An Overview of the Newfoundland and Labrador Agrifoods Industry

2004

Department of Natural Resources
www.gov.nl.ca/agric

NOTE:

Information contained in this report is compiled from numerious sources, both written and verbal, and is subject to change. More detailed and up to date information is available for most commodities, programs and services by contacting the department, and industry groups.

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Much of this report is composed of existing information gathered from various sources and by both written and verbal contributions from numerous current and former staff in the Agrifoods Branch. A current staff directory including job titles and telephone numbers is included in the appendix. Thanks to Jeffery Whalen, Director of Land Resource Stewardship and Hazen Scarth, Manager of Environment and Land Use Services, for their advise throughout the course of compiling this report. Former staff gratefully acknowledged for their contributions are: Martin Howlett, Ed O'Reilly, Sonia Glover, Jan van de Hulst, Dennis Curtis, Andrew Webber and Roger Churchill. Agrifoods Branch Directors whose input and staff support greatly facilitated completion of this project are gratefully acknowledged as well, i.e.: David Mackey, Director of Production & Market Development, Dr. Hugh Whitney, Director of Animal Health, Cynthia MacDonald, Director of Agricultural Business Development, and Carmel Turpin, Director of Communications. Of particular note is the information they and their staff provided on programs and services offered by their respective divisions, and for the commodity profiles. Thanks to Diane Blackmore for typing the first draft of report; Annette Curnew for typing revised drafts and compiling the staff directory; Sherry Fogwill for providing computerized photo files and Dena Parsons for proofing the manuscript. Thanks also to Deborah Guillemette who provided information regarding the activities of the Newfoundland and Labrador Federation of Agriculture and Martin Hammond, Executive Director Dairy Farmers of Newfoundland and Labrador, for reviewing the dairy sector portion of the report.

Cover photo of L. Ryan Farm, Torbay, by R. Tucker

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INTRODUCTION

This report provides an overview of opportunities in the agrifood sector in Newfoundland and Labrador and a description of agricultural programs and services offered by the provincial and federal governments. The target readership includes farmers, non-government organizations, agricultural land applicants, students and others who are interested in farming in Newfoundland and Labrador.

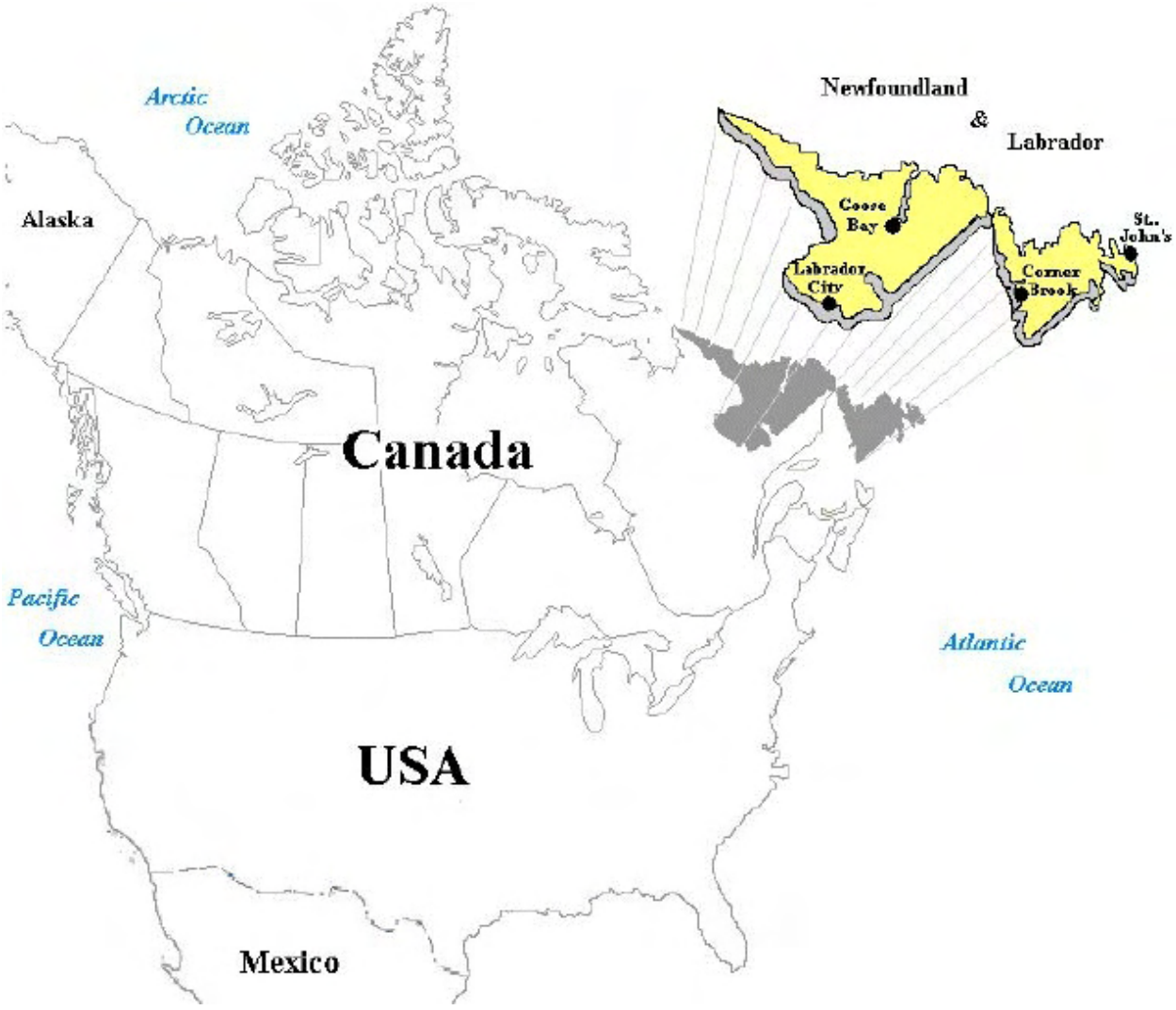
Newfoundland and Labrador is Canada's most easterly province and consists of the island of Newfoundland located in the Gulf of St. Lawrence, and the larger Labrador portion located on the eastern part of the Canadian mainland. The area of the insular portion of the province is 111,390 square kilometres and that of Labrador is 294,330 square kilometres. The Province's population totals approximately 516,000, 60 per cent of whom live in urban centres and the remaining in hundreds of small communities primarily scattered along the coast. The Labrador portion of the population is approximately 30,000. Traditionally, the fisheries have been the main industry in the province, followed closely by the forestry industry and the mining industry. At present, the offshore oil industry is rapidly becoming the main industry contributing to the province's gross domestic product.

The Newfoundland and Labrador agrifood industry is small compared to other provinces and countries. The limited number of farming operations are generally first generation enterprises that are well-managed. However, total farm cash receipts in 2003 were in excess of $83.1 million from more than 640 reporting farms; with the value of the agrifood industry estimated at $500 million. There is, however, a substantial undeveloped land base which would meet the province's production needs and agrifood development challenges and opportunities.

A basic need of any society is the ability to feed itself. Of critical importance in meeting this objective is an adequate arable land base, with an agricultural industry which is agronomically feasible, economically viable, environmentally responsible and socially acceptable. Newfoundland and Labrador farmers and agrifood processors can take pride in their commitment to these goals.

With the steady approach of globalization, Newfoundland and Labrador's agrifood industry is under tremendous pressure to perform and compete. There are some major impediments to rapid development, ranging from a limited developed land base to the absence of a totally integrated food chain.

There are still numerous opportunities for expansion to be explored in increased production of traditional agricultural commodities and new ventures. Government working in concert with industry can help foster this growth. Of particular note is the potential for significant expansion in the dairy sector resulting from the industry's negotiated 31 million litre industrial milk quota. Also of interest is the fact that 2002 marked the first commercial cranberry harvest in the province.


Arctic
Ocean
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Newfoundland
&
Labrador
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Labrador
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St.
John's
Corner
Brook
Canada
Pacific
Ocean
Atlantic
Ocean
USA
Mexico

HISTORY OF AGRICULTURE IN NEWFOUNDLAND AND LABRADOR

Although it has been documented that some of the earliest settlers in Newfoundland and Labrador engaged in limited farming, commercial scale agriculture did not flourish for the first 300 years or more of European occupation.

As late as 1811, farming of any magnitude was hampered by a law that prohibited the erection of houses for permanent residences in Newfoundland. This law was changed and permanent settlements began to spring up. In 1813, grants of land for agricultural purposes became available for the first time.

Even after it became lawful to take up grants of land, a tax or rental was imposed which did not encourage clearing or cultivation of the land. This tax was not removed until 1822. However, by 1810 there were about 50 farms in the St. John's area with an average size of 25 acres.

Perhaps the largest farm was Golden Grave Farm located on the north shore of Quidi Vidi Lake. In 1807, almost 50 years after being established by Captain Griffith Williams, the farm had expanded to 200 acres with 36 acres used to grow a variety of crops.

On the other hand, subsistence farming continued in the outports. Typically, a fisherman's garden consisted of a small patch of land from which the family was able to grow enough potatoes and cabbage for their own use. In addition, a few livestock were kept, which were left to graze throughout the community.

It was 1825 before Governor Cochrane began an active policy of encouraging agriculture. In the 1840s, Government sponsored the organization of an agriculture society in St. John's and provided prizes for various types of agriculture achievements.

By 1857, 422 inhabitants, most of whom were from Cape Breton, had cleared over 500 acres of land from St. George's to the Codroy Valley.

In the 1860s, the government attempted to stimulate interest in farming, by giving settlers a free grant of land, half the cost of buildings and land clearing bonuses of $8.00 an acre.

The first agricultural exhibition was held in 1869. In the 1880s, government, in its efforts to diversify the economy commenced several agriculture programs, including the surveying and construction of roads through the Humber Valley and Gambo Agriculture Districts.

The success of these programs is evident in the increase in the number of farmers. The 1874 figure of 1,000 farmers jumped to 1,700 farmers in just 10 years and by 1891 commercial and part-time commercial farmers were using almost 60,000 acres of land. The construction of the trans-island railway helped the expansion of the agriculture industry into the Bonavista Peninsula. Perhaps the greatest beneficiaries of the railway were the west coast farmers, as the railway enabled them to ship their produce to all points across the island - including St. John's.

The census returns of 1911 indicate that this was a banner year for Newfoundland and Labrador agriculture - perhaps the best ever. Over 100,000 acres of cleared land was being used by about 2,900 farmers. In 1911, the island's farms had about 32,000 cattle and 75,000 sheep in comparison to 2004 figures of 9,200 cattle and 7,800 sheep. In these years, agriculture was important to almost all communities. In 1916, for example, agriculture reports were submitted from 76 communities.

There was considerable diversification of the Newfoundland and Labrador economy in the early 1900s, with the construction of two pulp and paper mills and the development of a number of mines - notably the Buchans mine in 1928. Not surprisingly this period of affluence coincided with a loss of interest in farming. Initially, fewer people were involved in the industry followed by a lack of government interest, which was highlighted by auctioning off the Government operated model farm in 1924. The loss of life and financial burden resulting from World War I had significant impact on the economy, including farming activity.

A few years later Newfoundland and Labrador was struggling in the Great Depression of the 1930s. Once again the government was forced to consider agriculture as a means to ease the misery of the thousands who were on relief. At a cost of about $3,000 a settler, new farm communities were established at Markland, Lourdes, Brown's Arm and Harricott. Settlers were provided with life's necessities, including a house and five acres of land. In return, the government collected all surplus produce in the fall, for distribution to the destitute.

World War II had a sudden impact on the agriculture industry. Employment on military bases and massive enlistment in the armed forces enticed many away from making a living from the land. However, there was moderate expansion of farming activity near the military bases at Stephenville and St. John's.

In anticipation of the return of servicemen to Newfoundland after the war, a Post War Settlement program was implemented. On the Upper Humber, servicemen were employed to assist in road construction and surveying of farmlots. By 1947, between 30 and 35 farmers had each cleared and cultivated 7 to 10 acres of land. Their efforts provided the basis for the development of one of the principal agriculture communities in the province - the community of Cormack.

With Confederation in 1949 came many changes. Tariffs, which had been an important means in protecting the Newfoundland and Labrador farmers from less expensive mainland products, were removed. Low prices, in combination with increased job opportunities resulted in a 53 per cent decrease in the number of farms in Newfoundland and Labrador between 1945 and 1955.

Quarantine regulations imposed after Confederation with Canada, because of the presence of golden nematode, have restricted some crop/soil exports from the province. These constraints offer not only challenges but also opportunities.

Successive governments have endeavoured to encourage the production of crops and livestock. Initiatives have included the 'Royal Commission on Agriculture' in 1955, and 'The Report on the Task Force on Agrifoods' in 1991.

Agriculture in Labrador was first started by Moravian missionaries in late 1700s. Their techniques, however, were not passed on to the nomadic population of Labrador, whose diet at the time did not depend on cultivated crops. The Grenfell missions were the first to introduce agricultural practices in the form of kitchen gardens.

An increasing variety of vegetables have now become an integral part of the food supply and many people are expressing a desire to farm. In recent years, agricultural land planning has been incorporated into Labrador's town plan and development now includes greenhouse production and some livestock along with the production of a range of vegetables. Some commercial agriculture has been developed on the south coast of Labrador, which is particularly well known for its abundant harvest of wild bakeapples. Community garden plots producing a range of crops have become very popular in the Labrador City - Wabush and Churchill Falls areas with over 100 plots in production in 2003.

The Department of Natural Resources has prepared a Northern Agrifoods Strategy for implementation in consultation with farmers and community interest groups in Labrador.

Community garden, Churchill Falls

THE LAND AND CLIMATE

Most of the island of Newfoundland consists of a huge plateau sloping in a northeasterly direction with mountains along the south and west coast.

