

An Overview of the BC Highbush Blueberry Industry

British Columbia is one of the foremost producers of highbush (cultivated) blueberries in the world. Blueberries are an important part of the province's berry industry which also includes production of raspberries, cranberries, strawberries and several other minor berry crops. In 2002, the blueberry crop had a farm gate value of over \$36.7 million. The Fraser Valley region of BC has an ideal climate and growing conditions for blueberry production, enabling growers to achieve excellent fruit quality and high yields.



Health researchers have recently documented many significant health benefits from eating blueberries. This new information along with a very effective industry promotional campaign has greatly increased demand for blueberries. This has translated into recent high grower prices and has fueled a dramatic increase in new plantings. The industry is currently experiencing new challenges associated with the rapid expansion of acreage.

INDUSTRY PROFILE

Global

The United States produced 55% of world production during the 2000 to 2002 period. Canada accounted for 28% and Poland produced 10% of the world total. Most of the US production of highbush blueberries occurs in Michigan and New Jersey, however, the US crop also includes managed stands of wild (lowbush) blueberries harvested mostly in Maine.^{iv} Other US regions producing cultivated blueberries are Oregon, Georgia, North Carolina, and Washington. Blueberries are also grown in a number of European countries and in Chile, Australia and New Zealand.

British Columbia

BC is the second largest producer of cultivated blueberries in the world, following Michigan. The province accounts for about 97% of Canadian highbush blueberry production, with Ontario, Quebec and the Maritimes producing the remainder. In 2002, BC produced 36.7 million lbs of highbush blueberries with a farmgate value of over \$44.2 million.ⁱ BC blueberries accounted for a large percentage of the total value of Canadian blueberry crops which, including the wild (lowbush) harvest from eastern provinces, was valued at \$89,715,000, in 2002.ⁱⁱ

FACTSHEET



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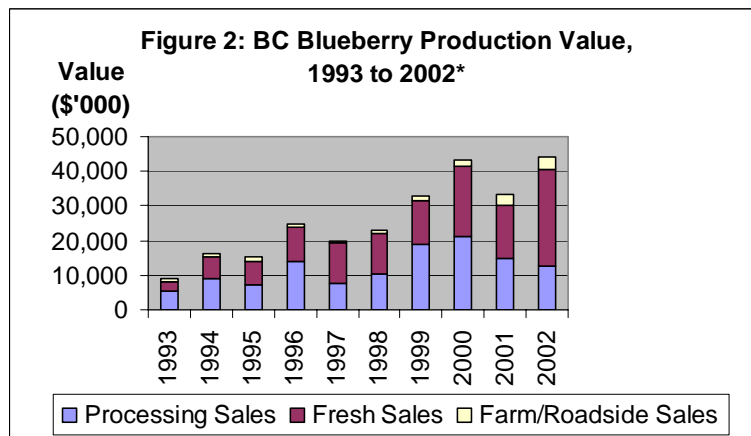
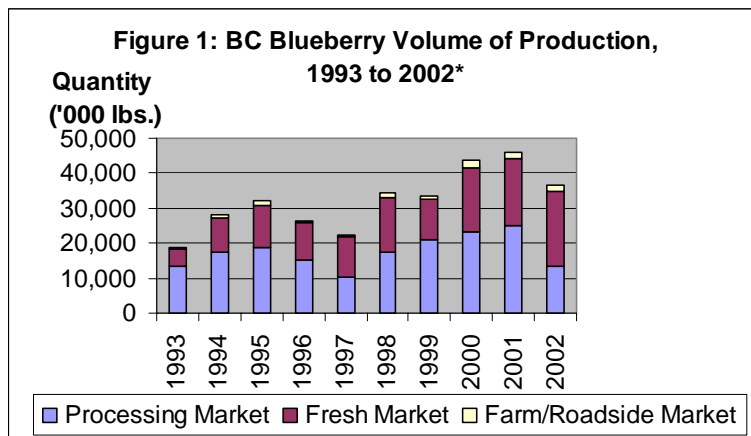
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About 99% of BC production occurs in the Lower Fraser Valley — primarily Abbotsford, Pitt Meadows, Surrey and Richmond — but blueberries are also grown on Vancouver Island and the Interior. Blueberry acreage has almost doubled in the last five years and was estimated at about 9,000 acres in 2003.ⁱⁱ Approximately one third of this acreage is young, non-bearing fields. Total BC production will increase dramatically over the next several years as new fields are planted, and as young plantings mature and bear more fruit. There are approximately 450 blueberry operations in BC ranging in size from a few acres to over 300 acres. About 70% of the farms are less than 20 acres, and approximately 50% of the total acreage is held by 30 of the larger growers.

