | Whole Milk, Dry | Skim Milk, Dry | Whey[a] |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 7,790,000 | 101,059 | 290,980 | 8,777 | 80,398 | 2,029,961 |
| 1992 | 7,633,000 | 90,235 | 290,113 | 11,000 | 56,589 | 2,031,380 |
| 1993 | 7,500,000 | 86,692 | 292,730 | 10,000 | 52,230 | 2,053,252 |
| 1994 | 7,750,000 | 92,674 | 307,050 | 8,000 | 64,120 | 2,157,902 |
| 1995 | 7,920,000 | 96,765 | 313,450 | 6,000 | 77,053 | 2,206,230 |
| 1996 | 7,890,000 | 97,612 | 311,252 | 5,000 | 69,083 | 2,195,700 |
| 1997 | 8,100,000 | 93,959 | 358,230 | 4,000 | 69,720 | 2,539,582 |
| 1998 | 8,200,000 | 90,600 | 351,620 | 3,000 | 75,420 | 2,492,165 |
| 1999 | 8,164,000 | 92,060 | 350,850 | 4,000 | 82,680 | 2,485,724 |
| 2000 | 8,090,000 | 80,288 | 351,150 | 4,000 | 79,530 | 2,504,528 |

[a] Whey production in milk equivalent pounds.
Source: FAO Statistical Databases, 2002.

During the 1990s, Canada's cheese production increased at an average annual growth rate of 2.2 percent (FAO Statistics, 2002). Between 1991 and 2000, cheese production increased 60,170 metric tons, from 290,980 metric tons in 1991 to 351,150 metric tons in 2000, peaking at 358,230 metric tons in 1997 (Table 1).

Canada's dry whole milk production in 2000 totaled 4,000 metric tons (Table 1). Dry whole milk production decreased during the 1990s, down from a high of 11,000 metric tons in 1992 to a low of 3,000 metric tons in 1998 (Table 1). Between 1991 and 2000, dry whole milk production decreased 3,777 metric tons (Table 1), for an overall decrease of 43 percent.

Canada's dry skim milk (nonfat dry milk or skim milk powder) production in 2000 totaled 79,530 metric tons (Table 1). Dry skim milk production fluctuated during the 1990s, ranging from a low of 52,230 metric tons in 1993 to a high of 82,680 metric tons in 1999 (Table 1). Between 1991 and 2000, dry skim milk production decreased 868 metric tons (Table 1), for an overall decrease of one percent.

Between 1991 and 2000, Canada's whey production (in milk equivalent metric tons) increased 474,567 metric tons, from 2,029,961 metric tons in 1991 to 2,504,528 metric tons in 2000, peaking in 1997 at 2,539,582 metric tons (Table 1). During the 1990s, whey production increased at an average annual rate of 2.5 percent (FAO Statistics, 2002).

**Demand for Dairy Products**

Canada is one of the largest dairy countries in the world. As the production of dairy products has experienced changes over the last three decades, dairy consumption patterns have changed (Agriculture and Agri-Food Canada, 2002).

As a result of the growing number of smaller families and the increased number of women working outside the home during the past decades, the demand for ready-to-eat

and high value-added foods, including dairy products, has increased. As with the response to consumer demand, Canada has developed a number of dairy products such as yogurt, milk beverages, and ice desserts. New varieties of dairy products have experienced increases in demand (USDA-FAS, 2000).

In Canada, increasing health concerns have had a big impact on consumption patterns, particularly from the generation of baby boomers, which launched the healthy eating trends. For example, since the late 1980s, margarine has become a substitute for butter, and skimmed milk has appeared on store shelves (Agriculture and Agri-Food Canada, 2002). More Canadians regard dairy products part of a balanced diet and essential to health.

Both the fluid milk and industrial milk sectors have become static or declined during the last decade. An aging population, increasing consumer preferences for low fat foods, and a growing immigrant population that consumes fewer dairy products may be factors to explain static growth conditions (Agriculture and Agri-Food Canada, 2002).

Per-capita milk consumption decreased at an average annual rate of -0.5 percent during the 1990s (Table 2). Between 1991 and 2000, per-capita milk consumption decreased 10.88 kilograms, from 267.09 kilograms in 1991 to 256.21 kilograms in 2000 (Table 2). Fluid milk products experienced competition from other beverages such as bottled waters, juices, and soft drinks.

Per-capita whole milk consumption decreased slightly at an average annual rate of -0.5 percent during the 1990s (Table 2). Between 1991 and 2000, per-capita whole milk

consumption decreased 13.13 kilograms, from 275.32 kilograms in 1991 to 262.19 kilograms in 2000 (Table 2), for an overall decrease of five percent. Whole milk consumption decreased to a low of 259.92 kilograms in 1993 (Table 2).

Lower-fat dairy products, such as skim and low-fat milk (one-percent fat milk), have gained in market share. In 2001, one-percent and skim milk accounted for almost 30 percent of total milk sales, compared to just three percent during the 1970s (USDA-FAS, 2002).

Table 2. Per-capita consumption of dairy products in Canada, 1991 through 2000.

| Year | All Milk[a] | Butter | Cheese | Skim Milk[a] | Whole Milk[a] | Whey[a] |
|---|---|---|---|---|---|---|
| | | | Kilograms | | | |
| 1991 | 267.09 | 3.29 | 10.62 | 80.88 | 275.32 | 69.28 |
| 1992 | 265.84 | 3.01 | 10.62 | 77.25 | 267.09 | 63.67 |
| 1993 | 261.05 | 3.01 | 10.74 | 75.50 | 259.92 | 65.78 |
| 1994 | 260.18 | 3.03 | 10.93 | 74.75 | 266.32 | 69.22 |
| 1995 | 255.46 | 2.90 | 10.96 | 71.38 | 268.67 | 71.33 |
| 1996 | 256.47 | 2.95 | 10.76 | 77.70 | 263.19 | 75.99 |
| 1997 | 252.58 | 2.78 | 11.73 | 72.98 | 267.32 | 82.95 |
| 1998 | 254.37 | 2.91 | 11.49 | 71.59 | 267.74 | 83.92 |
| 1999 | 254.27 | 2.69 | 11.53 | 74.16 | 265.24 | 86.81 |
| 2000 | 256.21 | 2.82 | 11.63 | 70.85 | 262.19 | 87.91 |
| Average Annual Growth (%) 1991-2000 | -0.5 | -1.6 | 1.1 | -1.4 | -0.5 | 2.8 |

[a] Included food and other uses, such as cattle feed.
Source: FAO Statistical Databases, 2002

Although the market share of low-fat milk increased, per-capita skim milk consumption decreased at an average annual rate of –1.4 percent during the 1990s (Table 2). Between 1991 and 2000, per-capita skim milk consumption decreased 10.03

kilograms, from a high of 80.88 kilograms in 1991 to a low of 70.85 kilograms in 2000 (Table 2).

In Canada, dairy production has changed with traditional products such as butter, skim milk powder, and evaporated milk, giving way to more emphasis on high-valued dairy products such as specialty cheeses, yogurt products, specialty ice creams, and other frozen desserts. A growing health concern over reducing fat intake has prompted a shift in consumer demand to nutritive low-fat products. However, Canadian consumers have not abandoned high fat products entirely (Agriculture and Agri-Food Canada, 2002).

Per-capita cheese consumption in 2000 was 11.63 kilograms, up ten percent from the 1991 level of 10.62 kilograms (Table 2). The increase was mainly due to a strong demand for prepared foods, as well as promotional campaigns in Canada (USDA-FAS, 2002). Per-capita butter consumption decreased at an average annual rate of –1.6 percent during the 1990s, ranging from a high of 3.29 kilograms in 1991 to a low of 2.69 kilograms in 1999 (Table 2). Cream enjoyed a surge in popularity due to the increasing consumption of coffee, especially from food services, in recent years. Yogurt became increasingly popular throughout the last decade due to the development of tastier and innovative new products (USDA-FAS, 2002).