The larger rivers on the island flow north and east towards the sea. On the mountainous west and southern coasts, the rivers for the most part are short and fall quickly from the highlands to the Gulf of St. Lawrence. The exception is the Humber River which flows south from the base of the Great Northern Peninsula, creating some of the best farmland in the province.

Two major rivers flow east, crossing the great plateau area of Central Newfoundland. However, the region they cross is typically not an inviting one for agriculture. Three-fifths of this region is covered by barrens, bogland and thousands of lakes and ponds. The remainder is mostly forest.

Attached to the southeast corner of the island is the Avalon Peninsula, a warmer, more populated area than most of Newfoundland, and a traditional area for agriculture.

The Labrador portion of the province consists mainly of mountains, large plateaus with extensive peatlands and valleys and is subject to severe weather conditions. The limited amount of agriculture which occurs in Labrador is restricted to the central lowland and southern coastal regions.

The climate of the island of Newfoundland is greatly affected by the sea that surrounds it. The island juts out into the North Atlantic, the most eastern part of North America. Because of the moderating influence of the sea, island temperatures never range to the very high nor the very low. The cold Labrador current sweeps along both the east and west coasts, keeping the summers cool and moderating severe winter temperatures.

The island has none of the temperature extremes that are found in the interior of Canada at the same latitude. Temperatures are usually more extreme, however, in western and central Newfoundland than they are in the eastern and Avalon regions.

Newfoundland's frost free season ranges from 90 to 180 days with an annual precipitation of 800 mm to 1600 mm. Average temperatures for January range from -2°C in the south to -8°C in the north. The average July temperature is about 15°C.

Warm season crops such as corn and wheat have not traditionally been grown on a commercial scale. However, recently farmers have been having success

with newer early corn varieties and grain crops such as barley are being grown primarily for cattle feed. Crops such as turnips, potatoes, and cabbage which prefer a moist cool climate do extremely well. In addition, a variety of other cole crops such as broccoli and cauliflower, along with lettuce and Chinese vegetables are being successfully grown on a commercial scale. Conditions are also suitable for hay and pasture crops. Wild fruits such as blueberries and partridgeberries (lingonberries) in Newfoundland, and bakeapples in Labrador are commercially harvested. Recent peatland development for commercial cranberry production are now yielding good crops as well.

Along the Labrador coast, the frost free period extends to almost 100 days in the south, gradually decreasing to 40 days in the north. In the interior, the period is approximately 60 days, with an annual precipitation of 500 mm to 1100 mm. The sporadic occurrences of permafrost increases as one goes north.

Soils in Newfoundland and Labrador have been formed since the recession of glaciers about 10,000 years ago. Most soils of the province are developed from material deposited by glaciers. These deposits can be shallow and stony, and use of many soils for agriculture is restricted by extensive rock outcrops and stoniness.

Areas with deeper glacial deposits, where the moraine is not excessively stony and bouldery, afford the greatest agricultural potential.

Lesser areas of sandy fluvial and glaciofluvial deposits are important in valley systems and on the west coast lowlands. Despite their limited extent, the soils of these deposits are an important agricultural resource.

Studies show that approximately 100,000 hectares (250,000 acres) or 0.9 per cent of the total mineral soils of the Island portion of the province are considered suitable for commercial farming. In addition, there are approximately 1.3 million hectares of peatlands of 30 hectares or greater in size. The soils on many of these peatlands can be quite productive and are being developed for a wide range of crops, including pasture, forage production, a variety of vegetables, turf grass and cranberries. Also, large acreages of mineral soils not considered suitable for cultivation but produce a variety of berry crops, significant quantities of which are picked in the wild or from managed berry lands. There are approximately 7,710 ha (19,000 acres) of zoned berry management units in the province. Recent developments in Christmas tree and wreath production along with propagation of native species significantly increases the potential land base for agricultural products as well. Soil drainage and other upgrading of mineral quality lands is also selectively utilized by some farmers to expand their productive agreages.

According to the Census of Agriculture in 2001, total land on farms was approximately 100,271 acres of which 44,899 acres were in production.

Newfoundland and Labrador is one of the few places in North America where new areas are still being cleared and put into production and where peatlands are currently being drained and developed for agriculture.

LAND OWNERSHIP

Crown Land

A major portion of the Province of Newfoundland and Labrador consists of crown land. Crown (government) owned land is used for a variety of purposes, including agriculture, forestry, residential and commercial activities.

Freehold Land

Since a systematic land survey grid has never been established in Newfoundland and Labrador, traditional land ownership is a patchwork of small land holdings primarily in and around populated areas.

In older developed agricultural areas such as the Codroy Valley, Robinsons, Humber Valley, Musgravetown and St. John's, much of the farmland was obtained under the grant system which existed prior to 1976. These lands would normally be bought and sold through private real estate sales. The Department of Natural Resources administers a Farm Property Tax Exemption Program for actively farmed properties in municipalities.

Agricultural Leases

The Province's Crown Lands Policy for Agriculture provides for the acquisition of crown land for farm use from the Department of Environment and Conservation. Generally, an applicant who can provide a viable farm plan, may receive a 50 year Crown Land Lease for Agriculture. The agricultural lease can only be used for agricultural purposes, and are renewable and transferrable. This became imperative with the loss from production of thousands of acres of limited agriculture land under the previous grant system.

An Agricultural Crown Land Lease includes a legal description of the property along with the development conditions of the lease. For example, 50 per cent of the lease must be cleared and cultivated within ten years of the issuance of the lease. The lease will also include environmental requirements. Leases include a minimum 15 metre buffer along water courses to minimize the likelihood of water pollution.

The annual rental fee is $4 per hectare. Other costs include legal land survey and nominal administrative fees charges by the Department of Environment and Conservation for processing the application and preparation of the title documents.

AGRICULTURAL LAND PLANNING

The Agrifoods Branch of the Department of Natural Resources is responsible for a number of initiatives which aid in the preservation of the province's limited arable land base:

- The **Land Consolidation Program** facilitates the purchase and subsequent leasing of freehold properties to farmers.

- The **Farm Property Tax Exemption Program** exempts property owners from municipal taxation for actively farmed properties.

- There are two legislated Agricultural Development Areas - St. John's area and Wooddale which protect and preserve lands for agricultural use.

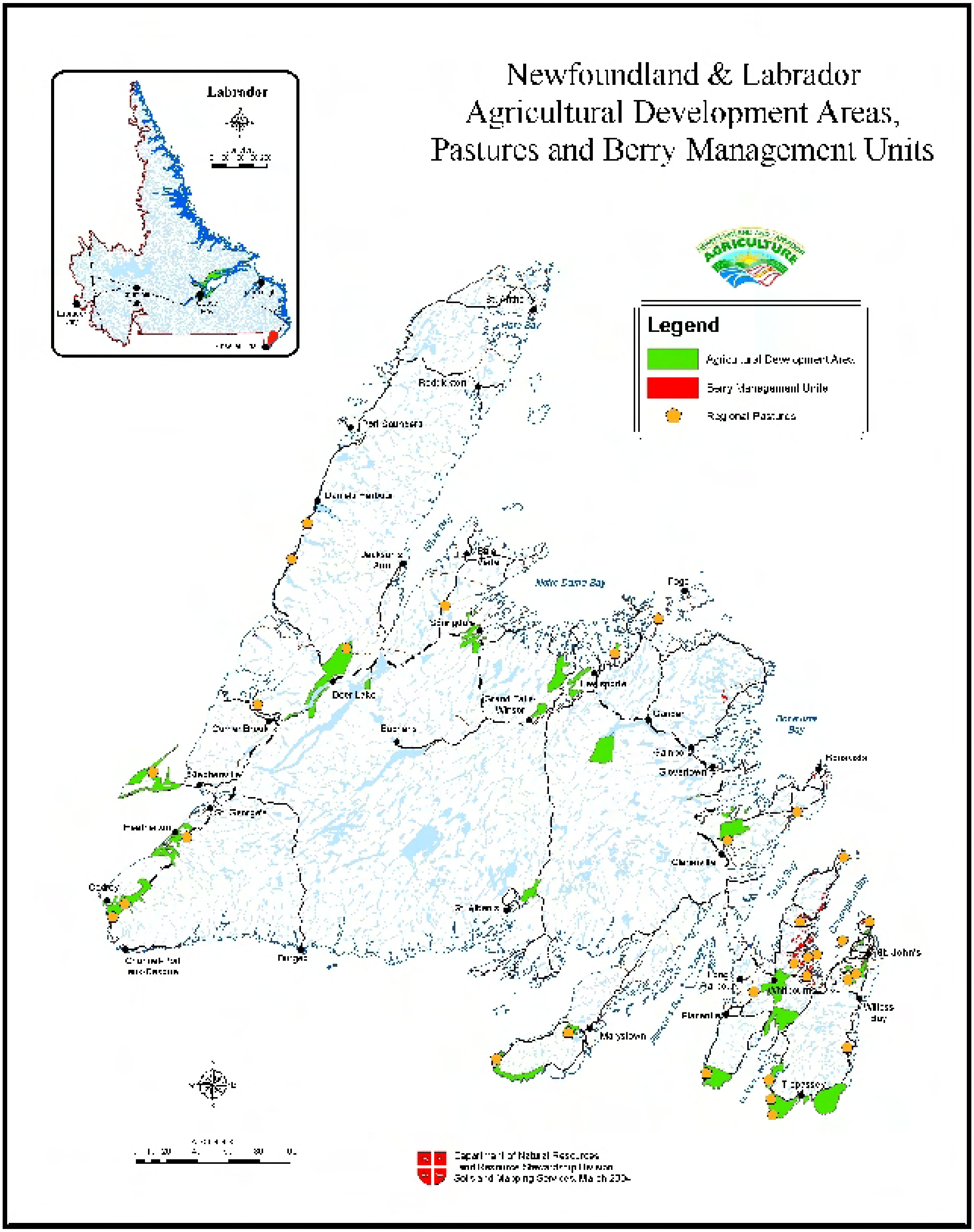
- There are several Agricultural Development Areas designated on the Provincial Land Use Atlas. The Agrifoods Branch routinely reviews development proposals in these areas through the government's referral process.

- The department routinely advertises farmland development projects for land in high demand. These properties are usually cancelled leases, land consolidation purchases, surplus government lands, and suitable areas identified in soil surveys.

Up until the late 1970s, government operated a number of regional pastures throughout the island portion of the province. These pastures are designated on the provincial Land Use Atlas. The objective was to provide a land base for the ruminant animal industry. In the late 1970s, government privatized these facilities and turned them over to local pasture committees and development associations and provided an operating grant. These pastures are located on the Island portion of the Province.

A Blueberry Land Inventory conducted in the 1970s identified extensive acreages of productive lowbush blueberry (*Vaccinium angustifolium Ait*) land; as well as significant productive partridgeberry (*Vaccinium vitis-idaea L.*) sites amounting to approximately 23,000 ha. Many of these sites, particularly in East-Central Newfoundland, have been designated (zoned) on the Provincial Land Use Atlas. Some have been leased to commercial farmers, while others are maintained for public picking.

In southern Labrador, many productive bakeapple (*Rubus chamaemorus L.*) sites have been identified and are extensively utilized for public berry picking. The department maintains access roads in many of these productive berry crop areas.


Newfoundland & Labrador
Agricultural Development Areas,
Pastures and Berry Management Units
Labrador
Legend
Roddickton
Port Saunders
Deer Lake
Corner Brook
Buchans
Gander
Marystown
St. John's
Notre Dame Bay
Codroy
Burgeo
Trepassey

ENVIRONMENTAL REQUIREMENTS

While Newfoundland and Labrador has only a relatively small number of farms spread over a large geographic area, attention to environmental safeguards with respect to farm operations is essential.

Agricultural leases are not permitted within 15 m (50 ft) of water bodies (shoreline reserve), and contain standard environmental conditions such as: 30 m (100 ft) undisturbed buffers along streams and other water courses; pesticides and herbicides must only be applied by a licensed pesticide applicator; manure must be spread according to soil testing, and livestock operations must have at least six months approved manure pits for winter storage. Spreading manure on frozen ground is prohibited. Composting of manure and other organic materials such as fish offal has been encouraged both as a means of reducing waste in the environment, and to improve land fertility.

An Environmental Certificate of Approval contains required specifications for operations of livestock operations greater than five animal units; as well as certain other specialties such as for cranberry farms on peat bogs. Certificates are also required to carry out farming activities in protected water supply areas.

Applications for land clearing in excess of 50 ha or agricultural development in certain designated areas require registration under the Environmental Protection Act, Assented to May, 2002.

The Department of Natural Resources has been working closely with the Newfoundland and Labrador Federation of Agriculture to assist farmers in carrying out Environmental Farm Plans (EFP) for their operations. This project assists farmers to conduct a self environmental audit of their farm. This allows farmers to identify deficiencies in a confidential manner followed by a plan to improve the environmental operation of the farm. EFPs and other environmental initiatives form one of the principal elements of the Canada-Newfoundland and Labrador Agricultural Policy Framework agreement.

Another initiative coordinated by the department is the preparation of Environmental Farm Practice Guidelines for Livestock, Horticultural and Poultry Producers in Newfoundland and Labrador. These guidelines illustrate acceptable farming practices. The Farm Practices Protection Act was proclaimed in May 2003. The purpose of this legislation is to protect farmers from nuisance complaints related to farm odours, noise, dust, etc.

MARKETING AND VALUE-ADDED

By far, the greatest potential and the greatest challenge in developing the province's agrifood industry lies in the expansion of the primary sector into food processing and product development. On average, consumers spend approximately two-thirds of their food dollar beyond the farm gate. Adding value to locally-produced and imported raw products will generate employment and substantially enhance the industry's contribution to the provincial economy. This is particularly true where there is potential for import replacement, export and new niche markets.

Linkages in the food chain, from primary producers, through processors, distributors, industrial users (i.e. restaurants, hotels, institutions), wholesalers and retailers to consumers, need to be developed and strengthened if the overall industry is to survive and compete successfully. Traditionally, some segments of the chain have tended to compete with each other in an attempt to gain the largest share of the consumer dollar. Given the changing nature of competition within the industry on an international scale, the interdependent players in the system must learn to foster partnerships and alliances where efficiencies can be achieved.