The BC blueberry industry has seen strong growth during the past decade. Production rose from 18.7 million lbs in 1993, valued at \$8.8 million, to a record crop of 46.1 million lbs, valued at \$33.2, in 2001. Annual production has been affected by weather, as seen in dips in the volumes of production in 1997 and 2002 which was due to winter injury. Figures 1 and 2 show the fluctuations and overall increase in blueberry production and crop value.



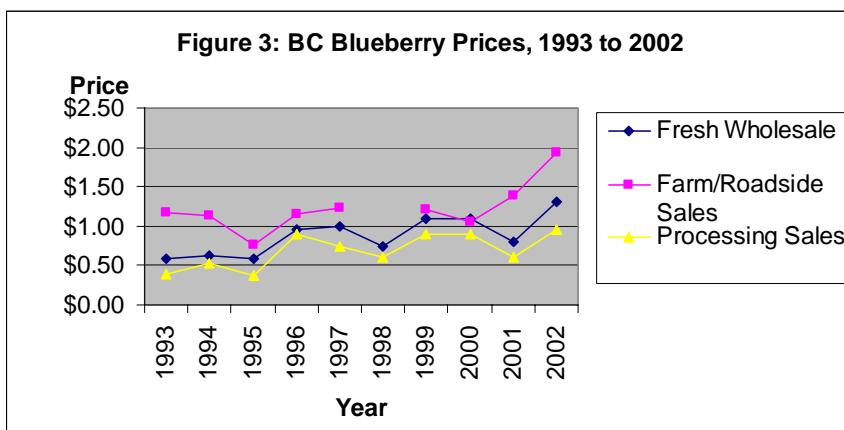
*2002 preliminary sales & volume estimates.
Data Source: BC Ministry of Agriculture, Food and Fisheries, Horticulture Statistics.

Marketing

BC blueberry sales are not regulated by a marketing board. Most blueberries are sold to processors or fresh packers that grade, pack, and market the berries. Many growers also sell some of their product direct to the consumer through farm markets and U-pick operations.



Because of recent high demand for fresh fruit, an increasing percentage of the blueberry crop is sold on the fresh market. Over the past few years, over 50% of the BC crop has been sold to fresh markets, with the remainder being sold for processing, compared to the early 1990's when less than 30% was sold fresh.ⁱ Frozen blueberries may be packed as IQF (individually quick frozen), block frozen in various pack sizes or as puree or juice. Frozen blueberries have traditionally been used in numerous products including jams, yoghurts, pie-filling and baking.



Data Source: BC Ministry of Agriculture, Food and Fisheries, Horticulture Statistics.

Pricing is largely determined by the supply of highbush (cultivated) and lowbush (wild) blueberries throughout North America. Michigan has a significant influence on the market prices because of its relatively large production of highbush blueberries. Figure 3 shows the returns to BC farmers for processed, fresh and direct farm/roadside berry sales from 1993 to 2002. There is a limited production of organically grown blueberries in BC which generally commands higher prices.

The BC Blueberry Council and the North American Blueberry Council are active in promoting blueberries to markets in the US, Japan, other Asian countries and Europe.

Trade

Much of the BC crop of fresh and processed blueberries is exported out of the province. Berries are shipped across Canada and also sold throughout the world, including the United States, Japan, Europe (primarily Germany), and Australia.

Canada is a net exporter of wild and cultivated blueberries. In 2001, national exports of fresh cultivated blueberries, mainly from BC, were 21.3 million lbs, valued at \$35 million. In addition, 25 million lbs of frozen cultivated blueberries worth \$31 million were also exported.ⁱⁱⁱ Most exports go to the United States, representing approximately 70% of fresh and 99% of frozen highbush blueberry imports into the US.^{iv} Japan is another important export market and is increasing steadily through market development.

Utilization

Food processing companies pack approximately 55% of total production for use in the preparation of bakery and dairy products, fruit filling, canned berries, frozen berries in commercial and retail packages, jam stock, juices and concentrate, pasteurized and non-pasteurized purées, dried blueberries and other value-added products.^{vi} Recently, many new uses and products have been developed including blueberry chips, various confections, even blueberry tablets. The BC and North American Blueberry Councils, and food service specialists have introduced new innovative uses for blueberries including soups, salsas, salads, sauces, vinaigrettes and stuffing for meat, seafood, and poultry. Fruit wines are a new development in the wine industry and there are local

companies in British Columbia producing delicious blueberry wines for consumers both domestically and internationally.^{vi}

Grower Organizations

BC Blueberry Council

The BC Blueberry Council (BCBC) is a non-profit, BC grower-supported organization that conducts promotional activities, funds research projects, sponsors grower education programs and comments on various issues that impact blueberry growers. It is funded by a grower levy which is collected by packers and processors.