Per-capita whey consumption experienced increases during the 1990s, for an average annual rate of 2.8 percent (Table 2). During the period 1992 to 2000, whey consumption experienced continuous growth, from 63.67 kilograms in 1992 to 87.91 kilograms in 2000 (Table 2). Between 1991 and 2000, per-capita whey consumption increased 18.63 kilograms. In Canada, whey is mainly used in feed and food manufacturing (FAO, 2003).

Canada is one of the world's largest producers of milk and dairy products. However, its dairy industry is highly protected through high import tariffs and production quotas. Although Canada has achieved self-sufficiency in dairy products, it still imports certain amounts of dairy products for domestic consumption and re-exports (Furtan, et al., 2003).

**Imports of Dairy Products**

In 2000, Canada imported 728,282 metric tons dairy products, and ranked 23$^{rd}$ among all countries in total imported dairy products in milk equivalent metric tons (Table 3). In 2000, Canada's share of the world imports of dairy imports (in milk equivalent metric tons) was about 1.1 percent (Table 3).

For individual dairy products, Canada ranked 18$^{th}$ and 21$^{st}$, respectively, among all countries in the import of butter and cheese in 2000 (Tables 4 and 5). Its share of world imports of butter and cheese were about 1.1 and 1.0 percent, respectively (Tables 4 and 5). In 2000, Canada ranked third in total imports of whey in the world (Tables 6), with about 5.6 percent of the total world imports (Table 6). Canada imported very small amounts of dry whole milk and dry skim milk during the 1990s, and ranked out of the top 40 countries in dry skim milk imports (FAO Statistics, 2002).

Table 3. Selected countries' total dairy imports (in milk equivalent) and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 3,709,566 | 4 | 3,661,389 | 4 | 3,936,039 | 5 | 4,054,076 | 5 | 4,434,830 | 5 |
| Canada | 401,611 | 26 | 353,380 | 31 | 377,458 | 31 | 491,804 | 27 | 728,282 | 23 |
| China | 1,285,203 | 13 | 1,584,260 | 10 | 1,531,064 | 14 | 1,909,979 | 10 | 2,243,373 | 8 |
| France | 3,158,352 | 5 | 3,582,977 | 5 | 3,966,796 | 4 | 4,313,597 | 4 | 4,685,094 | 4 |
| Germany | 4,673,712 | 3 | 4,796,523 | 3 | 4,669,373 | 3 | 4,554,466 | 3 | 5,024,699 | 3 |
| Italy | 5,210,317 | 2 | 5,430,128 | 2 | 5,543,997 | 2 | 5,509,023 | 2 | 5,467,815 | 2 |
| Mexico | 1,912,993 | 8 | 2,121,080 | 8 | 2,021,171 | 7 | 2,217,376 | 7 | 2,310,820 | 7 |
| Netherlands | 6,385,562 | 1 | 6,061,069 | 1 | 5,633,207 | 1 | 7,113,321 | 1 | 6,297,773 | 1 |
| Spain | 1,450,968 | 11 | 1,583,212 | 11 | 1,652,153 | 11 | 1,661,739 | 12 | 1,918,970 | 10 |
| UK | 2,393,522 | 6 | 2,476,914 | 7 | 2,537,039 | 6 | 2,667,275 | 6 | 2,710,840 | 6 |
| USA | 1,380,531 | 12 | 1,466,204 | 12 | 1,873,207 | 8 | 1,953,107 | 9 | 1,953,940 | 9 |
| Total | 31,962,337 | ---- | 33,117,136 | ---- | 33,741,504 | ---- | 36,445,763 | ---- | 37,776,436 | ---- |
| World | 59,844,367 | ---- | 62,626,024 | ---- | 62,478,356 | ---- | 66,593,229 | ---- | 68,138,509 | ---- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 4. Selected countries' total butter imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 100,015 | 5 | 103,759 | 5 | 101,137 | 4 | 100,491 | 4 | 112,073 | 4 |
| Canada | 2,828 | 48 | 3,316 | 46 | 3,275 | 46 | 5,820 | 34 | 14,477 | 18 |
| Egypt | 50,225 | 7 | 37,759 | 8 | 35,253 | 9 | 43,115 | 8 | 44,141 | 7 |
| France | 109,919 | 4 | 137,381 | 3 | 133,670 | 2 | 129,819 | 1 | 148,302 | 1 |
| Germany | 132,955 | 1 | 156,822 | 2 | 134,930 | 1 | 123,476 | 2 | 131,121 | 2 |
| Italy | 48,315 | 8 | 52,087 | 7 | 60,124 | 7 | 46,864 | 7 | 41,167 | 8 |
| Mexico | 18,529 | 14 | 24,793 | 9 | 27,325 | 10 | 34,047 | 9 | 34,078 | 9 |
| Morocco | 28,050 | 9 | 16,457 | 15 | 22,104 | 12 | 19,818 | 12 | 27,357 | 10 |
| Netherlands | 68,782 | 6 | 94,022 | 6 | 69,879 | 6 | 96,933 | 5 | 86,887 | 5 |
| Russian | 125,810 | 2 | 169,698 | 1 | 83,053 | 5 | 53,200 | 6 | 53,857 | 6 |
| UK | 111,619 | 3 | 101,210 | 4 | 109,287 | 3 | 122,076 | 3 | 122,922 | 3 |
| Total | 797,047 | --- | 897,304 | --- | 780,037 | --- | 757,829 | --- | 816,382 | --- |
| World | 1,203,892 | --- | 1,321,235 | --- | 1,213,138 | --- | 1,217,796 | --- | 1,261,586 | --- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 5. Selected countries' total cheese imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 176,745 | 4 | 186,681 | 5 | 197,185 | 4 | 199,602 | 5 | 208,949 | 5 |
| Canada | 22,831 | 19 | 23,565 | 21 | 23,836 | 21 | 25,236 | 19 | 29,417 | 21 |
| France | 151,238 | 7 | 153,718 | 7 | 167,326 | 7 | 188,472 | 6 | 213,138 | 4 |
| Germany | 458,261 | 1 | 476,361 | 1 | 441,518 | 1 | 417,503 | 1 | 424,721 | 1 |
| Greece | 50,747 | 12 | 68,059 | 11 | 94,838 | 9 | 67,341 | 11 | 76,944 | 10 |
| Italy | 294,875 | 2 | 305,861 | 2 | 305,419 | 2 | 318,681 | 2 | 347,233 | 5 |
| Japan | 164,164 | 5 | 171,407 | 6 | 183,448 | 5 | 186,905 | 7 | 205,123 | 6 |
| Netherlands | 92,067 | 9 | 84,895 | 9 | 100,869 | 8 | 116,845 | 8 | 122,438 | 8 |
| Spain | 81,511 | 10 | 81,046 | 10 | 86,363 | 10 | 94,223 | 9 | 104,688 | 9 |
| UK | 258,704 | 3 | 261,775 | 3 | 249,191 | 3 | 272,312 | 3 | 268,613 | 3 |
| USA | 154,764 | 6 | 142,793 | 8 | 170,557 | 6 | 203,042 | 4 | 192,342 | 7 |
| Total | 1,905,907 | --- | 1,956,161 | --- | 2,020,550 | --- | 2,090,162 | --- | 2,193,606 | --- |
| World | 2,688,552 | --- | 2,843,580 | --- | 2,786,286 | --- | 2,887,650 | --- | 3,093,644 | --- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 6. Selected countries' total whey imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 52,959 | 4 | 55,759 | 3 | 58,099 | 3 | 54,842 | 4 | 56,299 | 5 |
| Canada | 43,224 | 6 | 36,554 | 10 | 37,996 | 9 | 48,375 | 6 | 62,441 | 3 |
| China | 72,882 | 2 | 89,359 | 2 | 78,819 | 2 | 97,717 | 2 | 140,057 | 2 |
| France | 29,238 | 10 | 40,931 | 7 | 50,588 | 5 | 49,463 | 5 | 59,048 | 4 |
| Germany | 66,975 | 3 | 45,070 | 5 | 48,759 | 6 | 46,114 | 7 | 40,077 | 9 |
| Italy | 40,845 | 7 | 37,598 | 8 | 42,637 | 8 | 37,584 | 10 | 42,029 | 8 |
| Japan | 32,343 | 9 | 37,481 | 9 | 37,351 | 10 | 41,157 | 9 | 39,522 | 10 |
| Mexico | 48,636 | 5 | 49,174 | 4 | 56,642 | 4 | 55,947 | 3 | 55,031 | 6 |
| Netherlands | 251,310 | 1 | 217,543 | 1 | 248,474 | 1 | 292,637 | 1 | 252,099 | 1 |
| Spain | 37,147 | 8 | 43,362 | 6 | 44,869 | 7 | 44,225 | 8 | 49,109 | 7 |
| Total | 675,559 | ---- | 652,831 | ---- | 704,234 | ---- | 768,061 | ---- | 795,712 | ---- |
| World | 886,132 | ---- | 902,409 | ---- | 973,881 | ---- | 1,054,173 | ---- | 1,124,090 | ---- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Between 1991 and 2000, dairy imports in milk equivalent metric tons average an increase of 20.3 percent per year from 153,013 metric tons in 1991 to 728,282 metric tons in 2000 (Table 7), for an overall increase of 575,269 metric tons. In 2000, Canada imported 728,282 metric tons of dairy products (in milk equivalent pounds), an increase of 48 percent from 1999 (Table 7). This increase was mainly due to a significant rise in imports of butter and other dairy products (USDA-FAS, 2002).

