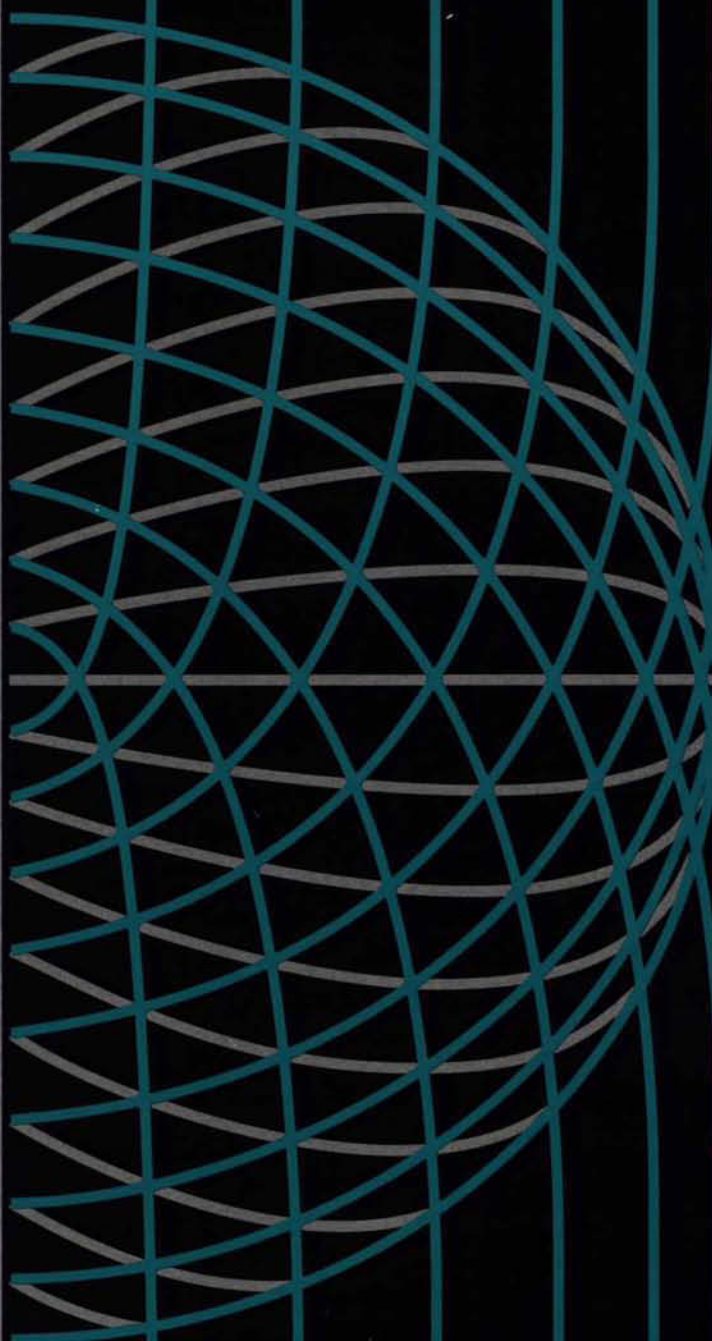


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# Livestock and Poultry Feeds

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### FOREWORD

*In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to growth and prosperity. Promoting improved performance by Canadian firms in the global marketplace is a central element of the mandates of Industry, Science and Technology Canada and International Trade Canada. This Industry Profile is one of a series of papers in which Industry, Science and Technology Canada assesses, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological, human resource and other critical factors. Industry, Science and Technology Canada and International Trade Canada assess the most recent changes in access to markets, including the implications of the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the profiles.*

*Ensuring that Canada remains prosperous over the next decade and into the next century is a challenge that affects us all. These profiles are intended to be informative and to serve as a basis for discussion of industrial prospects, strategic directions and the need for new approaches. This 1990-1991 series represents an updating and revision of the series published in 1988-1989. The Government will continue to update the series on a regular basis.*

Michael H. Wilson  
Minister of Industry, Science and Technology  
and Minister for International Trade

## Structure and Performance

### Structure

The feed industry includes establishments that manufacture complete feeds, premixes (composed of vitamins, minerals and, sometimes, medications) and feed supplements (composed of premixes and protein concentrates). Profiles on two related industries, *Processed Forage* (dehydrated alfalfa) and *Pet Foods*, have also been published in this series.