The identification and promotion of products which can be produced and marketed competitively is essential for the industry's further development. Changing trading patterns and demographics will result in increased competition and significant changes in demand. The appropriate marketing infrastructure, support and guidance must be provided for the industry to expand and adapt. A number of potential growth areas are outlined in each of the commodity profiles covered in this report.

Opportunities

- There is huge export potential for bottled and flavoured waters.
- There is opportunity to increase market share in the dairy sector through development of industrial milk quota for various value-added products.
- There are numerous other opportunities for value-added production, some of which are outlined in the commodity profiles with follow.

Strategic Actions

- Ensure government activities strengthen the private sector with market support focusing on marketing information, training, promotion and market access;

- Assist in the further development of producer marketing organizations, joint ventures, marketing cooperatives and other entrepreneurial development mechanisms;

- Encourage the development of strategic alliances among stakeholders in the food chain to improve communication, understanding, research and education; increase the emphasis on product quality and packaging standards in order to succeed in specific markets;

- Assist in the identification and promotion of domestic and export niche marketing for both primary and value-added products;

- Assist in the identification of opportunities for viable import displacement, export possibilities, and supplier development; promote and expand adding value to primary production by:

  - developing expertise in new product development and packaging;

  - supporting the development of on-farm processing facilities in order to encourage primary producers to add value to their products;

  - encouraging the establishment of viable food processing and manufacturing businesses, particularly those that would use locally produced product and raw materials;

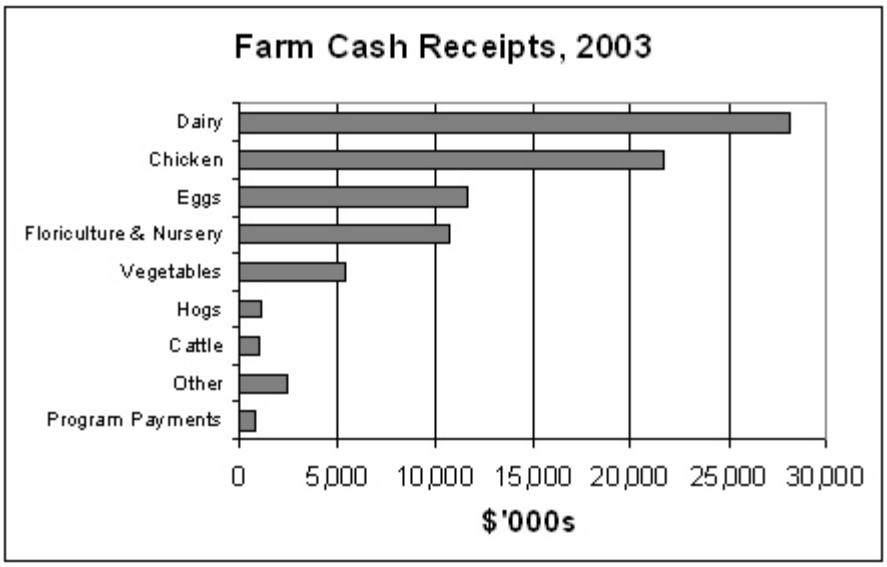
- Increase the emphasis on trade shows, promotional activities and incoming/outgoing trade missions.

- Continue support for various other agricultural awareness initiatives such as agricultural fairs and field days, and agri-tourism opportunities.

COMMODITY PROFILES

Introduction

These profiles provide an outline of the various commodities which are grown in the province. The profiles also include a discussion of opportunities, including the production of commodities which have not historically been grown in the province. Current agriculture production is outlined in the table below.



Innovation will be the key to future growth in the Newfoundland and Labrador agriculture and agrifood industry. Expanding markets for innovative value-added products will drive the future growth of the agrifood industry. Primary agricultural products will benefit through stable and expanding markets for existing and new products.

Newfoundland and Labrador has a dynamic research and development sector and a small but growing commercial sector in Life Sciences.

Much of the biotechnology research and development is coordinated through The Genesis Group Inc., the technology transfer agency of the Memorial University of Newfoundland with research and development in the fields of aquaculture, fisheries, forestry and food technology. Biotechnology research on improvement of native berries such as cranberry, partridgeberry (lingonberry) and bakeapple is under way at the Agriculture and Agri-Food Canada Atlantic Cool Climate Crop Research Centre in St. John's.

Small fruits, such as blueberries and partridgeberries, traditionally have been a significant part of Newfoundland and Labrador agriculture and are mainly marketed as fresh fruit or for preserves. Research and development is taking place to market these berries in the form of high value juices

and in the form of dehydrated berries and powder. A cranberry industry is developing with a number of cranberry farms established or being developed. Kelp and seaweeds are harvested and marketed as powder or in the form of sauces.

A neutraceutical industry is emerging with products derived from seabuckthorn, St. John's wort, ginseng and purple cornflower (*Echinacea purpurea*). Marine nutraceuticals derived from cod liver oil, seal oil and kelp are also manufactured in Newfoundland and Labrador.

Agriflora and Nursery Production

Overview

In 2003, Statistics Canada reported 75 greenhouse operations in Newfoundland. There were 59,177 square metres (637,000 square feet) of greenhouse space in production. Approximately 82 per cent of greenhouse space is used in the production of floriculture products which has grown 150 per cent in the past 10 years. Total sales were $8.4 million. The main crops grown are ornamental bedding plants, potted plants and vegetable transplants.

Opportunities

- Newfoundland and Labrador now produces close to 90 per cent of the bedding plants and 100 per cent of the vegetable plants used in the province. A significant portion of the potted plants consumed in the province is imported. The market for plants is expected to increase as the population ages and concern for the environment and general interest in the gardening as a hobby increases. Local production can fill a part of this market.

- Vegetables grown in greenhouse space during the off season for bedding and potted plants July to September may offer an opportunity for some growers.

- There are further opportunities to increase production of imported nursery stock, trees and shrubs. These products are bulky in nature and transportation is a major cost. Locally produced material may be better climatized.

- There may also be a market for locally propagated native species.

- Local nurseries could also promote the sale of the other local products such as peat, compost, soil mixes, building stone and nursery sod.

The industry could be improved to enable it to take advantage of these opportunities by:

- Introducing new technology to:

  (a) improve the more efficient use of greenhouse space;
  (b) improve materials handling thereby increasing labor efficiency; reduce labor cost;
  (c) to introduce other labor saving devices;
  (d) lower heating costs - conservation and alternate energy sources.

- Improve the skills and knowledge of owner/operators and employees of greenhouse business in areas of production and marketing.

- Explore the possibility of greenhouse and field production of cut flowers and flowers for drying.

Apiculture

As of 2004 there were 11 part-time and full-time bee farmers in the province with approximately 200 hives. Hives are placed in forage fields, berry farms and orchards to increase pollination. Marketed products include honey, creams, wax items and bee venom. This area has seen significant growth in the past few years. Also of note, amendments have been made to the Health Act, to protect the disease free status of Newfoundland and Labrador honey bees.

Opportunities

- Significant growth opportunities exist both in the province and outside for various honeybee products.

Berries/Orchard Crops

- *Blueberries (Vaccinium angustifolium Ait)*

Overview

The industry is characterized by a relatively low number of commercial producers with a high number of casual pickers employed in the wild berry harvest. The major producing areas are Conception Bay North, Bonavista North and Central Newfoundland.

In 2003 there were 12 commercial blueberry producers with approximately 485 hectares (1,200 acres) in production for a total yield of 274,428 kilograms (605,000 lbs). Three times this amount is the estimate from the wild pick. Total production (wild and on-farm) for 1998 was 2.3 million pounds which was within the average of 0.9-1.1 million kilograms/year (2-2.5 million pounds/year). Fluctuations in yield are primarily related to weather as well as the price paid to pickers. The lack of intensive management practices and the high cost of burning and harvesting have resulted in static yields and unrealized profitability. More research should be directed toward adaptation of equipment that could be used for pruning, weed control and harvesting berries on our rougher blueberry terrain.

Opportunities

- A significant increase in production could be achieved through the use of more intensive management practices such as: combined weed and fertility programs; placement of bee hives to improve fruit set; establishment of windbreaks to reduce winter injury and stimulate bee and plant growth activities. Rough topography, which is common in Newfoundland and Labrador, has resulted in high costs for pruning (burning) and harvesting. The consensus in the industry is that the greatest impact on production and cost efficiency rests with the introduction of land leveling in selective, leased "Blueberry Management Units". Although land leveling has a high initial capital cost, it permits the use of mechanical mowers, harvesters and other farm machinery, which significantly reduces production costs. Several producers have improved blueberry lands and approximately 140 ha (350 acres) have been land leveled in recent years.

- The development of the full potential of the fresh market is a priority. At present, producers only receive on average, 40-50 cents/pound from processors who export a frozen product, whereas blueberries sold on the fresh market can return $2.50/pound.

- Promotion of Newfoundland and Labrador blueberries as wild, natural and free of the blueberry fruit worm on the North American and European markets does have significant potential. Emphasis in this area as a promotional tactic could provide enormous opportunities for the whole wild fruit industry. Fresh fruit has been marketed in Ontario in ½ pint containers since 1994.

- Diversification into items such as speciality jams, purees, drinks and baked goods should be aggressively investigated. Significant amounts of the crop are now being utilized by three local commercial berry wine producers and a recently established dairy products company.

- *Cranberries (Vaccinium macrocarpon Ait.)*

Overview

Since 1996, the department has taken the lead role in developing a commercial cranberry industry in Newfoundland and Labrador. This is a major applied research and development project that involves professional and financial commitments in five separate areas. Year 2002 marked the first commercial cranberry harvest in the province - at the Stephenville Crossing site. In 2004 there were 32 acres planted on five sites, of which 15 acres commercially produced 120,000 pounds of fruit.

Research & Development

- Securing and maintaining adequate plant material of seven varieties of cranberries, chosen for their productivity and suitability for production in Newfoundland and Labrador. 20,000 rooted cuttings, comprised of seven different varieties (Pilgrim, Steven's, Ben Lair, Bergman, Willcox, Franklin and WSU 61), were purchased in 1996 and propagation began at the Wooddale Tree Nursery. The first year and a half, work involved bulking up the plant number of each variety to ensure a supply of material for plot work and parent material for propagation for commercial pilot projects. Since then the Wooddale Tree Nursery has been pending plant material for the commercial pilot projects as well as experimental work on plug handling and storage systems. To date, 2.3 million plants have been produced at this facility. This work has ensured genetically pure, clean plant material forever, for this industry in Newfoundland and Labrador.

- Establishment of trial plots to evaluate varieties selected. Experimental size trail plots have been established at four locations in Newfoundland and Labrador: Pynn's Brook, Wooddale, Salmonier, and Goose Bay. At each location, plots of each of the seven varieties used in the program have been established and are providing research data on yields, production methods and local suitability of varieties to different regions of our province.

- A commercial research site has been developed at Deadman's Bay and this site will ensure plant material of each of the seven varieties in the program for future expansion using the traditional vine planting method. Also, this site will provide accurate yields data on a commercial scale, as well as provide an opportunity to test different production methods on a commercial basis before recommending it to the private industry.

- Another important component is sourcing equipment and contracting engineering expertise. The major source of peat bog development equipment in this province is owned by the Department of Natural Resources at Holyrood. It was decided to use this equipment for the initial construction of cranberry fields. To do so modifications were undertaken to existing

equipment and new equipment was purchased. New equipment and modified equipment would then be available to service the cranberry development activities and other new development projects. To properly lay out cranberry sites and to train staff members of this department in the engineering skills required to construct a cranberry bog, engineering services were contracted for the layout of the commercial cranberry pilot projects and the commercial research site at Deadman's Bay.

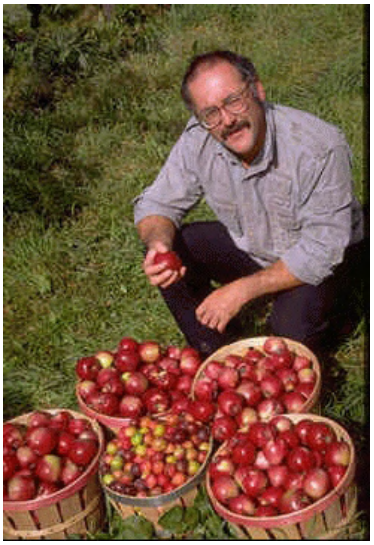
- Establishment of commercial pilot projects across the province. The final phase of this project is the establishment of commercial cranberry operations in different regions of the province. The success of this initiative hinges on the success that the private industry has in this business. It was felt that by partnering with the best private candidates interested in cranberry development, and providing them the resources to do a quality job on commercial size fields, we would demonstrate to the entire business community, the benefits of investing in this industry in Newfoundland and Labrador.

  Four sites have been developed to date; Terra Nova - 10 acres, Frenchman's Cove - 4 acres, Stephenville Crossing - 4 acres, and Stephenville - 5 acres. At these sites, infrastructure was put in place for the acreage developed plus expansion acreage, i.e. roads, irrigation, equipment, and ponds. Each site has the capacity to expand to a minimum of 30 acres.

Opportunities

- We have commercial quantities of the cleanest cranberry plant material in the world.
- Our industry will be established with the newest and most productive varieties in North America.
- We are working to create secondary processing products from cranberries growing in one of the most pristine environments in the world.
- We have developed a knowledge base within our province and support mechanism that will support a commercial industry for years to come.
- We have shown the world that cranberries (***Vaccinium macrocarpon***) as a cultivated crop, can be produced in Newfoundland and Labrador, and that we are open for their investment in our new industry.

- *Orchard Crops*



Overview

- Apples and plums/damsons are grown by a couple of producers on the west coast of the province on a commercial scale. Locally produced plums are fresh marketed in roadside stands and on supermarket shelves. Elsewhere in the province, it is limited to hobby scale production. Some of the commercially produced plums are being utilized by a local wineries. There is a growing interest in locally producing orchard crops.