Table 7. Canada dairy imports, 1991 through 2000.

| Year | Milk Equivalent | Butter | Cheese | Dry Whole Milk | Dry Skim Milk | Whey |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 153,013 | 164 | 21,188 | 1,324 | 899 | 2,797 |
| 1992 | 183,945 | 187 | 21,632 | 2,515 | 734 | 5,074 |
| 1993 | 243,840 | 942 | 21,871 | 3,140 | 4,722 | 8,648 |
| 1994 | 300,724 | 409 | 21,533 | 5,492 | 6,465 | 19,070 |
| 1995 | 303,325 | 606 | 21,451 | 2,810 | 1,949 | 27,163 |
| 1996 | 401,611 | 2,828 | 22,831 | 1,269 | 3,062 | 43,224 |
| 1997 | 353,380 | 3,316 | 23,565 | 3,235 | 271 | 36,554 |
| 1998 | 377,458 | 3,275 | 23,826 | 4,566 | 65 | 37,996 |
| 1999 | 491,804 | 5,820 | 25,236 | 6,577 | 983 | 48,375 |
| 2000 | 728,282 | 14,477 | 29,417 | 16,216 | 1,736 | 62,441 |
| Average Annual Growth (%) 1991-2000 | 20.3 | 113.2 | 3.8 | 52.5 | 207.9 | 46.5 |

Source: FAO Statistical Databases, 2002.

Prior to the Uruguay Round of the General Agreement on Tariffs and Trade (UR, GATT), Canada used a quota to block dairy imports. Imports were only allowed into Canada whenever it was necessary to maintain a stable domestic consumer price. The

GATT required that all import quotas be replaced by a system of tariff-rate quotas (TRQ) [Furtan, et al., 2003]. As a result of tariffication, dairy imports increased during the 1990s, for an average annual growth rate of 20.3 percent (Table 7).

During the 1990s, growth in Canadian butter imports was impressive, for an average annual increase rate of 113.2 (Table 7). Between 1991 and 2000, butter imports increased 14,313 metric tons, particularly during the period 1999 to 2000 when butter increased 8,657 metric tons, from 5,280 metric tons in 1999 to 14,477 metric tons in 2000 (Table 7).

Cheese imports reached 29,417 metric tons in 2000, compared to 21,188 metric tons in 1991 (Table 7). During the 1990s, Canadian cheese imports increased at an average annual growth rate of 3.8 percent (Table 7). A significant increase occurred in 2000 when cheese imports increased from 25,236 metric tons in 1999 to 29,417 metric tons in 2000 (Table 7). A large proportion of the total cheese imports were specialty cheeses (Agriculture and Agri-Food Canada, 2002).

During the 1990s, Canada's whole dry milk imports trended upward, ranging from a low of 1,269 metric tons in 1996 to a high of 16,216 metric tons in 2000 (Table 7). The lowest level of skim dry milk imports occurred in 1996, when only 1,269 metric tons were imported into Canada (Table 7). A significant increase occurred in 2000 when whole milk powder imports increased from 6,577 metric tons in 1999 to 16,216 metric tons in 2000 (Table 7).

During the 1990s, Canada's skim dry milk imports fluctuated, ranging from a high of 6,465 metric tons in 1994 to a low of 65 metric tons in 1998 (Table 7). The lowest level of skim dry milk imports occurred in 1997 and 1998, when only 271 metric tons and 65 metric tons, respectively, were imported into Canada (Table 7).

Canada produces a relatively large amount of skim dry milk, and it is the major product used to dispose of surplus milk production. In addition, Canada re-exports most of its skim dry milk imports. During the period 1997 to 1998, success in exporting selected non-traditional dairy products, such as condensed milk, caused exports of dry skim milk to decrease. As a result, skim dry milk imports decreased to a very low level during that period (USDA-FAS, 1999).

During the 1990s, Canada's whey imports increased at an average rate of 46.5 percent (Table 7). Between 1991 and 2000, whey imports increased 59,644 metric tons, from a low of 2,797 metric tons in 1991 to a high of 62,441 metric tons in 2000 (Table 7).

**Exports of Dairy Products from the U.S.**

While the United States supplied a large proportion of butter to Canada in the middle 1990s, the share of US butter decreased to a very low level in the late 1990s (Table 8). In 1999, the US only exported 78.7 metric tons of butter to Canada, with a market share of 1.4 percent, down from a high of 82 percent in 1993 (Table 8).

Table 8. Selected dairy products exported from the US to Canada, 1991 through 2000.

| Year | Butter[a] | % of All Butter Imports[b] | Cheese[a] | % of All Cheese Imports[b] | Whole Dry Milk[a] | % of All WDM Imports[b] | Non-Fat Dry Milk[a] | % of All NFDM Imports[b] | Whey[a] | % of All Whey Imports[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | % | Mt | % | Mt | % | Mt | % | Mt | % |
| 1991 | 15.2 | 9.3 | 2,453.4 | 11.6 | 418.7 | 31.6 | 23.3 | 2.6 | 2,607.7 | 93.2 |
| 1992 | 16.5 | 8.8 | 2,473.2 | 11.4 | 744.7 | 29.6 | 504.7 | 68.8 | 4,871.2 | 96.0 |
| 1993 | 772.1 | 82.0 | 2,150.1 | 9.8 | 502.5 | 16.0 | 494.0 | 10.5 | 7,329.4 | 84.8 |
| 1994 | 170.8 | 41.8 | 1,843.1 | 8.6 | 574.6 | 10.5 | 875.7 | 13.5 | 9,146.6 | 48.0 |
| 1995 | 367.3 | 60.6 | 3,127.8 | 14.6 | 363.3 | 12.9 | 90.9 | 4.7 | 13,304.3 | 49.0 |
| 1996 | 595.7 | 21.1 | 3,467.2 | 15.2 | 214.3 | 16.9 | 46.4 | 1.5 | 27,805.9 | 64.3 |
| 1997 | 276.5 | 8.3 | 4,129.8 | 17.5 | 259.1 | 8.0 | 7.4 | 2.7 | 22,243.5 | 60.9 |
| 1998 | 143.3 | 4.4 | 3,920.8 | 16.5 | 475.8 | 10.4 | 22.3 | 34.3 | 23,101.9 | 60.8 |
| 1999 | 78.7 | 1.4 | 5,461.0 | 21.6 | 174.9 | 2.7 | 43.0 | 4.4 | 32,382.8 | 66.9 |
| 2000 | 1,073.2 | 7.4 | 9,218.1 | 31.3 | 258.7 | 1.6 | 437.4 | 25.2 | 39,501.2 | 63.3 |

[a] Source: United States Department of Agriculture Foreign Agricultural Service, 2003.