Feed manufacturing is the largest grain- and oilseed-based processing industry in Canada, with total sales of approximately \$2.8 billion. The feed industry is made up of organizations of various sizes, with annual sales ranging from less than \$5 million to over \$130 million. Excluding mixing operations performed on farms, there are at least 100 independent feed manufacturers, although fewer than

10 operate plants in more than two provinces. In 1989, the Canadian feed industry comprised 510 production establishments and employed about 8 800 people. Fewer than 10 organizations account for about 70 percent of the total production in the country. In addition to privately owned firms, farmer-owned co-operatives are significant participants, accounting for about 30 percent of total shipments. Firms in the feed industry are extensively involved in retail sales of their own products. Franchising and the use of brand names are common marketing techniques.

The feed industry is the largest domestic purchaser of grain. Feed grains, particularly corn and barley, make up 60 to 70 percent of the volume of most balanced feeds.

The industry purchases more than \$2 billion worth of a wide variety of inputs, many of which are by-products from the flour milling, malting and brewing industries, as well as



screenings from grain cleaning. It is also a major purchaser of items such as meat meal, feather meal, blood meal and tallow from meat packers; fish meal from fish packers; and soybean, canola and linseed meals from vegetable oil processors. Other important inputs include vitamins, minerals, trace minerals, macrominerals, amino acids and medications. The largest firms in this industry are often diversified into meat packing, oilseed processing and grain handling, activities that supply feed manufacturers with many of the materials they need.

Swine, dairy and poultry feeds account for about 85 percent of complete feeds sold. The industry also supplies the important on-farm mixing sector with micromixes, other premixes and feed concentrates. (Micromixes are high-value, low-volume combinations of vitamins and trace minerals used as a component in a balanced feed.)

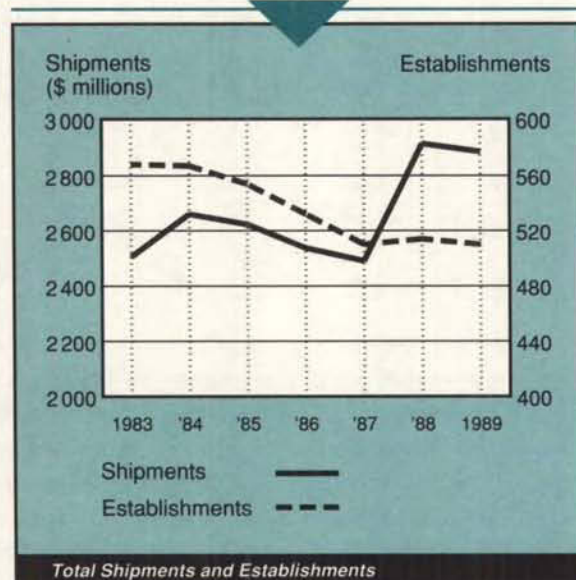
The feed industry primarily serves local domestic markets. Exports of feed are largely confined to cross-border movements to neighbouring U.S. states. In 1989, exports originated mainly from Ontario and Quebec and were valued at \$40 million. Small quantities, less than 10 percent of all exported manufactured feeds, are shipped to European, Latin American and Pacific Rim countries.

Imports of both manufactured feeds and medicated feed supplements totalled \$88 million in 1989. Significant amounts of many ingredients, such as soybean meal, molasses, vitamins, trace minerals and animal health products, were imported. The United States was by far the largest supplier of both feed industry inputs and manufactured feeds.

Although there is a strong foreign presence in the industry, Canadian ownership is predominant among small and medium-sized firms and among co-ops. Firms based in the United States and Great Britain have significant operations in Canada that are involved in the manufacture of supplements and complete feeds. Foreign ownership is prominent among firms making the higher-valued premix products and specialty feeds (fish feeds, liquid feeds, etc.).

Most manufactured feeds are sold within a 100-kilometre radius of a plant, although higher-valued specialty feeds and ingredients are traded over a much wider area. In order to provide effective customer service, the regional distribution of feed mills parallels that of livestock and poultry across the country.

Although there are feed mills in every province, over 70 percent of feed shipments originated from establishments located east of the Ontario/Manitoba border. Production costs vary from one region to another. They are lowest in the Prairies and Ontario where feed grain supplies, the principal ingredient of animal feeds, are most plentiful.