Opportunities

- Research on adapting other varieties of fruit trees to local growing conditions may offer expanded opportunities for commercial production.

- Introduction of disease resistant varieties may offer increased production opportunities. For example, local damson plum trees are particularly susceptible to black knot.

- *Partridgeberries (Vaccinium vitis-idaea L.)*

Overview

The operation of this industry is similar to that of the blueberry, with respect to the wild harvest. Newfoundland and Labrador is Canada's largest producer of wild partridgeberries. Another milestone recently attained was the exporting of fresh partridgeberries to Ontario by one of this province's fresh fruit operators. They were marketed as "wild mountain cranberries", a term familiar to Ontario residents. Europeans are familiar with this fruit as the lingonberry. In 1994, production soared to 424,713 kg (976,000 lbs) and has leveled off to approximately 49,900 kg (110,000 lbs) in 2003. Increased production in the Scandinavian countries has reduced the export demand for our native partridgeberry.

Opportunities

- Unlike wild blueberries, there is currently no domestication of partridgeberries in this province. However, in Germany and Scandinavia, this crop is grown commercially on farms using named cultivars (varieties). As a result, a joint effort by the Province and Agriculture

and Agri-Food Canada is underway, using these cultivars, in attempts to determine if farming of this crop can be achieved in Newfoundland and Labrador. One of the Swedish cultivars "Sanna" looks very promising in the partridgeberry trials at Pynn's Brook.

- The goal of this project is to provide the province's fruit producers with another offering so that those producers, especially in "pick your own" operations can extend their harvest season with a variety of berries and small fruits.

- In secondary processing, the investigation into the production of juices, concentrates, jams, and baked goods, for example, is being vigorously pursued. A growing percentage of the crop is now being utilized by two local commercial berry wine producers.

- There is renewed interest in partridgeberries because of it's health benefits. Recent research has shown that partridgeberries are even higher in antioxidants than blueberries. Partridgeberries can be significant for improving and maintaining a strong body.

▸ *Seabuckthorn (Hippophae rhamnoides)*

Overview

This plant is an attractive ornamental plant with bright orange fruit and narrow green leaves. It is grown in many European countries and the Canadian prairies. The basic value-added products are juice, jam, preserves, and tea. The essential oil from seeds are the most valuable product and has medicinal value. The high content vitamin C in the fruit is another valuable natural product.

For the past three years, the Department of Natural Resources has been investigating the potential of seabuckthorn as a commercial crop for Newfoundland and Labrador. Work to date has involved sourcing plant material, investigative propagation activities and the establishment of small orchards at Wooddale and Pynn's Brook. Parent material of seventeen varieties have been acquired and are being evaluated for the production and suitability to Newfoundland and Labrador conditions.

Thousands of seabuckthorn plants have been developed from the two year old plant material in stock at the Wooddale Tree Nursery. These plants have been used to establish pilot commercial Seabuckthorn farms in a number of locations in the province. To date three producers pilot projects have been established and two more are planned for 2005. Each pilot project site totals approximately three acres.

Opportunities

- The establishment of pilot seabuckthorn farms throughout the province should pave the way for commercial production. Existing farmers and new entrants may be able to cultivate this crop and provide berries for juice, jam preserves and tea; as well as seed for essential oils.

- *Strawberries (Fragaria spp.)*

Overview

Strawberry production has increased from 55,000 quarts in 1980 to approximately 200,000 quarts in 2003.

There are 43 commercial strawberry producers in the province with most of the production occurring in the Humber Valley, Campbellton, and the Clarenville-Musgravetown area. It is in these areas where most of the progress and expansion in provincial production is occurring.

Due to this sector's rapid growth, many of the support mechanisms necessary for development have not kept pace with production.

There is no organized marketing system. This has led to some market areas being saturated and slow penetration into others. Despite some improvements in marketing, problems still exist, especially at the wholesale level. Retail prices, especially during the harvest season, must be reasonable so that the consumer can purchase large volumes of fruit at reasonable cost. In recent years there has been a major change in the marketing of strawberries. The bulk of the berries are now sold to the fresh market as opposed to the U-Pick method of marketing strawberries.

Opportunities

- The continued development of an organized marketing system is imperative for sustained growth. The export of fresh strawberries into mainland markets, particularly Ontario and Halifax, should be promoted. Due to the lateness of the Newfoundland harvest, fresh product could be marketed well after the strawberry season has ended on the Mainland.

- Direct marketing to consumers should be investigated in order to present a value-priced product to the consumer while, at the same time, ensuring that grower returns are positive.

- Diversification into speciality jams and frozen products, purees and organic products would add income to the industry.

- *Other Berries*

Overview

Newfoundland and Labrador has a host of other berries and small fruits that warrant investigation for possible development.

Raspberries *(Rubus spp.)*: There are approximately 28 producers engaged in the growing of this fruit. Currently, demand outstrips supply and there is about 52 acres in production.

Bakeapples - (*Rubus chamaemorus L.*): Harvested from the wild only, worldwide, there is no known domestication of this fruit. Demand outstrips supply and, as a result, production of profitable specialty products on a consistent basis is difficult due to the high cost of the raw product and fluctuating supply. Frosts during the bloom period of this early flowering plant have had detrimental effects on production in certain years. However, efforts to fully exploit this crop should be studied. A growing percentage of the crop is being utilized by three local commercial berry wine producers and local preserve processors.

Currants and Gooseberries *(Ribes spp.)*: There are at least two known semi-commercial producers growing these fruits in the Humber Valley and one more in the Notre Dame Bay area. Studies are required to determine if expanded production is warranted. Secondary processing of currants probably has more potential than consumption as a fresh product.

Opportunities

- The Newfoundland and Labrador fruit industry should avail of all opportunities to exploit its positive attributes, especially from the health aspect such as in the development of nutraceutical products. The newly launched Canada Food Guide encourages more consumption of fruit. More and more information from the scientific community is coming forward on the medicinal benefits of fruits. The production of fruits, where feasible, should be expanded.

- We should promote the wholesome nature of berries produced in the hardy climate of a province that is located on the Northwest Atlantic.

- The development of "value-added" products, especially juices, berry flavoured teas and concentrates, is being encouraged where feasible. One local manufacturer already produces concentrated partridgeberry and bakeapple, juices and berry-flavoured teas. The "juice market" would have to be considered as a potential growth industry.

- The marketing and promotion of fresh fruits could be enhanced and, where applicable, the terms, "wild" and "natural", should be incorporated with the product.

- The exploitation of other native fruits grown wild should be examined for possible development.

Christmas Trees/Wreaths

Overview

It is estimated that the value of Christmas trees in Canada, including wreaths and branches, is $95 million. In Nova Scotia alone, it is valued at $30 million annually.

Christmas tree farming, while not new to Canada, is a relatively new development in the province. At present, there are approximately 30 tree farms in various stages of development in Newfoundland and Labrador. It is estimated that close to 5,000 trees were produced for sale in the province in 2004.

The development of a Christmas tree farm can take up to 10 years, depending on site characteristics. Preferred sites are cutovers where natural regeneration can be managed to produce quality trees in a shorter period of time.

In addition to tree sales, the production of balsam fir wreaths can also be a lucrative business. Recent figures indicate that New Brunswick, currently the largest producer in Canada, produces 4.1 million wreaths with an estimated value of $20.5 million dollars. A total of 4,150 seasonal full-time jobs are created in the production of wreaths and the gathering of tips, not to mention the jobs created by the economic spinoffs of this industry. Currently there is one commercial scale wreath operation and a few smaller hobby scale wreath operations in this province.

All indications are that the market demand is increasing for the Christmas wreath and wreath related products. In the Maritimes, the expansion of this industry is being limited by the supply of tips and the lack of manpower. Many of these producers are looking to this province to expand their businesses. It appears that at present the largest markets are within the New England states.

The Agrifoods Branch initiated two wreath production pilot projects in 1998 followed by several training sessions.

Opportunities

- The province has an abundance of natural balsam fir forests, some which can be managed for Christmas tree production. The commercial farming of Christmas trees is labour intensive and requires limited capital investment.

- Recent surveys indicate that approximately 17,000 trees, worth an approximate value of $400,000, are imported annually from the Atlantic region for local markets. With proper market development and promotion the local market can be expanded. For example, in other provinces, in addition to roadside sales more family-oriented options are offered, such as "U-Cut" or "Adopt a Tree" where the consumer selects the tree and cuts it right on the farm. Often, sleigh rides and refreshments are offered which helps generate further revenue.

- The market for Christmas trees, of course, is global and given the marine shipping services presently available to Newfoundland and Labrador, it places our growers in a favourable position for both North American and global markets. As well, there are several truck transport companies offering regular service to Canadian and United States destinations.

- The Christmas wreath business has an opportunity to grow in local and international markets. The effective marketing of quality products is a key to the successful expansion of this industry.

Corn Production

Overview

The production of corn, particularly as feed for the dairy industry has increased significantly in recent years. As of 2004 the province had 600 hectares (1,500 acres) of silage corn, and as small but growing acreage in sweet corn. Dry weight corn yields are reported to be double the yield of grass hay.

Opportunities

- Corn is now a significant factor in the expansion of the livestock sector in the province. Continuing research in developing varieties and improving growing practices will permit increased productivity in this crop.

- Growing sweet corn for human consumption will likely expand as new locally adapted varieties achieve commercial success.

Dairy Industry

Overview

As of October, 2001, there were 51 registered milk producers in Newfoundland and Labrador operating under a supply management system, which regulates production. As with other commodities, the number of producers is decreasing but the total production is increasing. By 2003 the total number of producers had fallen to 42. This reduction in farm numbers is a result of increased competitiveness and the desire to meet the changing times with more efficient production.

In 2003 fluid milk production was approximately 35 million litres. This is a very significant increase since the inception in 1983 of a milk marketing board, now called the Dairy Farmers of Newfoundland and Labrador, when production was less than 9 million litres at a value of $7.3 million. The average herd size in Newfoundland is 110 milking cows with average annual per cow production of 6,700 litres. A license to produce milk is required and is administered by the Dairy Farmers of Newfoundland and Labrador.

Direct employment in the dairy industry is estimated at over 1000 person years. As a result, the dairy industry has become a major contributor to the economy, estimated at $105 million annually. Most of the industry's rapid growth is self-generated and, over the past few years, millions of dollars have been reinvested by farmers in such areas as manure storage and handling equipment, land development and replacing and updating farm buildings and equipment.

Opportunities

- Currently, the industry is approximately 80 per cent self-sufficient in forage production and producers are diligently working to reach the 100 per cent mark.

- The feasibility of grain production, alternative forage species, cereal silage and alternative crop management under local conditions are also being examined.

- Various other measures can be implemented to increase productivity such as land expansion, soil drainage, land improvements and nutrient management planning.

- Newfoundlanders and Labradorians consume only about 75 per cent of the national average per capita consumption of fresh milk. There exists a significant opportunity to increase production by influencing demand. The establishment of the School Milk Program, which has generated increases in consumption by school children from just under 100,000 litres to over one million litres annually, is an example of how producers, processors and government can work together to promote the health benefits of drinking fresh milk.

- The secondary processing of such products as cheese, butter, yogurt and fresh cream has largely been an untapped opportunity in Newfoundland and Labrador, with some small industry exceptions. Recently, however a processing plant has been set up in Stephenville producing yogurt on a significant commercial scale.

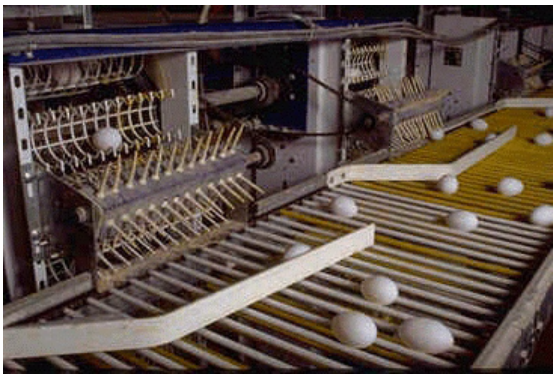
- Industrial milk production increases opportunities for significant farm expansion in the near future. Dairy Farmers of Newfoundland and Labrador in 2001 negotiated an industrial milk quota for 31 million litres that will be allocated over the next 15 years. This will allow for secondary processing with further expanded production.

Unlike production from the dairy industry which has evolved into a significant contributor to the provincial economy, dairy goat production has been primarily limited to subsistence or hobby farming.

For many years, a small number of goats were raised in many areas of Newfoundland and Labrador which provided milk and meat for the families that kept them. Often times, excess milk would be given or sold to neighbours and relatives or fed to other animals. Goats are still being raised for the same purposes in many areas today and some families have developed skills in the making of cheese and yogurt. Goat's milk is also used to replace cows milk for individuals who cannot digest cow's milk because of a lactose intolerance. A cooperative has recently been formed to increase production of dairy goat products to a commercial scale.

Egg Layers

Overview



In 2003, there were 13 egg producers operating under the authority of Egg Producers of Newfoundland and Labrador, who produced approximately 8.2 million dozen eggs with a farmgate value of about $12.3 million. Since 1985, provincial quota has decreased by approximately 25 per cent in an attempt to reduce surplus production and the resulting high removal costs for transportation to mainland Canada breaker plants for the "industrial" market (e.g. liquid and powdered eggs). In the past 18 months, the industrial demand has strengthened dramatically and all the provinces (including Newfoundland and Labrador) have increased production to meet processing demand. At the same time, average flock sizes have increased as the remaining producers have moved to improve efficiencies through economies of scale.

Opportunities

The cost of production must be reduced, especially with respect to the current dependence on imported feed grains. This may be achieved in a number of ways:

- additional efficiencies are required, for example by reducing the amount of below-grade egg production to that experienced by the Mainland producers;
- remaining producers are considering growing their own replacement pullets in an effort to maximize efficiency (currently 60 per cent of our replacements are locally grown).
- several egg producers support Public Grain Storage as an aid to either commercial feed production, or the development of on-farm feed facilities.