[b] Data from Table 7.

New Zealand has been the single largest butter exporting country to Canada since the mid-1990s. In 2001, New Zealand butter accounted for 76 percent of the total Canadian butter imports. Uruguay and the European Union are relatively small suppliers of butter to Canada (USDA-FAS, 2002).

The main cheese suppliers to Canada are the US and the European Union, especially France, Italy, and Germany. During the 1990s, the market share of US cheese exported to Canada ranged from a low of 8.6 percent in 1994 to a high of 31.3 percent in 2000 (Table 8). The US was the second largest supplier of cheese to Canada in 2000 (USDA-FAS, 2000), at 9,218.1 metric tons (Table 8). The European Union provides mainly specialty cheeses (USDA-FAS, 2000).

The US is one of the major suppliers of whole dry milk to Canada, but its market share trended downward during the 1990s, ranging from a high of 31.6 percent in 1991 to a low of 1.6 percent in 2000 (Table 8).

Although the US is one of the major suppliers of nonfat dry milk to Canada, its market share has fluctuated, ranging from a high of 68.8 percent in 1992 to a low of 1.5 percent in 1996. Due to competition from New Zealand and the United Kingdom, the US became the third largest supplier of nonfat dry milk in 1999, with a market share of 4.4 percent (Table 8; USDA-FAS, 2000). In 2000, the market share of US nonfat dry milk increased to 25.2 percent, or 437.4 metric tons, ranking second, following New Zealand. In the future, New Zealand is expected to continue to be the largest supplier, with the US share expected to increase at the expense of the United Kingdom (USDA-FAS, 2002).

Canada is one of the largest importers of US whey. During the 1990s, the United States had a dominant market share. The quantity of US whey exports to Canada increased during the 1990s, particularly during the last five years. In 2000, US whey exported to Canada totaled 39,501.2 metric tons, with a market share of 63.3 percent (Table 8).

Canada's dairy exports mainly go to the United States (USDA-FAS, 2002). Since 1995, the World Trade Organization (WTO) has placed limits on the quantity of Canadian dairy exports, which have benefited from an export subsidy. However, Canada has exported amounts greater than the limits. The US and New Zealand made a claim to the WTO in 1999 that would make Canada abandon restrictive trade practices and fully participate in export market (Furtan, et al., 2003).

In 2000, Canada imported 14,477 metric tons of butter and exported 6,711 metric tons, mainly to the US (FAO Statistics, 2002; USDA-FAS, 2000). In the same year, Canada imported 29,417 metric tons of cheese and exported 18,237 metric tons (FAO Statistics, 2002). The US is the top market for exports of Canadian cheese; other large export markets include Saudi Arabia, the European Union, and Japan (USDA-FAS, 2000).

During the 1990s, Canada's nonfat dry milk exports exceeded its imports. For example, in 2000, Canadian nonfat dry milk exports totaled 29,375 metric tons (FAO Statistics, 2002), while its imports totaled 1,736 metric tons (Table 7). Most of its nonfat dry milk exports went to the US, Mexico, and Cuba (USDA-FAS, 2000).

Since 1996, Canada has become a net importer of whey products. Increases in whey imports, compared with exports, were mainly due to the tariff-rate quota system, which is required by GATT (Furtan, et al., 2003). In 2000, Canada imported 62,441 metric tons of whey and exported 31,333 metric tons (FAO Statistics, 2002).

**Trade Policy and Tariff**

Because Canada has an affluent, high-tech industrial economy, regional and multilateral trade initiatives have helped Canada to further liberalize its generally open economy. In 1994, the United States, Canada, and Mexico signed a trilateral free trade agreement-North America Free Trade Agreement (NAFTA). NAFTA superseded the 1989 US-Canada Free Trade Agreement (CFTA) and set forth the bilateral phase-out of tariffs, which was outlined in CFTA. The bilateral phase-out of tariffs between Canada and the United States was completed in 1998, except for certain supply-managed products in Canada and dairy, sugar, peanuts, and cotton in the United States (USTR, 2000). However, a few areas have remained sheltered from foreign competition by trade or investment barriers.

Although Canada has been a WTO member since 1995, it protects its domestic dairy market from foreign competition through restrictive trade practices. Prior to the Uruguay Round, Canada used a quota to restrict dairy imports. Dairy imports were allowed into the country only when it was necessary, to maintain a stable domestic consumer price. The Uruguay Round Agreement on Agriculture, which was signed in 1995, did not affect

the Canadian dairy production quotas, but it required that all import quotas must be replaced by a system of TRQ (Furtan, et al., 2003).

With a TRQ, the minimum access quantity is charged at a very low tariff (in-quota tariff). In Canada, the quota was three percent of the domestic consumption in 1995, which rose to five percent in 2000. For example, in 2000, the tariff rate quota for butter totaled 3,274 metric tons (CDC, 2002).

Since 2000, the in-quota tariffs have been $0.1138 per kilogram for butter, $0.0284 per kilogram for cheese, $0.0332 per kilogram for skim milk powder, and $0.0494 per kilogram for whey powder (WTO, 2003). Over-quota imports entering the country are charged a high tariff. For example, the over-quota tariffs have been as high as 299 percent for butter, 246 percent for cheese, 202 percent for skim milk powder, and 208 percent for whey powder (WTO, 2003). Comparatively, duty levels in the United States range from 42 to 69 percent (USDA-ERS, 2001).

Under the UR GATT, Canada is allowed to export dairy products with an export subsidy. Although the WTO has placed export limits on Canadian dairy products because of its restrictive trade practices, Canada continues to export dairy products that exceed the limits. WTO cases against Canada's export subsidy for dairy products have been initiated by the US and New Zealand since 1999. Initially, the WTO concluded that Canada had violated its export subsidy reduction commitments by exporting a higher volume of subsidized dairy products than was permitted under the WTO Agreement on Agriculture, but then overturned its decision at the end of 2001, concluding that it was unable to

complete the analysis (Agriculture and Agri-Food Canada, 2002). However, because Canada has a major export interest, it has endorsed trade liberalization in dairy products, and has taken a position against its supply management system. Canada's commitments to free trade polices have tended to dominate its domestic agricultural policies in recent years.

# MEXICO

## Overview of Mexico

Mexico is located in the Central America, bounded by the US to the north, the Pacific Ocean to the west and southwest, Guatemala and Belize to the south, the Gulf of Mexico to the east. The total area of Mexico is 1,972,550 square kilometers, slightly less than three times the size of Texas. The population of Mexico in 2001 was about 103.4 million, with a 1.47 percent growth rate (CIA World Factbook, 2002).

Mexico has a free market economy with a mixture of modern and aging industry and agriculture, increasingly dominated by the private sector. Mexico's real gross domestic product (GDP) growth slowed in late 1998, against a background of the global financial crisis and falling oil prices. Despite the slowing of domestic demand in 1999, output grew about three percent, aided by strong exports to the US and still vigorous private investment (CIA World Factbook, 2002). Near term uncertainties remain from possible financial disturbance and lack of market confidence. Following 6.9 percent growth in 2000, real GDP fell 0.3 percent in 2001, due to the US economy's slowdown. In 2001, Mexico's real GDP was approximately $920 billion (purchasing power parity), with per-capita purchasing power parity of $9,000. Agriculture accounted for five percent of the total GDP (CIA World Factbook, 2002). Agriculture, livestock, fishing and forestry expanded at a real rate of 3.4 percent in 2001, while the industrial sector and the services sector grew by 6.6 and 7.4 percent respectively (CIA World Factbook, 2002).