In a fully integrated operation, a feed mill and the particular livestock operation it serves have the same owner. Some integration of feed manufacturing with livestock and poultry raising exists in Canada, although this is not as far advanced as in the United States or elsewhere. As a result, Canadian feed mills tend to produce a wider range of feed products and tend to specialize less than some of their foreign counterparts.

## Performance

The value of shipments measured in constant 1981 dollars increased 87 percent over the past 15 years, although the volume of shipments remained about the same. While the value of shipments has increased steadily since the early 1970s, exceeding \$2.8 billion by 1989, the total number of plants has been declining steadily, and individual plant capacities have increased dramatically.

Since automated mill equipment is costly, firms have been selective in choosing their sites when considering whether to upgrade or close a plant. The major strategic consideration behind local feed plant investment is the desire to maintain or increase market share in an environment where livestock and poultry populations have become fairly static. As a result, larger, centralized facilities with the best access to raw materials and markets for finished products have replaced some smaller, older facilities. The number of establishments decreased from 719 in 1973 to about 510 in 1989 (see accompanying figure).

Employment has been slowly declining as feed mills either close down or become increasingly automated. Labour





productivity in the industry has slowly improved with the closure of smaller mills and a greater centralization of manufacturing. In 1989, the industry employed an estimated 8 800 people, down from 9 683 people in 1980.

Demand for feed is directly related to livestock and poultry production. The fairly steady industry growth in shipments in the 1970s kept pace with the increasing livestock and poultry population growth. Some important trends, which started at the beginning of that decade in the livestock- and poultry-producing sectors, were beginning to affect feed industry performance more acutely in the 1980s. Shifts in consumer tastes were beginning to be felt through the food chain. Cattle populations decreased as red meat consumption declined, and the demand for milk and eggs became static while the demand for poultry meat grew. These events caused corresponding shifts in the feed products required.

Strong demand for feed from the poultry sector has been the major contributor to growth for the industry. Poultry feeds, particularly for broilers and turkeys, high-value feeds like fish feeds, specialty horse feeds, micromixes and premix feeds, have been the strongest and most consistent performers over the past decade. More recently, feeds for exotic species (deer, elk, etc.) have become important new market prospects.

In addition to consumer pressures, technological developments on farms have also affected the industry. Developments in small-scale mill equipment and larger farm sizes have led to more on-farm mixing of animal feeds, thus taking business away from independent feed mills not integrated with livestock operations.

Improvements in livestock breeding have gradually resulted in animals that have better feed conversions (growing faster on less feed) than their predecessors. When the improvements in breeding are combined with skilled management, improved livestock and poultry performance result in more efficient use of animal feed. More sophisticated animal feed purchasers are requiring manufacturers to meet their specific technical needs at competitive market prices.

These underlying structural developments gradually contributed to a serious over-capacity in all parts of the country, with many plants operating at about 60 percent of their capacity. These factors are expected to continue to shape the industry into the 1990s.

The cost of feed is by far the largest expenditure for livestock and poultry raisers. Between 1983 and 1989, the profit levels in livestock and poultry raising were generally favourable because of lower feed grain prices and improvements in market prices for hogs and beef cattle.

Feed manufacturers benefited from this favourable business environment, although there were some disruptions.

First, the U.S. countervailing actions on live hogs (1985) and pork (1988, but lifted June 1991) interrupted the flow of exports into that country causing uncertainty and a loss of confidence in the swine industry concerning continued access to the export market. Second, the 1988 drought drove up the price of feed grains and protein meals sharply in both Canada and the United States during the second half of 1988 and the first half of 1989. For the feed industry, profitability continues to remain tied to the relative success of their clients — the livestock and poultry raisers.

## Strengths and Weaknesses

### Structural Factors

Proximity to the customer, ingredient prices, plant productivity, product development and on-farm mixing are key factors affecting industry performance.

Proximity to the customer is one of the most important factors affecting competitiveness. Long-distance transportation costs cannot be justified for most bulky complete-feed products, with the exception of some high-value or specialty items. In order to minimize these costs, the industry has a highly developed network of feed mills across Canada designed to serve local customers.