Forages

Overview

There has always been a traditional harvest of livestock feed since the introduction of domesticated animals into Newfoundland and Labrador. The harvest consisted of harvesting wild forage or meadow grass. There was a gradual introduction of new forage species such as clovers, timothy, red top and fescues. With the increase of our livestock numbers especially in the dairy sector, large quantities of forage had to be imported. However, we are displacing imported forages. In 1996, 49,000 tons of forage were produced on 5,665 hectares(14,000 acres) and in 1985, 15,000 tons were produced on 3,360 hectares (8,300 acres). The western and central parts of the province are nearly self-sufficient in forage production and in the past few years have sold forage into eastern Newfoundland.

Opportunities

- Forage quality can be improved by harvesting the crop at ideal stage of maturity to ensure maximum feed value. This will reduce the amount of imported feed grains as a feed supplement.
- Forage quality and yield can be improved through better soil fertility.
- We can improve yields and quality through increased production of legumes such as alfalfa and more persistent clovers.
- Better pasture management can increase milk yield and livestock rate of weight gain.
- Forage transportation cost can be reduced by better designed transport carriers.

- There should be more incentive to lease or rent non-productive forage land from non-farming interests.

- The economics of switching to larger square bales to reduce plastic storage cost and improve transportation cost should be investigated.

Furbearers

Overview

Fur farming is cyclical in nature and its history in this province is no different. The first attempt at an organized fur ranch was documented in the 1930s, although fur ranching is mentioned as early as 1915. Since that time, interest in fur farming has had its ups and downs. In the 1970s when pelt prices began to rise, interest in fur farming once again rose. In 1990, the bottom dropped out of the pelt industry for several reasons from evolving fashion trends, animal rights activity, warm European winters to an oversupply of pelts on the world market. The increase of fur farming during the 1980s has been the result of small family-run operations usually in combination with trapping, fishing or other occupations. This is in deference to starting off with a large commercially funded operation as in the 1950s. Since the down side of the cycle began in the late 1980s, some farmers have pelted out much of their breeding stock and reduced their operations to wait out the period of low prices. This period of low prices continued until 1994 when the price of fox and mink pelts rose considerably. Currently there is tremendous growth, particularly with respect to large commercial scale mink enterprises. As of 2004 there were approximately 20 active fur producers in the province. The fox industry has 700 female silver foxes and 300 female blue foxes. The mink industry has grown from approximately 1,000 breeders in 2001 to 6,000 in 2004 with the potential to reach 40,000 breeder females by 2008. This translates into potential pelt sales of 8 million dollars.

Opportunities

- There is a considerable amount of raw waste materials available for feed for furbearers which reduces the dependency on mainland feedstuffs.

- The period of low pelt prices has allowed for research and trials in such areas as developing alternative feed sources, selective breeding and cultivating husbandry skills which improved the efficiency of the operations.

- The potential exists for further development of a secondary processing industry to increase the value of the products produced.

- Weather conditions in Newfoundland and Labrador are conducive to the raising of furbearers.

- There is potential for further diversification to new species.

- Fur farms are flexible operations which can be combined with other rural activities or careers, thereby enhancing rural Newfoundland and Labrador keeping communities alive and viable.

Grain Production

Overview

Over 50,000 tonnes of grain are imported annually at a cost of over $10 million. Feed (milled grain) is the most expensive input cost to a livestock farming operation. Grain represents 30-45 per cent of the cost of producing milk, 60-70 per cent of the cost of raising a market hog, 50-60 per cent of the cost of producing a dozen eggs or raising a broiler chicken. The Department of Natural Resources under the Alternative Feeds Program has investigated grain production, and concluded that the potential for a viable grain industry in the province is high.

Results

- On-farm demonstration plots of barley and winter wheat have produced increased annual grain yield since 1993. Average Chapais Barley and Borden Winter Wheat grain yields were 4.4 tonne/ha (1.98 tonne/ac) and 5.6 tonne/ha (2.5 tonne/ac) in 1996.

- Locally produced feed grain, such as barley, has an approximate value of $250/tonne and supplemental straw has a value of approximately $150/tonne. Cost of production is calculated at approximately $150/tonne.

Potential

The grain project has involved a variety of farming operations including beef, sheep and dairy which utilize the grain as feed and a strawberry producer who utilizes the straw as a mulching material. Large dairy farmers self-sufficient in forage respond well to grain production as an opportunity to combat the high costs of feed grain. Broiler producers can feed up to 35 per cent locally produced whole wheat in a customized feed ration to reduce costs, saving approximately $20/tonne.

Future

More production management research and feeding trials are necessary to provide the agriculture industry the required information to adopt this technology. The biggest constraint for grain production is land base. Considerable acreages are required to be developed if the imported grain is to be displaced. Development of land for industrial milk production quota will add greatly to this land requirement. Land development is expensive at an estimated cost of $2,000 an acre.

Horses

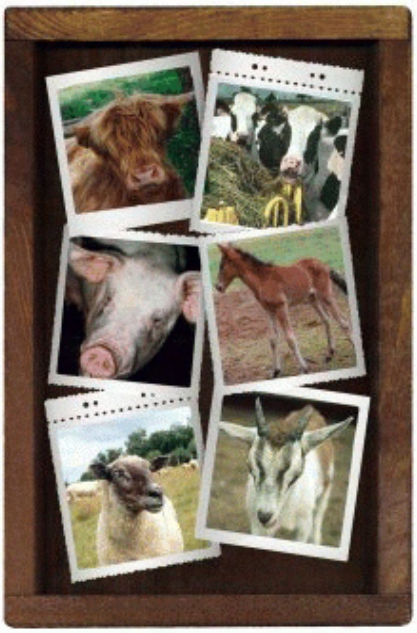
Historically horses were very abundant in Newfoundland and Labrador, primarily for use as draught animals on farms, in forestry activities and for transportation. Over time, a hardy breed, now recognized as the Newfoundland Pony, evolved. As a draught animal, the horse has largely been supplanted by mechanization. Stability of numbers today is largely due to recreational and commercial riding activities. Efforts have recently been focused on preserving the Newfoundland Pony under the protection of the Heritage Animals Act, and through the efforts of the Newfoundland Pony Society.

Opportunities

- Expanded recreational uses may exist such as for sleigh rides on Christmas tree U-pick farms, agricultural fairs, and at various other recreational events.

- Horses, including the Newfoundland Pony, are increasing in value as pets.

Meat and Meat Products



Locally produced beef, pork and lamb are primarily marketed fresh or frozen to retailers or consumers. There are some further processed products, such as salt beef/pork, sausages, bacon and deli-meats, produced locally, but most of the raw product is brought in from outside the province.

The broiler chicken industry is producing a wide variety of value-added products and has gained markets from here to Ontario. The egg and turkey industries are for the most part, primary based industries. The key to the future of all these industries is lower input costs, in particular, feed.

Opportunities

- Small scale production of cured, smoke and deli meats.
- Production of fresh and processed caribou and other wild game for export markets. There is a tremendous market potential in Europe and the United States for these products.
- Development and production of unique meat-based dishes on traditional Newfoundland and Labrador recipes for markets in the province and in niche markets in Ontario and Alberta.
- Processed turkey and lamb products are not readily available in local supermarkets and can be produced locally to add more value and extend markets for these traditionally seasonal products.
- Pet foods and treats can be produced from meat by-products and spent animals.

▸ *Alternative Species*

Overview

Alternative species farming opportunities refers to meat rabbits, fallow deer, elk, ratites (ostrich and emu), buffalo and other non-traditional species.

With the exception of meat rabbits, the other species should be able to adapt to our climate given reasonable farming practices. These animals are raised as alternatives to traditional livestock in many Canadian provinces. A few individuals throughout the province have recently been breeding ostrich, emu and alpaca.

Markets exist in some areas for breeding stock and finished products for all these species. Current government policy limits the types of alternative livestock that may enter this province. The types of greatest concern are the various kinds of deer, such as fallow deer and elk.

Conclusion

The alternative species industry is growing in many Canadian provinces. There is little doubt that these species could be raised in this province. However, disease concerns, effect on wildlife populations (with several alternative species), economics and markets have to be closely examined. There may be potential for some species and others may be quickly ruled out. However, the alternatives to traditional livestock operations are growing worldwide and Newfoundland and Labrador may have a niche with one or more alternatives.

- ***Beef Cattle***

Overview

The beef cattle population has decreased somewhat in recent years. The decline in the cattle sector may be partly attributable to the negative impact of the discovery of BSE in Alberta. Overall, there are 1,200 head of all classes of beef cattle, of which approximately 800 head are for breeding purposes. Only a couple of farms operate on a full-time basis and these farms maintain herd size of about 65-100 head of cattle. Part-time or smaller operations keep herds with 5-25 head. The beef population also include beef-dairy cross offspring.

Traditionally, beef production has been an income supplement to other main economic activities such as fishing, wood cutting, off-farm employment or other major agricultural endeavors. Recently, however, there has been a revival of interest in improving breeding stock, such as with the Salers and Blonde d'Aquitaine lines which were introduced to the province in 1991-92. Serious producers are investing significant time and effort in improving productivity and industry organization. The absence of diseases found in other countries is currently driving up demand for locally produced beef products.

About 60 per cent of producers are located in the Western Region of the province. This can be attributed to the greater availably of extensive land base in that area. Marketing is one of the major concerns of beef producers. It is difficult to compete with grain fed beef from western Canada and there is lack of uniform pricing on local product. The current marketing system is primarily the freezer or door-to-door trade, often on a cash sale basis.

Opportunities

- There is a need for expanded land development as well as improvement in forage productivity and pasture land. Potential for improving feeding productivity lies with such measures as: forage research on high protein crops; early spring pasture; adequate winter feed supply; frost seeding and rough pasture upgrading; development of alternative forage

species; improved drainage and crop persistence; and, appropriate crop management practices for local conditions.

Trials on utilizing other sources of feed such as locally produced grain offer opportunities to become more efficient in feed utilization. There is also a great potential to look into a totally grass-fed beef operation where consumers may be more attracted to a lower fat and chemical-free beef product.

- A sound breeding program should be in place among beef producers. Semen from top quality beef bulls is available from A.I. companies and technical services also provided. Improvement in genetic quality such as high growth rate can be achieved through the use of artificial insemination.

- The Cattlemans Association of Newfoundland and Labrador is taking a leading role in dealing with important issues such as marketing, which could include aggressive promotion and the establishment of a uniform pricing structure for local beef.

▸ *Broiler Chicken*

Overview

Primary production has increased from 3.7 million kgs liveweight in 1980 to 17 million kg in 2001. Correspondingly, farm cash receipts have increased from $5.6 million in 1980 to an estimated $22 million in 2003. It is estimated that there are 325 employed in the broiler industry.

Since 2000, Country Ribbon Inc.(CRI), a single integrated company, holds the production license for all chicken quota in the province. The company grows 2/3 of its requirements and contracts out the remainder with individual farms in Eastern Newfoundland. There are seven operations that contract grow for CRI. Broiler production accounts for almost 30 per cent of total farm cash receipts and just under 50 per cent of the feed grains sold in the province. This production is approximately 70-75 per cent of the total provincial market requirement.

Opportunities

- Diversification of the product line at the Country Ribbon Inc., with such products as flavored wings, breaded chicken products, chicken salami and other speciality items, has expanded potential markets, including areas outside the province.

▸ *Goats (Meat)*

Overview

For many years, a small number of goats were raised in many areas of the province which provided milk and meat for the families that kept them. Commercial production will depend on development of market opportunities.

▸ *Sheep*

Overview

When the province joined Canada in 1949, it is believed provincial sheep numbers totaled 100,000 head. Almost every family in rural Newfoundland and Labrador kept sheep for wool and meat for home consumption as well as for sale to urban areas. From the 1950s to the 1970s a steady decline led to a low of somewhere around 4,000 female breeders (ewes), where it more or less remains stable. The changing economy after both World War II and Confederation contributed greatly to the initial decline. This was followed by a further decline brought on by the incorporation of towns, changes to the Livestock Act requiring the fencing of animals as well as severe predation by roaming dogs, and more recently concern about coyote predation.

New changes to today's economy brought on by the collapse in the groundfish fishery and changes to government support programs is again having an effect on the sheep industry. This time however, the effect is positive as many individuals are looking to sheep raising to supplement their income.

There are approximately 150 registered producers scattered throughout the province keeping sheep on a mainly part-time basis. They market for the most part directly to the consumer, primarily in September and October as the lambs mature.

The Meat Inspection Program is not widely used by the sheep industry although some producers have taken advantage of the program. Most producers indicate no problems in marketing their supply of lambs, although in some areas prices can be depressed by an oversupply. A strategy report by the Sheep Producers Association of Newfoundland and Labrador indicates that local production of lamb accounts for approximately 28 per cent of consumption, which could account for the relative ease in marketing. A major constraint in increasing production is the need for land development for pasture and winter feed. There is also significant new competition with fresh, vacuum-packed product from New Zealand and, lately, from Ontario.

Opportunities

- The potential for expansion of the sheep industry is much greater than for any other livestock now farmed in the province. The industry is less dependent on imported feed grains than other livestock operations. The abundance of marginal land unsuitable for other farm types can often be effectively utilized by sheep. With relatively little input, much of this land could be improved to greatly increase the carrying capacity per acre. Start-up costs are also low when compared to other livestock operations. There is no need for expensive housing, heat or ventilation. Non-traditional land development and improvement practices need to be investigated (e.g., frost seeding of pastures, no-till development of rough pastures), in order to realize additional productivity at low cost.

- Production would have to quadruple in order to meet present consumer demand with local product. In addition, per capita consumption of lamb in this province is still relatively low. Demand could be improved with promotion and advertising. It is conceivable that a productive capacity of 25,000-30,000 breeding ewes could be viable with properly directed expansion. This number could be raised on the Cape Shore alone utilizing what is now mostly wasteland.