North American Blueberry Council

The North American Blueberry Council (NABC) is a non-profit association representing cultivated blueberry growers and marketers in the United States and Canada. The NABC encourages cultivated blueberry usage by the foodservice and industrial sectors by expanding seasonal blueberry use, attracting new blueberry users, and encouraging new blueberry products.

BC Agriculture Council

The British Columbia Agriculture Council (BCAC) provides leadership in representing, promoting, and advocating the collective interests of all agricultural producers in the province. The Council fosters cooperation and a collective response to matters affecting the future of agriculture in the province, such as environmental and labour issues, and facilitates programs that benefit the industry.

Crop Production

Fruit Varieties

Approximately 30 different varieties of highbush blueberries (*Vaccinium corymbosum*) are grown in BC, the two main varieties are 'Duke' and 'Bluecrop'. Varieties are chosen for cold hardiness, ripening period, harvesting method (hand-picked or mechanized), fruit quality and markets (such as on-farm sales and fresh or processed shipping). By planting several different varieties, growers can harvest fruit from early July through October, thus capturing larger markets.

Production system

Most of BC's commercial blueberries are grown in south-coastal BC, where temperatures are moderated by the ocean. Well-drained, acidic soil is critical for successful blueberry production. Drainage and irrigation systems, raised planting beds and sawdust mulches are commonly used to maximize ideal growing conditions. Plants are supported by trellis wires to hold the branches upright for machine harvesting. Annual winter pruning maintains yields and berry size, improves plant vigour and controls disease. Honey bee colonies are brought into the berry fields during the blossom period to aid in pollination, an essential process for good berry yields.



Blueberries are harvested by hand or with mechanical harvesters. Growers purchase or lease mechanical harvesters, or rely on contract services. As acreage increases and labour supply declines, more and more acreage is being harvested by machine. In the past, fruit harvested mechanically was suitable only for processed sales; however, with the right variety and careful operation, machine picked fruit can be sold for fresh markets.

Pest and bird control are major concerns. Most growers use an integrated pest management (IPM) system that involves monitoring the crop for insects and disease and implementing control measures when appropriate, as opposed to routinely spraying chemical pest controls. Birds, particularly starlings, are often a serious problem causing large yield losses. Nets that exclude birds, and visual and noise scare devices are used to control birds.

Economics

Major capital expenditures for blueberry growers include: land, buildings, machinery, vehicles, drainage and irrigation, planting stock, support trellis and bird nets. In addition, a machine harvester, grading and packing equipment and, cooling facilities may be required, depending on harvesting and marketing choices of individual growers. It's estimated that a 30 acre machine harvest operation requires an initial capital investment of approximately \$330,000 plus land costs.^v The main blueberry growing areas of BC have some of the highest land values in the province, ranging from \$16,000 to \$50,000 per acre.

Blueberries are a long-term crop. Plants can be harvested 3-4 years after planting but do not reach full production for 8 or more years. Costs for the first three years when establishing the crop—excluding land and equipment costs—are about \$10,000 per acre.^v Major operating costs are labour and crop inputs, such as fertilizers, pesticides and sawdust mulches and, repair and maintenance of machinery. Labour costs vary between manual or machine harvested crops.

Refer to the BCMAFF publication, *Planning for Profit, Blueberry Establishment Budget*, for details on input costs for the first years of production.

Historically, blueberry prices have been volatile from year to year. Over the last 10 years, prices have ranged from 38¢ to over \$1.30 per lbⁱ (see Figure 3). Growers must plan for significant fluctuations in returns. Income stabilization strategies such as participation in the federal/provincial Canadian Agricultural Income Stabilization (CAIS) program can help growers withstand difficult years. The program provides growers with protection from income losses caused by volatile product prices and, weather and labour related crop losses.

Industry Advantages

Health benefits

Consumers are becoming more aware of the health benefits associated with blueberries. They are an excellent source of vitamins A and C and dietary fibre. Researchers have also linked the antioxidants found in blueberries to a reduced risk of cancer and heart disease. Blueberries may also be beneficial for eyesight and memory. Anthocyanin - the pigment that makes blueberries blue - is thought to be responsible for these major health benefits.^{vi}

Changing consumer habits

Increasing demand for blueberries is fuelled by shifts in consumer priorities. Today's busy, health conscious consumers appreciate the health and nutritional attributes of blueberries, and the convenience of a natural food that requires no cutting or peeling.

Effective marketing

The North American Blueberry Council and BC Blueberry Council have developed strong promotional programs in both North American and international markets, particularly Japan.

Pacific Rim trade

There is a strong market for blueberries in Japan, due to widespread knowledge about the fruit's health benefits. BC's proximity to Japan, and efficient air transportation, make BC a natural trading partner.