In both Canada and the United States, production and marketing tend to be regionally and locally oriented. A few Canadian mills do serve international markets, but usually in the form of local cross-border trade. U.S. imports are primarily high-value items, such as medicated feed supplements, for which transportation costs can be justified. With virtually no vitamin production and a limited pharmaceutical fine chemical industry in Canada, many of these additive items must be imported.

Both Canada and the United States are major producers of feed ingredients (such as feed grains and protein meals) which represent about 80 percent of feed production costs. In both countries, the availability and prices of local grains and proteins in a given area affect feed production costs more than any other factor. Feed mills in grain-deficient regions like the New England states, the Atlantic provinces and British Columbia can have feed costs that are up to 25 percent higher than those in the regions of North America that have a grain surplus (the corn/soybean belts in Southwestern Ontario and the U.S. Midwest or the feed grain production areas in Western Canada).

Overall physical productivity varies greatly from plant to plant in the industry. Wage rates are fairly uniform across the country, but plants vary considerably in size, age, efficiency of layout and degree of automation. Although economies of





scale are important in the production process, the tight links to local markets place some constraints on the economies of scale that can be achieved. Since Canada's multipurpose plants produce a fairly wide range of products, they are characterized by shorter production runs than some specialized U.S. plants. The quality of Canadian products and the level of plant technology used is comparable to that found in the United States.

In the area of product development, Canadian nutritionists have demonstrated their ability to support an emerging aquaculture industry as well as to develop diets for alternative species (deer, elk, etc.). In addition, the Canadian industry is responding to changes in consumer tastes by analyzing possible changes in ration formulations. Examples of these responses include a shift from butterfat to protein content in feed for dairy cattle required to support a new pricing policy for milk; a diet to support the alteration of lean-to-fat ratios in the red meat industry; and a feed formula designed to produce eggs having lower cholesterol.

The increase in on-farm mixing has led to a shift in demand towards premixes and feed concentrates from which farmers can prepare complete feeds using their own grains. On-farm mixing is predominant in areas of good grain production. In grain-deficient areas, the demand for commercially prepared complete rations is stronger. For independent feed manufacturers, on-farm mixing represents a serious long-term competitive consideration in both Canada and the United States.

### Trade-Related Factors

Since countries engaged in livestock and poultry production generally have their own feed-manufacturing industries, international trade is largely in feed ingredients rather than in finished products.

When the Canada-U.S. Free Trade Agreement (FTA) became effective on 1 January 1989, Canadian and American customs duties on animal feeds were eliminated. Two-way trade in animal feed between the two countries has not been affected, since tariffs on most animal feeds or ingredients were already zero or at very low levels before the agreement.

A Canadian countervailing duty on imports of U.S. corn has been in effect since November 1986. Currently, this duty is 46 cents per bushel. British Columbia feed users and manufacturers have been exempted from paying this duty. Countervailing duty also applies to the corn content (by weight) of animal feeds, although corn gluten is not subject to countervail. Imported corn that is incorporated in animal feed for re-export is eligible for duty drawback.

Most feed ingredients may be imported into Japan duty-free. European Community (EC) customs duties, on

the other hand, are often high. Variable import levies and other subsidy schemes also have been set up to protect EC feedstuff production.

World markets for feed ingredients have been increasingly affected by government intervention in the past decade. EC subsidies have made Western Europe self-sufficient and a major grain exporter. In the United States, legislation provides for a system of acreage-reduction incentives, price supports, commodity-loan programs and export policies. These have influenced the supply and prices of feed ingredients. The U.S. *Agricultural Security Act* of 1985 provided the formal legal basis for these programs. It was designed to lower American feed-ingredient prices and thus improve the U.S. position in world markets. This same approach was carried over in the development of the new farm bill approved by the U.S. Congress in the fall of 1990.

Canadian federal legislation requires import licences for foreign wheat and barley and products thereof and restricts their import for use in feed. Import licences traditionally are granted only if there is a shortage of these grains in Canada. Since Canada is a major producer and exporter of feed grains, there is seldom a need for imports, so licences for these grains are rarely granted.

An important exception to this requirement is U.S. wheat and wheat products, which may be imported for animal feed use. An end-use certificate issued by the Canadian Grain Commission is required for U.S. wheat that is destined for a Canadian feed mill for processing. Shipments of U.S. wheat imported for direct feeding to livestock must be denatured in accordance with the requirements of Part 1 of Schedule IV of the Feeds Regulations, 1983. These regulations require that at least 10 percent by weight of the kernels be completely, visibly and permanently coloured by an approved colouring agent.