- There is also a large market for fresh lamb just on our doorstep in St. Pierre. There could be potential market in the Maritimes and the Eastern Seaboard of the U.S. for a superior quality Newfoundland and Labrador lamb product.

- There may be some additional potential for a breeding stock industry, using the genetic base of the so-called “Newfoundland Local”, a hardy stock have been examined for its genetic “blueprint”.

- There is also potential for development of by-products such as wool and hides to increase the value of the industry. The feasibility of a woolen mill and/or tannery needs to be investigated. Secondary processing into garments and crafts can hold great potential. Meat by-products (offal) could be utilized as food by the fur industry, or processed for meat meal or pet food.

- Establishing a federally registered red meat abattoir to permit greater market access for local meats.

▸ *Swine*

Overview

In the early 1960s, government assisted the development of a commercial swine industry. The Central Swine Breeding Station began production of hogs to supply farmers with SPF (specific pathogen free) stock. Due to this disease free status, important regulations are still in effect. Hog production was at first concentrated on the Avalon Peninsula with farms located within a 50-mile radius of the abattoir in St. John's. Later, another abattoir was constructed at Corner Brook. This gave West Coast producers an opportunity to establish commercial swine production units as well.

With the closure of the hog lines at both abattoirs in recent years and the elimination of direct provincial financial support, most commercial units ceased production. However, a number of established farms remained in business and some new enterprises were established. In 2002 there were 19 farms in the province with production of 7,650 market hogs, and 350 breeding stock.

Opportunities

- Local pork has the advantage of arriving at retail outlets more quickly than imported product. This should result in greater shelf life for local product.
- Local farmers can avail of the Provincial Inspection Program - which allows local pork into most retail outlets.
- There is a demand for further processed local pork products. This would include sausages, hams, bacon, etc.
- There exists a significant demand for weaner pigs in rural Newfoundland at certain times of the year (i.e., spring, summer).
- Buildings and equipment from farms that have left the industry are available.
- There are a number of low cost alternative feeds available to producers. These include bakery waste, cafeteria waste, fish products, vegetables and possibly milk products.
- Regulations restricting importation of stock limits many disease problems prevalent in mainland herds.
- Establishing a federally registered red meat abattoir to permit greater marked access for local meats.

- ***Turkeys***

Overview

Newfoundland and Labrador does not participate in the national supply management system for turkey production under the relevant Federal/Provincial Agreement due mostly to very limited production. The advantage of this is that individuals are able to enter the industry without first obtaining quota and several have done so in the past two years.

In 1994, the introduction of Provincial Meat Inspection prompted four growers to build their own abattoirs in an effort to provide an inspected turkey product to consumers by direct and retail sales.

The industry is basically filling a niche market at Thanksgiving and Christmas when premium prices of $1.75 -$2.75/lb for fresh birds can be obtained. Bird numbers are in the 40,000 - 50,000 range with a total production of 306,180 - 317,500 kg (675,000 - 700,000 lbs) of meat annually. However, this size of market only supports part-time or co-production with other commodities.

Nevertheless, consumer reaction to the high quality of local turkey has been very favorable, and growers are gradually increasing their market share.

Opportunities

- Developing holiday, or niche markets remains the logical target for the industry. It could be expected that production will continue to be complementary to other ventures.

- Opportunity exists for market expansion with improved packaging, advertising and presentation. Further processing also may hold significant potential owing to the superior quality of the fresh local birds.

- Existing production caters to the Avalon Peninsula; with opportunities still existing in other regions.

Nutraceuticals/Functional Foods

A nutraceutical or functional food is any non-toxic food or food ingredient scientifically proven to provide medical or health benefits, including the prevention and treatment of disease. These products may range from isolated nutrients and dietary supplements to genetically engineered "designer" foods, herbal products and processed products, such as cereals, soups and beverages.

Consumers and their demand for quality of life are bringing substantial worldwide growth to the nutraceutical industry. Driving demand for these products in the U.S., are rapid advances in science and technology, rising health care costs, an aging population, and changing government regulations on food marketing and labelling. The most sought after markets are Japan, the Pacific Rim, Asia,

the United States, Europe, Germany and Scandinavia. These tend to be highly developed markets, in which consumers are very aware of nutraceuticals. The ability to make health claims, through either legislation or cultural traditions and folklore, are factors that make them lucrative. At this time, international markets appear to hold more opportunities than domestic.

Opportunities

- The health components of the types of fruits and vegetables currently grown in the province need to be explored to determine their potential as nutraceutical ingredients for other products.

- Ginseng is a major nutraceutical crop and is very valuable. There is tremendous market potential in Asian markets and the North America market is experiencing continued growth.

- New crops, such as cranberries and seabuckthorn are being explored and developed. Several cranberry sites are producing berries, none at a commercial level. Some trials are currently underway for seabuckthron. These crops have tremendous market potential worldwide.

- The best opportunities in this area would appear to be in the supply of raw ingredients to larger companies due to the high cost of developing a nutraceutical product.

- Many of our native plants have potential uses for nutraceuticals, cosmetics/perfumes, natural insecticides and food flavorings.

Turfgrass

Overview

As of 2001 there were 24 producers of turfgrass in the province, who had 150 ha (370 acres) in production. This number has been rising steadily since then. Of the 150 ha (370 acres), 90 per cent of this acreage is grown on peat soil, the balance is on mineral soils. The estimated value is $2.8 million. The predominant species is Kentucky Blue Grass. This sector has grown substantially in the past decade around urban centers owing to increased demand for sod for residential, commercial, institutional and recreational uses such as golf courses.

Opportunities

- To encourage the use of cultivated turfgrass in residential, commercial and recreational construction.
- Improve the knowledge and skill level of the industry in production and installation.
- To improve mechanization and reduce production costs.

Vegetables

Overview

Vegetable production was probably the first type of agriculture enterprise carried on in Newfoundland and Labrador. Having a good supply of vegetables was necessary for survival in the early days of settlement.

The main emphasis of vegetable production today still concentrates on the types of vegetable that are most suited to our soil and climate conditions. Potatoes, turnip, cabbage, carrot and beets are the most important vegetable crops produced. However, our diets are changing; people are becoming more health conscious, and the value of a more varied mix of vegetables in our diet is more appreciated.

The province's vegetable growers are growing a more varied mix of crops to capture this market. The acreage of broccoli, cauliflower and lettuce has increased. Crops like chinese vegetables, radish, leeks, celery, sweet corn and pumpkins are now being grown and marketed on a limited scale. A number of growers are starting to produce vegetable crops organically to take advantage of this new market.

Vegetable growers have adopted the latest technology to produce these crops competitively. Growing crops is a complex business, involving planning, financing, accounting, labor management, mechanization, pest control, harvesting, cooling, storage, grading, packaging and marketing. Our farmers use the latest equipment and facilities, i.e.: precision seeders, mechanical transplanters, greenhouses, row covers, irrigation for watering and frost control, refrigerated, jacketed and ice bank cooled storages just to list some of the technologies.

During 2003, farmers in the province grew 1,610 acres of vegetables valued at $5,386,000.

Acreage and value of selected vegetables:

Crop	Acres	Value ($)
Potatoes	700	1,940,000
Turnip (Rutabagas)	360	1,500,000
Cabbage	200	625,000
Carrots	170	625,000
Beet	60	175,000
Broccoli	40	180,000
Lettuce	15	100,000
Cauliflower	5	20,000

Opportunities

- Extend the market season of the traditional root crops and cabbage by the construction of new and improving existing storage capacity.
- Put more emphasis on the production and marketing of non traditional and speciality crops.
- Use technologies such as floating row covers and unheated greenhouses to capture the early market and grow warmer and longer season crops.
- To continue efforts to expand and create new markets; farmers markets, sales to fundraising organization, u-picks, etc.
- To emphasize to consumers the value of fresh locally grown vegetables and the economic importance of buying Newfoundland grown to support the economy.
- To add value by further processing. Vegetable products have been and continue to be made in Newfoundland and Labrador, i.e., peeled potatoes, canned and frozen greens, soups, rhubarb wine, pre-cut vegetables, coleslaw and pickles. There is an opportunity to expand production of some of these products and produce new products such as ready made salads, shredded lettuce and pickle beets for example.

- Explore the production of culinary and medicinal herbs (nutraceuticals). People are willing to try different foods and there is interest in alternative medicine. The preparing, packaging and marketing of these products offer opportunities for adding value. Major markets could exist outside of Newfoundland and Labrador, and Canada for these products.

GOVERNMENT SERVICES

Government of Newfoundland and Labrador

While a number of departments and agencies provide regulatory, financial and other services to the agrifoods sector; it is the Agrifoods Branch of the Department of Natural Resources which has the lead role in promoting the industry in the province.

The office locations and names of staff who carry out the programs and services of the Agrifoods Branch are provided in the Appendix.

Department of Natural Resources

The Agrifoods Branch of the Department of Natural Resources has responsibility for the stewardship of province's agricultural resources and to undertake developmental initiatives in the production, processing and marketing sectors of the agri-food industry, to provide advice for the management and development of the agriculture sector and to develop production and marketing plans for the industry. The Agrifoods Branch has offices in 9 locations in the province. The Branch includes divisions in Production and Market Development, Land Resource Stewardship, Agricultural Business Development, Animal Health and Policy and Planning.

The following descriptions of programs and services are intended as on overview, and interested individuals should contact the department directly to obtain up-to-date and more detailed information.

Lists of departments, industry information, contacts, and links to other sites are available on our website**: www.gov.nl.ca/agric.**

Production and Market Development Division

This division is responsible for the development of production, marketing support, provision of technical advisory services to farmers, program development and policy review to maximize the use of resources for the production and marketing of livestock, poultry, fruits, vegetables and related products. This division is comprised of four sections: Livestock and Poultry Services, Market

Development, Fruit and Vegetable Production, and the Provincial Seed Potato Farm. Technical specialists exist in such areas as poultry, sheep, beef, dairy, swine, fur, livestock nutrition, fruits, vegetables, marketing and economics.

In **Livestock and Poultry Services**, technical advice and training is provided to farmers, farmer groups, Agricultural Marketing Boards, Livestock Associations and other Departmental staff. Areas of interest include production concepts, new technology and the management of farming systems. Representation is made on Departmental, Provincial and National Committees and various Federal/Provincial committees. Some specific programs include:

1) A national milk recording program, Vision 2000, is offered to dairy farmers across the province. The program assists farmers in livestock management.

2) Research and development is carried out through (for example) the Alternative Feeds Program in such areas as seal meal use for livestock species, grain production (variety testing, fertility, harvesting, storing, feeding systems) to help reduce dependency on expensive imported grains, silage production (fish wastes, seal meat, spent hens and other waste products), and preservation of the Newfoundland Sheep.

In **Market Development**, marketing services and promotional support is provided through increased industry cooperation. In recent years, there has been increased emphasis placed on secondary processing and value-added products through initiatives in the areas of market research and information, product promotion, trade show participation and market awareness seminars. Local agriculture is promoted at annual fairs and exhibitions and through the production and distribution of promotional support materials.

In **Fruit and Vegetable Production Services**, technical advice and training is provided to commercial full-time or part-time farmers and home gardeners to increase the quantity and quality of locally produced crops. Major fruits at the commercial cultivated level include small fruits (strawberry, raspberry, lowbush blueberry) and tree fruits (apple, cherry and plum). Major emphasis is also placed on the utilization of wild fruits such as lowbush blueberry, partridgeberry and bakeapple. In cooperation with Agriculture and Agri-Food Canada, variety trial projects for strawberry, raspberry and partridgeberry take place at Pynn's Brook on the west coast. Expansion of trials to include half-high blueberry, highbush blueberry, currant and gooseberry, and additional partridgeberry types is being considered. The section also assists on matters relating to beekeeping.

The **Seed Potato Farm** was established in 1972 on a area of land near Glenwood. It was not the intention of the department to cultivate a large area but approximately 1000 acres were obtained to provide an adequate quarantine area for the production of seed potatoes. The objective of the farm is to multiply potato wart (canker) resistant varieties developed and selected by Agriculture and Agri-Food Canada's Research Branch for Newfoundland and Labrador's growing conditions. These seed potatoes are sold to certified seed potato growers who further multiply the stock to be sold to table potato producers. Seed potato growers are certified by the Canadian Food Inspection Agency, CFIA.

Land Resource Stewardship Division

This division is responsible for all aspects of agricultural soil and land management. It develops and delivers programs and policies which will encourage sound environmental and agronomic management of the land on which the agriculture industry is based. Specific sections include Land Use Planning, Soil Survey, GIS/Mapping, Agricultural Land Drainage, Access Roads/Electrical Services, Soil, Plant and Feed Laboratory and Environmental Programs.

In the **Land Use Program**, recognition is made of the limited amount of arable land in the province which must be carefully developed and protected to ensure its availability for agricultural use over the long term. This goal is pursued through the identification and promotion of expansion areas for new and existing farms; the identification of agricultural development areas and other areas throughout the province in consultation with other land resource demands such as forestry, residential, water supplies, quarrying and mining (and where appropriate gazetting as agricultural zones pursuant to the Lands Act); development of policies and programs to assist compliance with more stringent environmental standards; property tax exemption programs to meet the special needs of the farm community; and land consolidation for the purchase of land in the St. John's Agriculture Zone, as a means of protecting the agricultural land base and providing land to farmers. This section processes various referrals on behalf of the Agrifoods Branch, i.e., Crown land applications, Environmental Assessments, quarry applications, Interdepartmental Land Use Committee (ILUC) and various property related items.

In the **Soil Survey Program**, the farming community, the general public and the branch are provided with information on the province's soil resources. The principal activity is the characterization of soils, soil properties and soil suitability for agriculture and the spatial representation of the information by mapping. The information is instrumental in outlining potential agricultural areas, the development, planning and management of Agricultural Development Areas, and the expansion of the productive land base of individual farms. The program also provides technical advice to the farming community and agricultural staff on the adaptability of soils for various crops, their behaviors under use or treatment for plant production or for other purposes, such as waste disposal, their productivity under different management systems, and their susceptibility to soil degradation processes.