Value-added products

The industry benefits from increased market opportunities presented by the development of many value added bakery, dairy, frozen, preserved, confectionary, dried and beverage products.

Industry Challenges

Labour shortage

The berry industry suffers from an acute shortage of field labourers. A 2002 labour survey of BC berry producers estimates that the blueberry industry has a shortfall in seasonal labour requirements of approximately 34%.^{vii} BC is one of the few jurisdictions in North America without a foreign migrant worker program that has alleviated similar labour shortages in other horticultural production areas. Producers must rely on an aging local workforce that is unable to adequately meet the labour demands of the industry.

Bird control

Birds can consume as much as half of an individual grower's crop. Substantial control efforts are required such as netting using reflective tape, bird distress and predator recordings and propane cannons. New bird scaring technology is under development.

Rural/urban conflict

Blueberry farms are located in the most densely populated region of British Columbia. Rapid urban growth has brought urban and rural populations into close proximity, creating conflicts over loud bird scaring devices.^{viii,ix} Refer to the BCMAFF factsheet: *Blueberry Farming in your Community ... Contributions and Challenges*.

Blueberry Scorch Virus

Blueberry Scorch Virus (BISV) was first found in BC in 2000 and has become a serious threat to the industry. The virus causes severe dieback, blossom blighting and significant yield loss on susceptible varieties. Infected plants eventually die. BISV is spread by aphids or by planting infected stock.^x An industry and government funded research program was initiated in 2001, and a free diagnostic service is available to confirm cases of the virus and track its spread. Refer to the BCMAFF factsheets: *Blueberry Scorch Virus* and, *Blueberry Scorch Virus, Questions to Ask the Propagator Before You Buy Plants*.

Rapid expansion of acreage

North American blueberry production acreage has increased significantly over the past few years in response to recent high blueberry prices. Over the next few years, as young plants reach full production, this expansion will greatly increase berry supplies and may eventually result in downward pressure on prices.

Competition

BC highbush blueberries compete on the world marketplace with producers of both cultivated and wild (lowbush) blueberry crops from eastern Canada and several growing areas in the United States. Many other growing regions, such as Chile, Eastern Europe and China, are becoming significant blueberry producers and may have an impact on world supplies and prices.

Food safety

The threat of food-borne illnesses has received increased attention in recent years. In 2001, the BC blueberry and raspberry councils initiated the development of an on-farm food safety program, including the establishment of food safety protocols and a training program. In association with BCMAFF, food safety seminars are held to educate growers, farm workers and processors. Growers must keep records that detail their production practices and, processors are currently working on implementing practices that comply with the Hazard Analysis Critical Control Point (HACCP) program, which involves analyzing and monitoring food safety risks and developing an action plan to manage them.

Outlook

The blueberry industry is facing a number of challenges that will impact production levels and crop value. Rapidly increasing acreage in British Columbia, across North America and world-wide will result in increased supplies, major marketing challenges and, may result in a significant decline in prices. Industry organizations will need to step up promotional activities to encourage increasing consumption. Labour shortages are already a major concern for growers and will become more acute with expanding acreage. Strategies to increase and maintain the seasonal workforce are being developed and will be a key factor in the industry's ability to successfully manage growing production.

Because BC producers export a large percentage of the crop, they are vulnerable to competition from other blueberry producing areas. Wild (lowbush) and cultivated blueberries compete for the same markets and marketers of wild blueberries focus on differentiating the wild product in international markets. Effective marketing of BC highbush blueberries is essential to maintain and increase market share.

Demand for blueberries is increasing in both domestic and international markets. Blueberries sales are benefiting from changing consumer habits as seen in increasing sales of fresh berries, likely a reflection of consumers' increasing concern about health issues and food convenience. Expansion of export markets, particularly to Japan, is anticipated, based on awareness of the health benefits of blueberries. Innovative product development is ongoing, with more creative uses being developed for blueberries by industry organizations, chefs and processors.

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OTHER SOURCES OF INFORMATION

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<http://cru84.cahe.wsu.edu/cgi-bin/pubs/PNW0215.html> or contact: WSU Bulletins office, Po Box 645912, Pullman, WA 99164-5912. Tel. toll free: 1-800-723-1763, e-mail: puborders@orst.edu
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<http://www.agf.gov.bc.ca/croplive/plant/horticult/berries/berrymain.htm>
- **InfoBasket**
<http://infobasket.gov.bc.ca>
A portal to agricultural information on the internet including production, business management, marketing & trade, regulations, directories, statistics and data.
- **BC Blueberry Council**
<http://www.bcblueberry.com>
- **North American Blueberry Council**
<http://www.blueberry.org>
- **US Highbush Blueberry Council (USHBC)**
<http://www.ushbc.org/ushbc.htm>

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