In the case of exports, an animal feed can contain up to 25 percent barley or barley by-products without needing a Canadian Wheat Board (CWB) licence. In such circumstances, the grain involved can be purchased from the private trade (known as *off-board* purchases). If the feed contains more than 25 percent barley or barley by-products, a CWB licence is required and the grain must be purchased from the Board. For exports to the United States, the off-board percentage in the ration can be as high as 75 percent if certain other CWB conditions are met.

The FTA may require Canada to eliminate the import licences currently required for barley used as feed grain or in manufactured feeds. This event will occur if there is concurrence that the level of government support programs in the United States for barley is equal to or lower than the level of government support for this grain in Canada.





The agreement also provides for future negotiations to harmonize a wide range of technical regulations on labelling, content guarantees, testing methods for feeds and feed mill inspection procedures; for establishment of equivalent manufacturing-practice regulations for medicated feeds, tolerances for contaminants and drug residues in feeds; and for agreement on the kinds of additives and drugs to be allowed in feeds and on controls for their use. Progress has been made in resolving some of these areas as a result of recent work by technical groups representing both countries.

Technical regulatory requirements, which vary from country to country, tend to discourage trade in manufactured feeds. In the case of the United States, some of these regulatory requirements vary among states. There are additional considerations for trade in medicated feeds. Each country has its own regulatory process for approving feed-additive drugs. This process can result in different procedures and requirements regarding the use of the same drugs.

Differences in national legislation in some areas, particularly when drugs and drug residues are concerned, have resulted in international trade disputes. Such legislation remains an area of concern. Significant differences exist between Canada and the United States regarding approved drugs and procedures governing their use. While differences for existing products now in use are expected to remain, technical authorities in Canada and the United States hope to establish common standards for future products as they are developed and approved.

### Technological Factors

Although domestic research and development efforts are fairly modest, the Canadian industry remains competitive through the adoption of new technologies developed abroad. The close linkages between the performance of the livestock and poultry production and animal feed sectors cause the feed industry to pay close attention to developments in nutrition research, animal health, veterinary medicine and biotechnology. New technologies used in Canada often mirror those adopted in the United States or elsewhere.

Nutrition research has produced improved feed products which result in greater palatability, improved feed conversions and faster weight gains. Veterinary science, animal health and biotechnology research is producing an array of new pharmaceuticals, growth hormones and drug implants that will have an impact on feed usage.

The diffusion of the latest feed-plant manufacturing technology (automation and improved mill equipment) is under way in Canada, but the level of technology in the more than 500 facilities in operation varies considerably. Plant

operations have become increasingly capital-intensive as a result of a number of developments:

- As farm sizes increase and farmers automate their feed-handling systems, manufacturers have seen an increase in demand for bulk feed over bagged products. The change has meant a reduction in labour requirements.
- There is an increased use of computers by nutritionists in calculating least-cost feed formulations. Least-cost feed formulation programs are increasing in complexity in order to match demand for more scientifically sophisticated products to meet the changing requirements of modern genotypes of farm animals.
- Improvements in electronics now permit fully automated control of the blending process for feed compounds from raw material intake through to finished product outloading.
- Roasting, micronization and extrusion technologies, which are more widely used in Western Europe, are now occurring in Canada to ensure feed safety or to improve palatability for animals.

### Other Factors

The *Canada Feeds Act* and regulations, administered by Agriculture Canada, specify that feed manufacturers must meet certain technical product standards before offering their feeds for sale in Canada. Health and Welfare Canada approves and regulates the use of drugs and medications in feeds. These regulations also apply to imported feeds, but not to feeds destined for export.

Government farm income support programs that enhance the viability of animal agriculture also affect the feed industry. For example, supply management and stabilization programs in the livestock industry affect market demand for feed, as well as the degree of vertical integration in the industry.

The feed industry plays an important environmental role by utilizing and recycling fish wastes, livestock offals, and by-products from other grain processing industries that might otherwise be destined for a landfill site. There are, on the other hand, increasing concerns about food safety which are causing the feed industry to place greater emphasis on quality control over both the inputs and the production process. The potential effect on manufacturing costs is an emerging concern.