The **GIS/Mapping Program** assists farmers in farm management and planning. The principal activity of the program is the preparation of a physical inventory of farm resources including land use, soils and cropping practices; and to interpret the information obtained from the inventory for both short and long term soil management, farmland expansion and crop production plans. Incorporation of GPS technology has become integral to this program. This program falls within the general framework of the Soils and GIS/Mapping Unit managed by the Land Resource Stewardship Division for the Agrifoods Branch.

The **Agricultural Land Drainage Program** services the farming community by planning and providing environmentally responsible and economically feasible drainage solutions for the improvement of mineral and organic soils for agricultural use.

Through its **Holyrood Depot**, the division provides maintenance support for ditching equipment servicing bogland. The depot continues to provide specialized support to various demonstration projects, such as vegetable and sod production on bogland and regional pastures.

The **Agriculture Access Roads/Electrical Services Program** provides for the construction and maintenance of public roads and electrical services to encourage the expansion of the agriculture industry. Soil surveys, land use planning and farmers often identify areas of suitable land which are not accessible. This program, which covers over 330 kilometres of roads, ensures that roads are maintained at an appropriate level which is normally beyond the capability of farmers. Similarly, the electrical program assists new or expanding farmers to develop their operations which are often located at considerable distance from services.

The **Soil, Plant and Feed Laboratory** provides analytical and advisory services to assist the farm community to increase agricultural productivity and fertilizer efficiency. This is done through an analysis of the farmers' soil, plant and feed samples. In addition, the laboratory analyzes and advises on manure feeds which may replace traditional imported feeds, animal tissues and limestone samples. These services are also provided to the general public and other government departments. The laboratory participates with the Eastern Canada Soil and Water Conservation Centre, N.B., which helps farmers to resolve problems related to soil and water resources. Implementation of the Province's **Agricultural Limestone (Aglime) Program** is also carried out through the laboratory. The province's soils are very acidic and require large amounts of limestone to sustain reasonable yields.

Environmental Programs - The division develops and implements policies and programs to provide for the implementation of environmentally sound farm management practices. The division consults with other departments and agencies to resolve issues ranging from farm specific problems to the preparation of local environmental (agricultural) land use plans. This division has helped design and implement the environmental farm planning program (self audits) and the preparation of environmental guidelines. Best Management Practices and nutrient management planning are additional areas which are being addressed for the agricultural industry. The division works with the federal government and the Newfoundland and Labrador Federation of Agriculture in the implementation of programs which fund environmental initiatives.

A major federal-provincial initiative in this area is the 5-year Agricultural Policy Framework (APF) implementation agreement signed in May, 2003, which has Environment as one of its five main elements.

Agricultural Business Development Division

This division has the responsibility to provide professional advisory services and financial programs that diversify and strengthen the agrifoods sector, thereby, increasing the profitability of agribusinesses and enhancing the competitive capability of the agrifoods industry in Newfoundland and Labrador. This is accomplished through effective farm business management counseling and

advisory services, extension advisory services and programs, and the development, implementation and evaluation of financial programs.

The division has responsibility for the following programs and services:

Extension Services: Agriculture representatives (agrifoods development officers) are located throughout eight agriculture offices across Newfoundland and Labrador and are the first line of contact with new and established agribusinesses. These positions provide delivery, interpretation, and recommendation on various agricultural initiatives and programs, and professional and technical advice on new technology, production practices, and crop and livestock management to farmers. They are responsible for the identification, co-ordination, and development of agricultural opportunities on an individual farm and regional basis.

Provincial 4-H Program: The division is responsible for the management of the 4-H Program in the province, and the co-ordination of 4-H activities with the provincial and national 4-H Councils. Services and resources are provided to 4-H clubs across the province, including the design, organization, and promotion of agricultural activities and leadership skills to youth in the province.

Provincial Pasture Program: This program provides an operating grant to approximately 30 pastures across the province based on the number of animal units using the pasture. These development funds are provided to community pastures to ensure economical and quality pasture is available to livestock operators in order to further develop the livestock sector.

Farm Business Management Services: The division is responsible for the development and delivery of farm business management advisory services to industry on a wide range of farm business issues, such as business planning, financial analysis, risk management, credit management, succession planning, human resource development, and the strategic planning and development of the agrifoods sector. These specialized business services are offered by the farm management specialists.

Livestock Insurance Program: The division is responsible for the management and administration of the Livestock Insurance Program through the Newfoundland and Labrador Livestock Owner's Compensation Board. Livestock insurance is a provincial program available to compensate livestock farmers for the death or injury of sheep, goats, and cattle caused by dogs or other predators.

Canadian Agricultural Income Stabilization Program (CAIS): CAIS is a federal-provincial income stabilization and disaster protection program which established the first permanent system for agricultural disaster assistance starting in the 2003 production year. It has been designed to offer Canadian farmers comprehensive and equitable protection for both large and small declines in farm income. Farmers can apply annually under the program and choose a level of protection ranging from a minium of 70 per cent to a maximum of 92 per cent of the farm's production margin. To

access government contributions, the producer makes a deposit with their financial institution and in the event of a margin decline, government contributions are paid to the producer. Governments and farmers share in the costs of replacing lost income. The greater the farm loss, the greater the contribution share by governments.

CAIS will be funded through the business risk management element of the APF.

Production Insurance Program: Production Insurance is a federal - provincial program designed to provide farmers with some measure of income protection against uncontrollable natural perils. Farmers in Newfoundland and Labrador can get insurance for potato, turnip, cabbage, carrot, beet and parsnip to protect against natural perils such as drought, hail, wind, frost, disease and pests. Research is on-going to introduce other crops such as forage and corn. The insurance premium is paid by the federal and provincial governments and the producer. The program is provincially administered through the Newfoundland and Labrador Crop Insurance Agency.

Agricultural Policy Framework (APF) Agreement: The federal, provincial and territorial governments entered into a new 5 year agricultural framework agreement which commenced on April 01, 2003. The APF was designed to address major challenges faced by the agriculture and agrifoods industry in Canada. This Agreement with the federal government totals approximately $32.5 million over five years on a 60:40 basis. These funds will be used for various programs and initiatives structured around the following five elements:

- Business Risk Management
- Food Safety and Quality
- Environment
- Renewal
- Science and Innovation.

- **BUSINESS RISK MANAGEMENT**

Programs such as an Production Insurance Program and the Canadian Agricultural Income Stabilization Program (CAISP).

- **FOOD SAFETY AND QUALITY**

This program is designed to provide support to develop and implement initiatives that identify and/or minimize food safety risks or otherwise increase the safety of food produced in this province. Various initiatives have been developed, including:

- Specific Disease Studies on Food-Borne Illnesses
- On-Farm Food Safety Initiative
- Bio-Safety Initiative
- Risk Assessment Initiative
- Food Strategies Initiative
- Regulatory Compliance of Food and Farm Safety Initiative

- Data Management Initiative
- Traceability Initiative

- **ENVIRONMENTAL**

Soil, Air and Water Quality Conservation and Enhancement Program: This program is designed to provide support to implement initiatives aimed at providing an agronomically feasible, economically viable, environmentally sustainable, and socially acceptable stewardship of soil, air, water resources and bio-diversity. This program provides financial, technical, and logistical support of projects aimed at minimizing the impacts or risks to soil, air, water and bio-diversity as a result of agricultural activity. Various initiatives have been developed, including:

- Environmental Farm Planning Initiative
- Soil Resources Initiative
- Nutrient Management Planning Initiative
- Integrated Pest Management Initiative
- Nuisance Management Initiative
- GIS Database Management Initiative
- Soil Drainage and Water Resources Management Initiative

- **RENEWAL**

Agri-Food Business Development Program: This program is designed to build a more profitable and competitive agriculture industry by providing farmers with more choices for diversification and secondary processing opportunities, strengthening skills and knowledge of farmers, enhancing access to business advisory services, facilitating access to capital, and ensuring successful farm transfers. Various initiatives have been developed, including:

- Human Resource Development Initiative
- Farm Succession Planning Initiative
- Agrifoods Business Development Initiative
- Market Development Initiative
- New Entrants Development Initiative
- Newfoundland Labrador Rural Agricultural Development Initiative

- **SCIENCE AND INNOVATION**

Technology Adoption Program: This program is designed to provide support to implement initiatives for new technology, diversification, secondary processing, and research and development activities. This program provides scientific, financial, and technical support aimed at developing innovative approaches to the diversification and commercialization of the agrifoods industry in Newfoundland and Labrador. Various initiatives have been developed, including:

- The Evaluation and Adoption of New Technologies in the Agrifoods Industry

- The Evaluation and Adoption of New Crop Varieties, Non- traditional Crops, Cropping and Storage Systems.
- Secondary Processing and Product Development Initiatives
- Diversification Initiatives

New Direction Research Program: This program will provide a contribution to increase scientific collaboration among governments, academic/research institutes, organizations and industry in priority areas such as:

- extending knowledge on the value, benefits and issues concerning new agrifood technologies;
- commercializing new agrifood technologies;
- developing and co-ordinating agrifood life science research programs among institutions; and
- attracting investment by creating visibility and awareness for the agricultural technology industries.

- **OTHER PROGRAMS**

Northern Agrifoods Initiative: This Initiative will encourage and foster diversification and commercialization of livestock, crops, fruits, and native berries through adaptive and scientific research, economic analysis, human resource development, marketing, and various food safety initiatives in Labrador. In addition, the funding will encourage and foster northern-based agrifoods industries with respect to further processing and value-added products.

There are also various national programs being administered by the province either jointly or in whole, including:

- Canadian Farm Business Advisory Services
- Canadian Agricultural Skills Services
- Planning and Assessment for Value-Added Enterprises

Animal Health Division

This division has a general mandate to be involved in any aspect of animal health that is justifiably in the public interest and within those budgetary limits set by the provincial government. This includes but is not limited to:

1. The provision of farm animal veterinary service to the livestock and poultry industries
2. The provision of supportive laboratory analyses for diagnostic and regulatory programs
3. The control of food quality at the production or primary processing level under the *Food and Drug Act* (raw milk) and *Meat Inspection Act* (slaughterhouses)
4. The monitoring and control of specific animal diseases of either economic interest to the livestock industry or else of public health interest to the provincial community (including rabies, infectious laryngotracheitis, *Salmonella enteritidis*, hantavirus, Lyme Disease, Q-

fever, Tularemia, West Nile virus, Hydatid Disease, Bovine Spongiform Encephalopathy (BSE or mad cow disease)
5. The investigation of cruelty to animals complaints (*Animal Protection Act*)
6. The provision of assistance to wildlife officials
7. The promotion and control of Heritage Animals (Newfoundland Ponies and Labrador Huskies) under the *Heritage Animals Act*

Though many activities are not identified as programs or else cross over between programs the following gives an overview of activities:

1) Farm Animal Veterinary Service

The seven regional veterinarians and poultry veterinarian provide 24 hour, 365 day per year routine or emergency veterinary service to the province's livestock and poultry operators. This service has a fee structure based upon the average charged for such a service throughout the Atlantic Region and was most recently updated in March 1998. In the case of the poultry veterinarian there are annual contracts made with industry representatives for service.

2) Laboratory Services

The division has three distinct though integrated laboratories. In St. John's we have the veterinary diagnostic laboratory and the food quality laboratory. The former assists in the diagnosis of disease problems in animals through various disciplines (bacteriology, mycology, serology, clinical chemistry, haematology, parasitology) while the latter performs food quality analyses on milk (antibiotic residues, added water, butterfat levels, protein, lactose, somatic cells, sediment) or meat (antibiotic residues, parasitic cysts) for regulatory purposes or to offer production advice to producers.

The third laboratory is a satellite that operates in Pynn's Brook. Due to the distance and therefore time delay in sample submission it is preferable to perform some testing locally.

Where the number of submissions, cost of analyses, cost of equipment or technical expertise does not warrant analysis on site we send samples to reference laboratories in the province, region, country or in some cases to the United States on a routine or as needed basis.

The laboratories take part in accreditation programs where national laboratory accreditation programs exist (e.g. Laboratory Accreditation Program, Canadian Laboratory Services for milk testing laboratories; and the Laboratory Proficiency Testing program of the Veterinary Laboratory Association). When such programs do not exist we use only approved tests (e.g. American Organization of Analytical Chemists approved tests for antibiotic testing, American Association of Veterinary Laboratory Diagnosticians procedures) or develop in-house proficiency testing programs. The laboratories have a fee schedule most recently updated in February 1999.

3) Control of Food Quality

A) Meat Inspection Program

This program involves the mandatory licensing of all abattoirs and a voluntary individual animal inspection. Policy, regulation, veterinary support and laboratory analysis are the responsibility of the division. Inspection, licensing and follow up on complaint are the responsibility of the province's single inspection agency (Government Service Center). Carcasses that pass the inspection are stamped with one of the following two legends. The number in the centre identifies from which slaughterhouse the meat comes.

This program is available to all common livestock commodities (hogs, lamb, beef, turkeys, chicken) and could be expanded based upon need (e.g. goats, ducks, pheasants). **Inspection** is focussed on the public health aspects of meat.

B) Dairy Farm Inspection Program

As in the Meat Inspection Program, inspection activities are the responsibility of the Government Service Center. Regulation, policy and laboratory analysis fall under this division with technical and professional support coming from the regional veterinarians and other departmental staff. New regulations were passed in 1999 (*Food Premises Regulations*) which are based on national milk quality objectives.