Mexico joined GATT in 1986. After the unilateral reduction of tariffs and the elimination of import permits, Mexico sought to expand free trade and made progress on both its regional and bilateral trade agendas. Mexico joined the Asian Pacific Economic Cooperation in 1993, and has negotiated eleven free trade agreements with 32 countries on three continents. In 1994, the US, Canada, and Mexico signed a trilateral free trade agreement, called the North America Free Trade Agreement (NAFTA). Trade with the US and Canada has tripled since then (WTO, 1999).

Mexico's total exports in 2001 were $159 billion of which the US received 88.4 percent. Mexico's total imports in 2001 were $168 billion of which the US composed 68.4 percent (CIA World Factbook, 2002). Mexico's exports and imports depend heavily on the trading relationship with the US, and Mexico's exports are designed for the US market. Therefore, a healthy free trading relationship is beneficial for both countries. Mexico's main trading partners are the US, Canada, Germany, and Japan (CIA World Factbook, 2002).

## Dairy Industry in Mexico

### Production of Dairy Products

Dairy farming is not new to Mexico. The dairy industry in Mexico is mixed by large, medium and small sized dairy farms (Losada et al, 1996). Milk production in Mexico is mainly carried out with a high use of technology and inputs. Although this model of

production has been broadly accepted by the majority of producers, milk production in the surrounding high population areas of the city is carried out by an equally intensive system which has particular characteristics well adapted to the suburban conditions of the city, such as smaller size herds with less advanced technology (Losada et al, 1996). The use of state of the art technology by large dairies has resulted in higher milk production per cow. This increased production is offsetting lower output from medium and small sized dairy farms, which are facing financial problems (USDA-FAS, 2000). In 2001, dairy cow numbers continued to be stable and large dairies were obtaining increased production per cow. In 2001, Mexico has 6.8 million cows in milk. The production per cow was 1, 400 kilograms per year, only one sixth the rate of the US (8,430 kilograms) (USDA-FAS, 2003). Due to continued improvement in genetics and herd management by large and medium-sized dairies, higher milk production per cow for the next couple of years is expected as the domestic industry attempts to replace imports of fluid milk and milk powder with domestic production (USDA-FAS, 2002).

Mexico's fluid milk production in 2000 was 9,311,444 metric tons, increasing five percent over the previous year (Table 1), and accounting for 1.9 percent of the world production of fresh milk (490,357,888 metric tons) (FAO Statistics, 2002). Mexico's modernization and improved herd management by large dairies have continued to boost overall production. Mexico's butter production in 2000 was 15,478 metric tons (Table 1), increased slightly over the previous year's production.

Table 1. Mexico milk and selected dairy products production, 1991 through 2000.

| Year | Cow Milk, Whole, Fresh | Butter and Ghee | Cheese (All Kinds) | Whole Milk, Dry | Skim Milk, Dry | Whey[a] |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 6,925,300 | 25,305 | 114,525 | 76,890 | 11,807 | 537,500 |
| 1992 | 7,182,162 | 38,000 | 130,525 | 60,000 | 12,000 | 627,500 |
| 1993 | 7,633,604 | 34,294 | 131,360 | 74,006 | 16,308 | 630,000 |
| 1994 | 7,547,137 | 30,184 | 131,675 | 130,075 | 20,000 | 631,575 |
| 1995 | 7,627,950 | 30,904 | 126,251 | 104,706 | 26,763 | 604,455 |
| 1996 | 7,821,600 | 30,000 | 122,892 | 95,625 | 26,350 | 587,660 |
| 1997 | 8,091,400 | 32,865 | 129,769 | 90,708 | 25,306 | 620,200 |
| 1998 | 8,315,711 | 13,253 | 130,224 | 91,000 | 15,200 | 624,320 |
| 1999 | 8,877,314 | 15,280 | 139,170 | 97,375 | 17,500 | 668,715 |
| 2000 | 9,311,444 | 15,478 | 147,203 | 102,250 | 17,600 | 711,000 |

[a] Whey production in milk equivalent pounds.
Source: FAO Statistical Databases, 2002.

Due to steady demand from middle class consumers and production costs, cheese output remains unchanged from the previous year. Substantial production of homemade cheese in rural Mexico continues to be a supply factor (USDA-FAS, 2002). Cheese production in 2000 was 147,203 metric tons, accounting for about one percent of the world cheese production (16, 416,935 metric tons) (FAO Statistics, 2002).

Mexican dry whole milk production fluctuated during the 1990s, reaching a high of 130,075 metric tons in 1994 and a low of 60,000 metric tons in 1992 (Table 1). In 2000, Mexico produced 102,250 metric tons of dry whole milk (Table 1).

Mexican dry skim milk producers are not expected to be able to significantly increase production in the short term due to limited processing facilities. As a result of limited

domestic production, Mexico would continue to import significant amounts of dry skim milk to meet domestic demand (USDA-FAS, 2002). In 2000, Mexico's production of dry skim milk was 17,600 metric tons (Table 1). There is continued pressure on the Mexican authorities by the domestic milk industry to reduce imports of milk powder, in order to increase the domestic production (USDA-FAS, 2002). Mexico's dry whey production accounted for 37 percent of the world dry whey production (1,905,793 metric tons), and was about one and one-half times the US production (539,000 metric tons) (FAO Statistics, 2002).

In current years, small and medium sized dairy producers are facing financial problems as a result of increased costs and low productivity levels. Relatively low domestic raw milk prices and the lack of affordable financing for capital improvements discourage small and medium-sized dairy farms from expanding, particularly in central Mexico. Most producers are experiencing lower returns, but not economic losses. The lack of marketing facilities and basic infrastructure in these areas prevent any substantial increase in milk production. Fluid milk production from dual-purpose cattle in the tropics continues to fluctuate because of weather conditions, and production in tropical areas still remains underdeveloped (USDA-FAS, 2002).

**Demand for Dairy Products**

Like many of the Eastern and Southeastern countries, such as Japan, Korea, and Malaysia, the consumption of dairy products in Mexico has been growing faster than

domestic production. Mexico City, which is less than one hundred miles from the US southwest dairy markets in the US, is the primary market. As a result, the US enjoys the exclusive transportation cost advantages (USDEC, 1997).

In the 1980s, Mexico's per-capita consumption of all milk products declined about two percent on average (Washington, 2000). However, in the 1990s, Mexico's per-capita consumption in all milk products increased slightly on average by 2.6 percent (Table 2). The minimum per-capita consumption of milk recommended by the FAO is 0.5 liters per day. However, about 40 percent of Mexico's population never consumes milk and 15 percent drinks it occasionally (USDA-FAS, 2000). Per-capita consumption in Mexico in 2000 was 121.37 kilograms (Table 2), about 0.34 liters per day or about 70 percent of the FAO recommendation. The domestic milk production per-person in Mexico has been decreasing, reflecting a higher population growth rate as compared to the milk production growth rate (USDA-FAS, 2002). Fluid milk consumption for 2003 is forecast to increase slightly due to general population growth and increased usage by bakeries, confectionaries and dairy processors (USDA-FAS, 2002).

According to the Mexican government, the population of Mexico consumes about 30 percent of its milk raw, and about 24 percent of the population obtains subsidized milk under the government's social program. The first case represents a severe health problem, and the second case a heavy monetary burden to the government, which discourages domestic milk production. Due to urban expansion, the consumption of pasteurized milk and dairy products could increase as income levels rise (USDA-FAS, 2000).