Environmental requirements pose some restrictions, particularly in the area of particle emission. The milling process creates dust, which must be kept at acceptable levels. The costs of compliance with environmental and work safety regulations vary from region to region, since these requirements are primarily not under federal jurisdiction.





## Evolving Environment

At the time of writing, weak demand conditions prevail in the North American economy. Companies in the sector are facing significant cyclical pressures in addition to underlying pressures for change of a longer-term, structural nature. Some temporary declines in new capital investment in mill equipment could occur during this period. At the same time, reduced consumer spending on high-value dairy products and red meat items is likely, depending on the depth and duration of the current recession.

Total demand for animal feed in Canada is likely to grow slowly. Consumer demand for milk, meat and eggs in Canada is limited by Canada's population growth, which is expected to be considerably less than 2 percent annually. Competition among firms will continue to be severe in spite of the rationalization and consolidation that has already occurred. Tight margins and careful inventory and purchasing practices on inputs will continue to be important.

In the mature market that is evolving, feed companies will probably continue to see mergers and acquisitions as the preferred expansion route. The upgrading of the plants remaining in operation will continue.

Competitive pressure on the industry will likely continue due to further integration of livestock and poultry raising with feed production and the trend toward on-farm mixing. This trend could decelerate if the feed industry is able to demonstrate to large livestock and poultry operators that it is more cost-effective to leave the technical side of feed production to outside specialists. To achieve that end, the feed industry is becoming aware of the need to provide nutrition and animal health consulting and specialized advisory support services to its clients who are becoming larger and more sophisticated.

Scientific developments in biotechnology, nutrition, animal health and veterinary science will continue to have an impact on the feed industry. Genetic engineering has the potential to produce superior types of livestock and poultry, which could have a dramatic (but as yet undetermined) impact on the industry.

## Competitiveness Assessment

Feed production and marketing are locally oriented activities involving little international trade. The Canadian feed industry is competitive in the domestic market and has enjoyed limited success in nearby export markets, primarily in the U.S. border states. Proximity to customers, technical

regulations, availability and prices of inputs are the major factors limiting two-way trade in feeds between Canada and the United States.

Off-shore export opportunities are limited because of high transportation costs for bulk products and the level of subsidies evident in the United States and the EC.

International trade tends to be greater in feed ingredients than in finished products. Increases in two-way trade may take place as a result of regulatory changes initiated by the FTA. In particular, greater access to the United States for live animals and livestock products will stimulate the production of animal feeds.

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## PRINCIPAL STATISTICS<sup>a</sup>

|  | 1973  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989               |
|--|-------|-------|-------|-------|-------|-------|-------|--------------------|
| Establishments                         | 719   | 568   | 567   | 554   | 532   | 510   | 514   | 510 <sup>b</sup>   |
| Employment                             | 9 132 | 9 169 | 9 244 | 9 403 | 8 952 | 8 790 | 8 900 | 8 800 <sup>b</sup> |
| Shipments (\$ millions)                | 974   | 2 505 | 2 660 | 2 624 | 2 537 | 2 490 | 2 913 | 2 885 <sup>b</sup> |
| GDP (constant 1981 \$ millions)        | 121.2 | 369.0 | 393.7 | 463.3 | 478.2 | 500.7 | 507.3 | 490.9              |
| Investments <sup>c</sup> (\$ millions) | 25.0  | 50.9  | 51.6  | 60.1  | 48.4  | 44.9  | 61.7  | 68.7               |

<sup>a</sup> This profile, as well as those dealing with *Pet Foods* and *Processed Forage*, relates to the feed industry (SIC 1053). More detailed information on what is included in that SIC may be found in the *Standard Industrial Classification 1980*, Statistics Canada Catalogue No. 12-501. Establishments, employment and shipments data in the above table are for all SIC 1053.

<sup>b</sup> ISTC estimates.

<sup>c</sup> Investment data include both capital expenditures and repair expenditures.