4) Control of Animal Diseases

A) Rabies Control Program

In the province of Newfoundland and Labrador, two different types of rabies have been identified, fox rabies and bat rabies. Though each form can be equally fatal for humans and domestic animals, they are very distinct in how they are spread and how they can be managed. Bat rabies is sporadic and has been identified in Labrador (Cartwright, 2004) and on the island of Newfoundland (Grand Bruit, 1989). Further research is being conducted on bat rabies, however, all further reference is only to fox rabies. Rabies appears in Labrador on a regular basis. In Labrador the Department of Natural Resources (including conservation officers) is active in many parts of rabies control including followup on reports of strange acting animals, collection and sampling of carcasses for testing and assistance in vaccination programs for domestic animals. Domestic animal

vaccination is performed by public officials in communities with no access to private veterinarians. In those communities with such access (Happy Valley - Goose Bay, Churchill Falls, Labrador City) the department subsidizes the cost of this vaccination at $10 an animal payable to the veterinary clinic.

The island of Newfoundland is considered to be free of fox rabies. As is the case for many islands (Great Britain, Australia, Prince Edward Island), clearly defined geographic limits help keep the disease out or permit disease eradication if it arrives. The island has twice identified the arrival of fox rabies as a threat to this disease-free status and which resulted in major eradication programs. The first was in 1988 when the disease arrived on the ice from Labrador (first case, March in Roddickton). The second was in 2002 when the disease was apparently introduced on the island by a domestic animal (dog or cat) from mainland Canada (first case, December, St. Paul's). Eradication was successful in both cases.

Other threats from this disease are monitored as appropriate, including the movement of raccoon rabies from the US into southern Canada (New Brunswick and Ontario).

Public eduction is also one of the focuses of our rabies control program. This includes interviews - schools and other public presentations, printed materials (posters, factsheets), website development and any other available medium.

B) Infectious Laryngotracheitis

This disease is of economic importance to the poultry industry. In cooperation with producer groups attempts are made to minimize the potential impact of diseases from backyard flocks on their industries.

C) Salmonella enteritidis

This *Salmonella* is of international concern due to its ability to contaminate the inside of eggs thus producing an increased public health threat. In cooperation with the Egg Producers of Newfoundland and Labrador and based on a nationally agreed upon plan, we analyse samples from layer barns to establish the presence of this and other *Salmonella* in this industry with the goal being the total reduction of all *Salmonella* and the elimination of *S. enteritidis*. Through the like of this program, no cases of S. enteritidis have been found.

D) West Nile virus

Due to the unexpected arrival of this mosquito-borne disease, that can cause illness and death in humans and livestock, into North America in 1999, the governments of the USA and Canada have been monitoring the presence and movement of this virus across the continent. In cooperation with federal, provincial and academic organizations in Canada we have been looking for the possible arrival of this disease into this province (through the examination of dead birds) as well as looking at baseline information about the ecology of this disease and whether this province has the mosquito species necessary for its spread.

E) Lyme Disease, Hantavirus, Hydatid Disease & Tularemia

These diseases exist in wild animal populations in various parts of North America. Surveys and cooperative research with Memorial University are carried out to establish the extent of infection in this province and what means the public should take to minimize exposure. In some cases, climate change may increase the chances that diseases such as Lyme Disease establish themselves in our province.

F) Q-fever

In recent years there was a serious outbreak of Q-fever at a series of goat farms which resulted in a significant level of human exposure and illness. Studies were conducted to look at the extent of this disease in the sheep, goat and dairy cattle population.

G) Import Restrictions on Livestock

Under the *Livestock Health Act & Regulations*, it is illegal to import swine, mink, honeybees and hives into the province without a permit. The purpose for this is to protect these industries from diseases known to exist on the mainland.

5) Cruelty to Animals Investigations

The director, regional veterinarians, and poultry veterinarian are named as Special Constables under the *Animal Protection Act*. These individuals generally investigate complaints of cruelty to farm animals while the agents of the SPCA (also named as Special Constables) investigate complaints involving pets. Often we act together when the situation so requires. Prosecutions are carried out through our department (via Crown Prosecutors), the lawyer for the SPCA, the RCMP or RNC. Guidelines for communities considering dog control have been developed and published by this division and the SPCA and circulated to all interested communities.

In addition, we monitor the activities of the SPCA and are involved in training.

6) Assistance to wildlife officials

A number of initiatives have developed over the years through formal negotiation or informal agreement. With other provincial agencies we jointly offer a course in the proper use of tranquillizers by conservation officers. Parks Canada is using this course for its employees in this province and it has been used as well numerous times by the wildlife officials in the government of Nova Scotia. We also operate a health monitoring and raptor (birds of prey) rehabilitation program at the Salmonier Nature Park, investigate disease outbreaks in wild animals, examine game meats for permit conditions, assist the Whale Research Group in determining the cause of death of whales or other marine mammals, assist the Ocean Sciences Centre with health monitoring of its seal population, and perform surveys on disease or contaminant levels in wild animal populations as the need arises (e.g. West Nile virus in crows, brucellosis in caribou, radioactive cesium levels in

caribou, giardia in beavers, hantavirus in deer mice, hydatid disease in Labrador caribou, Lyme disease in ticks, cadmium in moose, salmonella in songbirds). Legal authority for the monitoring and control of wildlife diseases exists under the Livestock Health Act.

7) Heritage Animals

Under the new *Heritage Animals Act*, the division is responsible for the legal requirements of this Act for control of the registration and movement of Newfoundland Ponies. The Newfoundland Pony Society is the public group designated to promote and preserve this animal.

Agrifoods Policy and Planning Division

The Agrifoods Policy and Planning Division plays a coordinating role for the Agrifoods Branch. It is responsible for the direct support to the executive on key policy and intergovernmental issues. As well, the division's duties include policy and program development, economic and statistical support, research and analysis, strategic planning and effective communication of information to all relevant parties.

The following provides more detailed information on the primary functions of the division:

- **Policy and program research, analysis and development -** This division liaises with key industry stakeholders, branch staff and other provincial and federal departments/agencies in the development of programs and policies in regards to the agrifoods sector, legislation and trade.

- **Strategic Planning -** The division is responsible for the coordination, preparation, dissemination and evaluation of strategic and departmental plans as it relates to the department and the agrifood industry.

- **Communications and Information Services -** The division is responsible for the internal and external communications of information in a timely manner. Information pertaining to the branch's programs and services and the agrifood industry is communicated to other departments, governments and the general public via the agrifoods website, presentations and other applicable mediums.

- **Statistics and Economics Section** - The division plays a support role to the branch and the industry in the area of statistical and economic analysis. This is accomplished through the collection and assimilation of financial and performance data and economic analysis (e.g. cost of production analysis) as required. Cooperative information gathering and dissemination is performed with such agencies as Statistics Canada. Information is transferred to end users through regular publications, reports, surveys and other formats.

Agricultural Products Marketing Board

The Agricultural Products Marketing Board (APMB) is a government-legislated body that has the authority to control and direct the operations of the commodity boards. One of the main functions of this supervisory board is to protect the interests of the consumer against the abuse or misuse of the power and authority given to the producer through the commodity marketing boards. In addition to its watchdog function, individuals or groups who feel they have been grieved by actions or decisions of the commodity boards can appeal to the APMB.

Government of Canada

Agriculture and Agri-Food Canada - AAFC
www.agr.gc.ca

Agriculture and Agri-Food Canada's mandate is to promote and support, in a sustainable manner, a growing, competitive, market-oriented agriculture and agri-food industry and to promote rural community economic development. AAFC has offices in every region of Canada representing its three operational branches. These are the Market and Industry Services Branch, Research Branch and Policy Branch. In addition, AAFC is responsible for the Canadian Food Inspection Agency, the Canadian Dairy Commission and the Canadian Grains Commission.

While the department should be contacted directly for up-to-date, accurate information; the following highlight some of the federal government facilities/services that would be of particular interest to new entrants to farming in the province:

Atlantic Cool Climate Crop Research Centre - ACCCRC
www.agr.gc.ca/science/stjohns

Located in the St. John's region is the Atlantic Cool Climate Crop Research Centre. This centre is dedicated to developing techniques for improved crop production on mineral and peat soils. Research efforts are currently focused in three main areas: 1) animal feed production, 2) vegetable and non-food crops and 3) wild small fruit development.

Canadian Food Inspection Agency - CFIA
www.inspection.gc.ca

The Canadian Food Inspection Agency is responsible for the regulation of the country's food safety, animal health and plant protection. The CFIA enforces the high quality standards established through Health Canada to ensure the safety of Canada's food system at all levels.

Farm Credit Canada - FCC
www.sca-fcc.ca

The Farm Credit Corporation provides financial products and solutions which are focused on servicing farmers and small and medium-sized agribusinesses. The FCC offers a variety of financing options which are designed to meet the unique needs of the various agricultural sectors. The FCC office in the St. John's region is located at 308 Brookfield Road.

Agri-Food Industry Marketing Strategies - AIMS

An interdepartmental initiative to encourage Canadian agri-food industries to increase exports by the development and implementation of market responsive strategies.

Agricultural Products - Markets Information Program - MIP

Provides daily, weekly, monthly and annual commodity markets information on a national basis to the agri-food sector.

Business Planning for Agri-Ventures - BPAV

Helps pay the cost of preparing comprehensive business plans

Farm Improvement and Marketing Cooperatives Loans Act - FIMCLA

Loan guarantee program, operated through private lenders, which facilitates the availability of credit to producers to a maximum of $250,000 and farmer-owned cooperatives to a maximum of $3 million.

Plant Protection Regulations

Agriculture and Agrif-Foods Canada regulates the movement of soil, agricultural produce and items such as potted plants, used vegetable bags and machines that may have soil contaminated with potato wart (canker) or the golden nematode. These pests are not found in most other provinces. Regulations have been implemented to restrict the spread of the pest.

Venture Capital

Through the Venture Capital Division of the Business Development Bank of Canada, equity financing is provided to promising small businesses within a distinct market niche.

FARM ORGANIZATIONS

The new farming entrant and other interested parties should also become familiar with the various farm organizations that exist in the province where he/she intends to go into business. Some of these organizations lobby government on behalf of farmers. Some serve to educate farmers on the production of particular commodities, farming practices and technologies. Others are primarily concerned with joint marketing programs.

All provinces have Federations of Agriculture which represent farmers across regions and commodity groups. Their missions are aimed at ensuring a competitive and sustainable future for agriculture. This is implemented by reviewing and commenting on all legislative and regulatory issues that can potentially impact on the competitiveness and general well-being of the agricultural industry. The provincial federation belongs to the Atlantic Farmers Council, who are concerned with regional farm issues and the Canadian Federation of Agriculture who lobbies the federal government on national farm issues and belongs to the International Federation of Agricultural Producers. This international body takes a global look at issues affecting the farming community.

The National Farmers Union is a national farm organization that represents all commodities produced in Canada and promotes the family farm as the most appropriate and efficient means of agricultural production. The Union works with farm families to achieve agricultural policies that will ensure dignity and security of income for farm families while enhancing the land for future generations.

Many other farmer organizations exist in Newfoundland and Labrador, most are organized on commodity lines. Participation in these groups can be of real value to the new farmer as it gives him/her the opportunity to benefit from the experience of colleagues who have been active in the industry for many years. In addition, many groups have active marketing and production enhancement programs which can help you make your business a success. Contact the agrifoods branch or Newfoundland and Labrador Federation of Agriculture for a list of active groups in various areas of the province.

- Newfoundland and Labrador Federation of Agriculture, P.O. Box 1045, Mount Pearl, Newfoundland, A1N 3C9, Tel. (709) 747-4874, Fax. (709) 747-8827, http:///www.netfx.ca/nlfa/, e-mail: fed.agric@nf.sympatico.ca

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APPENDIX I

Agrifoods Branch Staff Listing

DEPARTMENT OF NATURAL RESOURCES
AGRIFOODS BRANCH
Updated May 1, 2005

Antle, Jim	Access Roads Technician	945-3013
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Bavis, Sharon	Clerk Typist III - Carbonear	945-3007/Fax 945-3006
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Bishop, Brian	Dairy Management Specialist	686-5672
Blackmore, Diane	Clerk Typist III - Land Resource Stewardship	729-6758/Fax 729-0205
Blanchard, Ruth Anne	Agriculture Technician I	686-2702/Fax 686-2491
Blundon, Terri-Lynn	TMR Technician	729-7004
Bouzane, Denise	Soil Surveyor	637-2986
Bradley, Krista	Non Ruminant Specialist	637-2672
Brazil, Brian	Agricultural Technician	229-3511
Butt, Fred	Soils Technician	729-7658
Butt, Ed	Small Fruit Crop Specialist	637-2662
Byrne, Edward J. Honorable	**Minister**	**729-2920/637-2487**
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Dunphy, Paul	Livestock Specialist	729-6787
Dunphy, Dr. Ron	Poultry Veterinarian	729-6886
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Edmonds, Scott	Agricultural Technician	729-4148
Fagner, Tom	Soils Lab Chemist	729-6738
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Fleming, Mike	Agriculture Representative	686-2702/686-5225
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Goulding, Otto	Manager of Agriculture Extension	637-2048
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Jenkins, Steve	Accounts	729-1085
Jennings, Dave	Crop Specialist	637-2673
Jewer, Doug	GIS Mapping Specialist	637-2376
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MacPherson, Mark	Manager Market Development Services	637-2564
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Reid, Gregory	Heavy Equipment Operator	229-3511
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Rowsell, Bill	Agriculture Representative	256-1043
Saunders, Kim	Accounts Clerk IV	637-2092
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Snelgrove, Carol	Secretary to Associate Deputy Minister	729-3787/Fax 729-2076
Snow, William	Land Management Officer	686-2702
Snow, Dwight	Crop Insurance Technician	729-7362
St. Croix, Rick	Soil Surveyor	729-6652
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Sweetland, Barry	Land Management Officer	637-2563
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Tucker, Jeannie	Veterinary Lab Technologist	729-0388
Tucker, Randy	Development Control Officer	729-6599
Turpin, Carmel	Director of Communications	729-5282
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Tweedie, Dr. Doug	Veterinarian - Gander	256-1046/Fax 256-1459
Wall, Steve	Heavy Equipment Operator	229-3511
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Whalen, Jeffrey	**Director - Land Resource Stewardship**	**637-2081**
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