Table 2. Per-capita consumption of dairy products in Mexico, 1991 through 2000.

| Year | All Milk[a] | Butter | Cheese | Skim Milk[a] | Whole Milk[a] | Whey[a] |
|---|---|---|---|---|---|---|
| | | | Kilograms | | | |
| 1991 | 99.12 | 0.74 | 1.52 | 15.61 | 85.52 | 7.92 |
| 1992 | 117.55 | 0.90 | 1.77 | 13.16 | 108.70 | 10.50 |
| 1993 | 125.00 | 0.85 | 1.83 | 12.75 | 114.52 | 10.37 |
| 1994 | 115.03 | 0.74 | 1.92 | 15.16 | 99.96 | 11.65 |
| 1995 | 106.16 | 0.56 | 1.56 | 10.76 | 98.80 | 10.37 |
| 1996 | 107.04 | 0.50 | 1.55 | 15.07 | 96.29 | 13.43 |
| 1997 | 111.25 | 0.61 | 1.65 | 23.92 | 90.71 | 13.62 |
| 1998 | 109.48 | 0.42 | 1.69 | 7.13 | 101.51 | 14.50 |
| 1999 | 116.88 | 0.50 | 1.88 | 9.00 | 106.09 | 14.62 |
| 2000 | 121.37 | 0.50 | 2.03 | 8.39 | 110.36 | 14.64 |
| Average Annual Growth (%) 1991-2000 | 2.6 | -2.5 | 1.5 | 2.1 | 3.4 | 7.9 |

[a] Included food and other uses, such as cattle feed.
Source: FAO Statistical Databases, 2002.

Public healthy concerns caused the decrease of butter consumption in the 1990s (USDA-FAS, 2000). However, due to the increase in usage from the bakery and confectionary industry and the population increase, consumption of butter in 2000 was maintained at 0.5 kilograms per person (Table 2). The average butter consumption per capita in the 1990s has decreased 2.5 percent per year (USDA-FAS, 2001).

The annual growth rate of cheese consumption in the 1990s was 1.5 percent on average, mainly due to more cheese varieties in the market and population growth. In 2000, per capita cheese consumption was 2.03 kilograms (Table 2), reflecting a stronger

consumer demand. Mexico's economic recovery continues, thus allowing consumer spending on dairy products to increase in the short term (USDA-FAS, 2002).

Of all dairy products, growth in per-capita consumption of skim milk, whole milk, and whey were relatively strong. In the 1990s, per-capita consumption for skim milk, whole milk, and whey grew on average by 2.1, 3.4, and 7.9 percent per year respectively. Per-capita consumption in these products reached record highs of 23.92 kilograms for skim milk in 1997, 114.52 kilograms for whole milk in 1993, and 14.64 kilograms for whey in 2000 (Table 2).

The decline in consumption of dairy products in the late 1990s was mainly due to effects from the devaluation of the peso and high inflation in the middle 1990s. Imports became more expensive as a result. As the economy recovered and per-capita income reached the pre-devaluation level, the per-capita consumption of dairy products rose again (USDEC, 2002).

In 1997, Mexico's milk production was about 80 percent of total consumption. By the year 2005, Mexico's self sufficiency is estimated to fall to 73 percent (USDEC, 1997). In 2000, Mexico's self sufficiency in milk was about 78 percent. The declining self-sufficiency is mainly caused by the growth in consumption of dairy products relative to the growth in production (USDA-FAS, 2002).

**Imports of Dairy Products**

Mexico is one of the largest importers of dairy products in the world. Because of the relatively close proximity to the US, it is also one of the largest importers of US milk and dairy products. In 2000, Mexico ranked seventh among all countries in total dairy products imported (in milk equivalent pounds) (Table 3). In 2000, Mexico's share of the world imports of dairy imports (in milk equivalent pounds) was about 3.4 percent (FAO Statistics, 2002).

For individual dairy products, Mexico ranked ninth and thirteenth in imports of butter and cheese in 2000 (Tables 4 and 5). The share of world imports of butter and cheese were about 2.7 and 1.8 percent respectively (FAO Statistics, 2002). In 2000, Mexico ranked second and sixth respectively in the world in total imports of dry skim milk and whey (Tables 6 and 7), with about 7.1 and 4.9 percent respectively of world imports (FAO Statistics, 2002).

Table 3. Selected countries' total dairy imports (in milk equivalent) and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 3,709,566 | 4 | 3,661,389 | 4 | 3,936,039 | 5 | 4,054,076 | 5 | 4,434,830 | 5 |
| China | 1,285,203 | 13 | 1,584,260 | 10 | 1,531,064 | 14 | 1,909,979 | 10 | 2,243,373 | 8 |
| France | 3,158,352 | 5 | 3,582,977 | 5 | 3,966,796 | 4 | 4,313,597 | 4 | 4,685,094 | 4 |
| Germany | 4,673,712 | 3 | 4,796,523 | 3 | 4,669,373 | 3 | 4,554,466 | 3 | 5,024,699 | 3 |
| Italy | 5,210,317 | 2 | 5,430,128 | 2 | 5,543,997 | 2 | 5,509,023 | 2 | 5,467,815 | 2 |
| Mexico | 1,912,993 | 8 | 2,121,080 | 8 | 2,021,171 | 7 | 2,217,376 | 7 | 2,310,820 | 7 |
| Netherlands | 6,385,562 | 1 | 6,061,069 | 1 | 5,633,207 | 1 | 7,113,321 | 1 | 6,297,773 | 1 |
| Spain | 1,450,968 | 11 | 1,583,212 | 11 | 1,652,153 | 11 | 1,661,739 | 12 | 1,918,970 | 10 |
| UK | 2,393,522 | 6 | 2,476,914 | 7 | 2,537,039 | 6 | 2,667,275 | 6 | 2,710,840 | 6 |
| USA | 1,380,531 | 12 | 1,466,204 | 12 | 1,873,207 | 8 | 1,953,107 | 9 | 1,953,940 | 9 |
| Total | 31,560,726 | ---- | 32,763,756 | ---- | 33,364,046 | ---- | 35,953,959 | ---- | 37,048,154 | ---- |
| World | 59,844,367 | ---- | 62,626,024 | ---- | 62,478,356 | ---- | 66,593,229 | ---- | 68,138,509 | ---- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 4. Selected countries' total butter imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 100,015 | 5 | 103,759 | 5 | 101,137 | 4 | 100,491 | 4 | 112,073 | 4 |
| Egypt | 50,225 | 7 | 37,759 | 8 | 35,253 | 9 | 43,115 | 8 | 44,141 | 7 |
| France | 109,919 | 4 | 137,381 | 3 | 133,670 | 2 | 129,819 | 1 | 148,302 | 1 |
| Germany | 132,955 | 1 | 156,822 | 2 | 134,930 | 1 | 123,476 | 2 | 131,121 | 2 |
| Italy | 48,315 | 8 | 52,087 | 7 | 60,124 | 7 | 46,864 | 7 | 41,167 | 8 |
| Mexico | 18,529 | 14 | 24,793 | 9 | 27,325 | 10 | 34,047 | 9 | 34,078 | 9 |
| Morocco | 28,050 | 9 | 16,457 | 15 | 22,104 | 12 | 19,818 | 12 | 27,357 | 10 |
| Netherlands | 68,782 | 6 | 94,022 | 6 | 69,879 | 6 | 96,933 | 5 | 86,887 | 5 |
| Russian | 125,810 | 2 | 169,698 | 1 | 83,053 | 5 | 53,200 | 6 | 53,857 | 6 |
| UK | 111,619 | 3 | 101,210 | 4 | 109,287 | 3 | 122,076 | 3 | 122,922 | 3 |
| Total | 794,219 | --- | 893,988 | --- | 776,762 | --- | 752,009 | --- | 801,905 | --- |
| World | 1,203,892 | --- | 1,321,235 | --- | 1,213,138 | --- | 1,217,796 | --- | 1,261,586 | --- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 5. Selected countries' total cheese imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 176,745 | 4 | 186,681 | 5 | 197,185 | 4 | 199,602 | 5 | 208,949 | 5 |
| France | 151,238 | 7 | 153,718 | 7 | 167,326 | 7 | 188,472 | 6 | 213,138 | 4 |
| Germany | 458,261 | 1 | 476,361 | 1 | 441,518 | 1 | 417,503 | 1 | 424,721 | 1 |
| Greece | 50,747 | 12 | 68,059 | 11 | 94,838 | 9 | 67,341 | 11 | 76,944 | 10 |
| Italy | 294,875 | 2 | 305,861 | 2 | 305,419 | 2 | 318,681 | 2 | 347,233 | 5 |
| Japan | 164,164 | 5 | 171,407 | 6 | 183,448 | 5 | 186,905 | 7 | 205,123 | 6 |
| Mexico | 20,653 | 20 | 26,078 | 20 | 33,816 | 16 | 44,518 | 13 | 54,162 | 13 |
| Netherlands | 92,067 | 9 | 84,895 | 9 | 100,869 | 8 | 116,845 | 8 | 122,438 | 8 |
| Spain | 81,511 | 10 | 81,046 | 10 | 86,363 | 10 | 94,223 | 9 | 104,688 | 9 |
| UK | 258,704 | 3 | 261,775 | 3 | 249,191 | 3 | 272,312 | 3 | 268,613 | 3 |
| USA | 154,764 | 6 | 142,793 | 8 | 170,557 | 6 | 203,042 | 4 | 192,342 | 7 |
| Total | 1,903,729 | --- | 1,958,674 | --- | 2,030,530 | --- | 2,109,444 | --- | 2,218,351 | --- |
| World | 2,688,552 | --- | 2,843,580 | --- | 2,786,286 | --- | 2,887,650 | --- | 3,093,644 | --- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 6. Selected countries' total dry skim milk imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Algeria | 58,468 | 9 | 78,893 | 5 | 87,040 | 4 | 71,272 | 8 | 91,339 | 5 |
| Belgium | 51,781 | 12 | 43,521 | 11 | 43,155 | 13 | 45,150 | 15 | 71,900 | 9 |
| China | 37,975 | 15 | 40,945 | 13 | 44,813 | 12 | 51,150 | 13 | 56,862 | 10 |
| France | 33,446 | 18 | 28,453 | 20 | 42,636 | 14 | 63,791 | 9 | 84,735 | 6 |
| Indonesia | 45,916 | 14 | 41,034 | 12 | 33,133 | 18 | 98,348 | 5 | 82,574 | 7 |
| Italy | 126,614 | 3 | 127,504 | 3 | 126,494 | 2 | 121,779 | 3 | 109,008 | 4 |
| Malaysia | 78,151 | 5 | 75,000 | 6 | 59,596 | 6 | 71,879 | 7 | 74,721 | 8 |
| Mexico | 126,700 | 2 | 132,849 | 2 | 102,600 | 3 | 125,137 | 2 | 129,078 | 2 |
| Netherlands | 216,085 | 1 | 224,214 | 1 | 162,459 | 1 | 230,438 | 1 | 205,379 | 1 |
| Philippines | 83,704 | 4 | 98,050 | 4 | 77,637 | 5 | 86,729 | 6 | 111,455 | 3 |
| Total | 858,840 | --- | 890,463 | --- | 779,563 | --- | 965,673 | --- | 1,017,051 | --- |
| World | 1,716,935 | --- | 1,727,457 | --- | 1,607,154 | --- | 1,879,505 | --- | 1,805,896 | --- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 7. Selected countries' total whey imports and ranking, 1996 through 2000.

| | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank | Mt | Rank |
| Belgium | 52,959 | 4 | 55,759 | 3 | 58,099 | 3 | 54,842 | 4 | 56,299 | 5 |
| Canada | 43,224 | 6 | 36,554 | 10 | 37,996 | 9 | 48,375 | 6 | 62,441 | 3 |
| China | 72,882 | 2 | 89,359 | 2 | 78,819 | 2 | 97,717 | 2 | 140,057 | 2 |
| France | 29,238 | 10 | 40,931 | 7 | 50,588 | 5 | 49,463 | 5 | 59,048 | 4 |
| Germany | 66,975 | 3 | 45,070 | 5 | 48,759 | 6 | 46,114 | 7 | 40,077 | 9 |
| Italy | 40,845 | 7 | 37,598 | 8 | 42,637 | 8 | 37,584 | 10 | 42,029 | 8 |
| Japan | 32,343 | 9 | 37,481 | 9 | 37,351 | 10 | 41,157 | 9 | 39,522 | 10 |
| Mexico | 48,636 | 5 | 49,174 | 4 | 56,642 | 4 | 55,947 | 3 | 55,031 | 6 |
| Netherlands | 251,310 | 1 | 217,543 | 1 | 248,474 | 1 | 292,637 | 1 | 252,099 | 1 |
| Spain | 37,147 | 8 | 43,362 | 6 | 44,869 | 7 | 44,225 | 8 | 49,109 | 7 |
| Total | 675,559 | ---- | 652,831 | ---- | 704,234 | ---- | 768,061 | ---- | 795,712 | ---- |
| World | 886,132 | ---- | 902,409 | ---- | 973,881 | ---- | 1,054,173 | ---- | 1,124,090 | ---- |

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

The consumption of dairy products in Mexico is growing faster than domestic production. As a result, Mexico has to import dairy products to satisfy its domestic consumption. In 2000, Mexico's self sufficiency was 78 percent (FAO Statistics, 2002). Due to the faster growth in consumption, Mexico's self sufficiency is falling (USDA-FAS, 2002). Imports of dairy products into Mexico increased in the 1990s. Since 1991, imports of all dairy products (in milk equivalent pounds) have been increasing by 13.0 percent on average every year (Table 8). In 2000, Mexico imported 2,310,820 metric tons of dairy products (in milk equivalent pounds), which was a 4.2 percent increase over the previous year (FAO Statistics, 2002).

Table 8. Mexico dairy imports, 1991 through 2000.

| Year | Milk Equivalent | Butter | Cheese | Dry Whole Milk | Dry Skim Milk | Whey |
|---|---|---|---|---|---|---|
| | | | Metric Tons | | | |
| 1991 | 1,142,855 | 37,713 | 14,631 | 19,213 | 38,445 | 16,751 |
| 1992 | 2,450,155 | 39,668 | 22,225 | 67,913 | 145,000 | 31,923 |
| 1993 | 2,726,246 | 40,460 | 29,506 | 42,493 | 190,358 | 20,931 |
| 1994 | 2,289,942 | 35,947 | 40,143 | 43,121 | 118,319 | 30,451 |
| 1995 | 1,689,224 | 20,072 | 16,397 | 28,660 | 106,400 | 25,178 |
| 1996 | 1,912,993 | 18,529 | 20,653 | 32,225 | 126,700 | 48,636 |
| 1997 | 2,121,080 | 24,793 | 26,078 | 41,532 | 132,849 | 49,174 |
| 1998 | 2,021,171 | 27,325 | 33,816 | 46,952 | 102,600 | 56,642 |
| 1999 | 2,217,376 | 34,047 | 44,518 | 35,225 | 125,137 | 55,947 |
| 2000 | 2,310,820 | 34,078 | 54,162 | 33,611 | 129,078 | 55,031 |
| Average Annual Growth (%) 1991-2000 | 13.0 | 1.4 | 21.8 | 23.2 | 31.9 | 21.5 |

Source: FAO Statistical Databases, 2002.

Mexico imported 34,078 metric tons of butter in 2000 (Table 8). The growth rate of butter imports in the 1990s was about 1.4 percent on average. The strongest growth occurred in the cheese, dry whole milk, dry skim milk, and whey markets, where growth on average was 21.8, 23.2, 31.9, and 21.5 percent, respectively (Table 8). Although it is somewhat misleading, Mexican imports of dairy products trended upward. The increases in imports were mainly due to the improving economy, which increased disposable income of middle-income consumers (USDA-FAS, 2002).

**Exports of Dairy Products from the U.S.**

In the 1990s, Mexico's annual butter imports from the US had been declining over the decade. The US share of the total imports of butter ranged from three percent in 1999 to 41.4 percent in 1993. The main reason for the decrease in US butter imports into Mexico in 1999 was the peso devaluation against the dollar (USDA-FAS, 2000). In 2000, the market share of the US cheese imported into Mexico was 18.4 percent (Table 9). Imports of cheese from the US were focused on high-quality cheeses, which generally were not produced domestically. That demand for US cheese is expected to remain stable since those cheeses are consumed mainly by families with incomes above the national average. Cheese consumption is forecast to continue to increase as a result of population growth, and the improving economic situation. Under NAFTA, cheese from the United States will enter duty-free starting in 2003 (USDA-FAS, 2002).