## TRADE STATISTICS<sup>a</sup>

|                                    | 1973 | 1983  | 1984  | 1985  | 1986  | 1987  | 1988 <sup>b</sup> | 1989 <sup>b</sup> |
|------------------------------------|------|-------|-------|-------|-------|-------|-------------------|-------------------|
| Exports (\$ millions)              | 3    | 33    | 34    | 32    | 36    | 35    | 46                | 40                |
| Domestic shipments (\$ millions)   | 971  | 2 472 | 2 626 | 2 592 | 2 501 | 2 455 | 2 867             | 2 845             |
| Imports <sup>c</sup> (\$ millions) | 6    | 44    | 48    | 47    | 61    | 87    | 99                | 88                |
| Canadian market (\$ millions)      | 977  | 2 516 | 2 674 | 2 639 | 2 562 | 2 542 | 2 966             | 2 933             |
| Exports (% of shipments)           | 0.3  | 1.3   | 1.3   | 1.2   | 1.4   | 1.4   | 1.6               | 1.4               |
| Imports (% of Canadian market)     | 0.6  | 1.7   | 1.8   | 1.8   | 2.4   | 3.4   | 3.3               | 3.0               |

<sup>a</sup> See *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly; and *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

<sup>b</sup> It is important to note that data in 1988 and after are based on the Harmonized Commodity Description and Coding System (HS). Prior to 1988, the shipments, exports and imports data were classified using the Industrial Commodity Classification (ICC), the Export Commodity Classification (XCC) and the Canadian International Trade Classification (CITC), respectively. Although the data are shown as a continuous historical series, users are reminded that HS and previous classifications are not fully compatible. Therefore, changes in the levels for 1988 and after reflect not only changes in shipment, export and import trends, but also changes in the classification systems. It is impossible to assess with any degree of precision the respective contribution of each of these two factors to the total reported changes in these levels.

<sup>c</sup> Imports may contain some veterinary pharmaceuticals for use in animal feed.





### SOURCES OF IMPORTS<sup>a</sup> (% of total value)

|                    | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|--------------------|------|------|------|------|------|------|------|
| United States      | 96   | 89   | 91   | 92   | 56   | 75   | 70   |
| European Community | 3    | 4    | 1    | 3    | 34   | 18   | 22   |
| Asia               | —    | 2    | 5    | 4    | 5    | 2    | 5    |
| Other              | 1    | 5    | 3    | 1    | 5    | 5    | 3    |

<sup>a</sup>See *Imports by Commodity*, Statistics Canada Catalogue No. 65-007, monthly.

### DESTINATIONS OF EXPORTS<sup>a</sup> (% of total value)

|                    | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|--------------------|------|------|------|------|------|------|------|
| United States      | 85   | 93   | 91   | 92   | 90   | 86   | 88   |
| European Community | 5    | 1    | 2    | 3    | 4    | 5    | 3    |
| Asia               | 5    | 3    | 4    | 4    | 4    | 4    | 5    |
| Other              | 5    | 3    | 3    | 1    | 2    | 5    | 4    |

<sup>a</sup>See *Exports by Commodity*, Statistics Canada Catalogue No. 65-004, monthly.

### REGIONAL DISTRIBUTION (average over the period 1986 to 1988)

|                             | Atlantic | Quebec | Ontario | Prairies | British Columbia |
|-----------------------------|----------|--------|---------|----------|------------------|
| Establishments (% of total) | 5        | 34     | 33      | 23       | 5                |
| Employment (% of total)     | 4        | 29     | 38      | 23       | 6                |
| Shipments (% of total)      | 4        | 33     | 36      | 20       | 7                |





## MAJOR FIRMS

| Name  | Country of ownership | Location of major plants   |
|---|----------------------|--|
| Canada Packers Inc.<br>(Shur-Gain Division)         | United Kingdom       | Prince Edward Island<br>Nova Scotia<br>New Brunswick<br>Quebec<br>Ontario<br>Alberta |
| Coopérative fédérée de Québec                       | Canada               | Quebec   |
| Federated Co-operatives Limited                     | Canada               | Manitoba<br>Saskatchewan<br>Alberta  |
| Parrish & Heimbecker Limited<br>(New-Life Division) | Canada               | Nova Scotia<br>Ontario<br>Manitoba<br>Saskatchewan<br>Alberta                        |
| Ralston Purina Canada Inc.                          | United States        | Quebec<br>Ontario<br>Alberta   |
| Robin Hood Multifoods Inc.<br>(Master Feeds)        | United States        | Newfoundland<br>Prince Edward Island<br>New Brunswick<br>Ontario<br>Alberta          |
| United Grain Growers Limited<br>(United Feeds)      | Canada               | Manitoba<br>Saskatchewan<br>Alberta<br>British Columbia                              |





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