Table 9. Selected dairy products exported from the US to Mexico, 1991 through 2000.

| Year | Butter[a] | % of All Butter Imports[b] | Cheese[a] | % of All Cheese Imports[b] | Whole Dry Milk[a] | % of All WDM Imports[b] | Non-Fat Dry Milk[a] | % of All NFDM Imports[b] | Whey[a] | % of Whey Imports[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | % | Mt | % | Mt | % | Mt | % | Mt | % |
| 1991 | 12,010.8 | 31.8 | 3,244.2 | 22.2 | 4,257.8 | 22.2 | 19,190.0 | 49.9 | 12,810.9 | 76.5 |
| 1992 | 12,029.3 | 30.3 | 5,909.0 | 26.6 | 3,636.2 | 5.4 | 24,479.5 | 16.9 | 25,764.5 | 80.7 |
| 1993 | 16,760.3 | 41.4 | 7,217.5 | 24.5 | 16,452.4 | 38.7 | 48,576.8 | 25.5 | 17,908.6 | 85.6 |
| 1994 | 14,299.7 | 39.8 | 9,963.4 | 24.8 | 2,455.2 | 5.7 | 20,606.5 | 17.4 | 13,249.0 | 43.5 |
| 1995 | 2,358.8 | 11.8 | 4,634.4 | 28.3 | 10,981.1 | 38.3 | 13,359.4 | 12.6 | 8,331.0 | 33.1 |
| 1996 | 2,920.7 | 15.8 | 4,765.7 | 23.1 | 3,141.0 | 9.7 | 5,442.3 | 4.3 | 16,723.9 | 34.4 |
| 1997 | 7,212.9 | 29.1 | 5,547.2 | 21.3 | 29,998.4 | 72.2 | 1,849.6 | 1.4 | 18,316.5 | 37.2 |
| 1998 | 4,921.2 | 18.0 | 6,185.2 | 18.3 | 35,394.2 | 75.4 | 14,578.1 | 14.2 | 20,083.1 | 35.5 |
| 1999 | 1,015.4 | 3.0 | 5,089.6 | 11.4 | 2,961.3 | 8.4 | 60,881.5 | 48.7 | 16,109.3 | 28.8 |
| 2000 | 4,927.0 | 14.5 | 9,979.0 | 18.4 | 2,598.1 | 7.7 | 30,649.9 | 23.7 | 28,668.6 | 52.1 |

[a] Source: United States Department of Agriculture Foreign Agricultural Service, 2003.

[b] Data from Table 8.

In the 1990s, Mexico's annual whole dry milk imports from the US fluctuated, reaching a high of 75.4 percent in 1998 and a low of 5.4 percent in 1992 (Table 9). In 2000, Mexico imported 2,598.1 metric tons of whole dry milk from the US, and the market share of US dry whole milk imports was about 7.7 percent (Table 9).

Mexico continues to be far from reaching self-sufficiency in nonfat dry milk production because of insufficient domestic processing capacity (USDA-FAS, 2002). In the 1990s, Mexico's annual nonfat dry milk imports from the US fluctuated, with the shares ranging from 1.4 percent to 49.9 percent (Table 9), due mainly to the devaluation of the peso against the dollar in the 1990s and the intensive market competition from cheaper sources like Australia and New Zealand (USDA-FAS, 2002). For 2002, the nonfat dry milk imports decreased from the previous year's 47,413.6 metric tons to 39,210.7 metric tons, due in part to increased domestic production of fluid milk and to the pressure exerted on the government authorities by the domestic milk producers to reduce imports of nonfat dry milk (USDA-FAS, 2003). As domestic production of powdered milk is limited, imports, although possibly at a lower rate, are expected to continue in the short and possibly in the medium term (USDA-FAS, 2002).

Mexico ranked second among importers of US whey in the 1990s. In the 1990s, Mexico's total whey imports represented an estimated 65 to 70 percent of total whey products consumption and the United States had a dominant market share. In 1998, U.S. whey exports to Mexico exceeded 20,000 metric tons (Table 9), valued over $20 million (USDA-FAS, 2000). In 2000, the US whey exports to Mexico increased to 28,668.6

metric tons, a share of 52.1 percent (Table 9). An estimated 30 to 35 percent of Mexico's whey imports are used in the production of animal feed. The remainder is used in products for human consumption. The U.S. dairy industry is also working with the Mexican confectionery, bakery, and processed-meat industries to increase the usage of U.S. whey products. The NAFTA tariff rate for whey powder was four percent in 1999, decreasing by one percent yearly to reach zero percent in 2003 (USDA-FAS, 2000).

**Trade Policy and Tariff**

Mexico joined the General Agreement on Tariffs and Trade (GATT) in 1986, after the unilateral reduction of tariffs and the elimination of import permits. Mexico's market access agreement to the GATT resulted in the tariffication of all dairy products. In 1996, the average tariff levied on all dairy products was 40.3 percent, and the range was zero to 128 percent. In the past, dairy products were imported under a licensing system where licenses were rejected if supplies were sufficient domestically (GATT, 1995).

In 1994, the US, Canada, and Mexico signed a trilateral free trade agreement—North America Free Trade Agreement (NAFTA). The trade between Mexico and the US has almost doubled compared to the pre-NAFTA. Since NAFTA, Mexico has established preferential tariff rates for U.S. dairy products. When NAFTA went into effect, a maximum of 45,000 metric tons of U.S. milk powder could enter Mexico duty free. This quantity was set to expand by three percent per year annually. U.S. imports above the quota are facing a tariff rate of no less than 139 percent. US exports of fresh and

processed cheese were assessed initial tariffs of 40 and 20 percent respectively. Both of these tariffs are to be reduced to zero by the year 2004 (USDA-FAS, 1998). The overall tariff rates assessed to other countries are typically twice the rate assessed to US dairy products. However, the tariff rate for fresh and processed cheese to other countries is 125 percent, which is 105 percent difference for processed cheese and 85 percent difference for fresh cheese (WTO, 1999).

Effective Jan. 1, 2003, tariffs for most U.S. dairy exports to Mexico were reduced to zero percent, reflecting terms of the North American Free Trade Agreement (NAFTA). For skim dry milk, Mexico maintains a duty-free quota to NAFTA countries of 50,670 metric tons. Above-quota tariffs on skim dry milk are 70.4 percent. Access on skim dry milk continues to increase until 2008, at which time US products will receive duty-free access (USDEC, 2003).

## SUMMARY

Over the last decade, the world total dairy imports increased. Since the establishment of the UR GATT in 1995, the share of EU dairy exports has declined, due in part to the impact of export subsidy limitations. As trade barriers and export subsidy levels are further phased down and world demand increases, the US is in a good position to gain greater access to the international markets. Although Australia and New Zealand are expected to be the primary gainers from the new trade environment, the US has the production capacity to be a major world supplier (Washington, 2000).

Canada is unlikely to abandon its supply management system to fully participate in the free trade market of dairy products. However, as ways to avoid the WTO restrictions are eliminated, Canada may have to further liberalize its dairy market, leading to an even greater potential for imports into Canada. Given the proximity of the United States and Canada, US dairy exporters may benefit from this in the long run. However, the future of Canadian dairy market for US dairy exporters is uncertain

The US has a positive future to import dairy products to Mexico. Its recent growth in the per-capita consumption of milk and dairy products has been strong and is far exceeding the growth in production. Mexico recovered from an economic crisis and instability. Additional increases in consumption and imports are expected after further deregulating its dairy industry.

NAFTA appears to hold substantial positives for the US dairy industry with relatively few potential negatives. A number of studies have assessed the potential for increased U.S. exports of dairy products to Mexico. US products have a strongly positive image

among the Mexican populace. This indicates the opportunities for increased exports of cheese, frozen desserts, and yogurt is all reasonably strong.

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