



What's New in B.C.

Fall 2014

Spotlight On:

GREENHOUSE

Vegetables and Floriculture



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The B.C. Greenhouse Sector

British Columbia is the second largest greenhouse vegetable producing province in Canada. Peppers are the primary product grown in B.C. greenhouses, tomatoes come in second, followed by cucumbers. All greenhouse vegetable production in B.C. is destined for the fresh wholesale market with international markets (mostly the U.S.) accounting for about 55% of B.C.'s greenhouse vegetable (tomato, cucumber and pepper) sales, while the remaining 45% is sold domestically.

Overall the industry has remained successful and greenhouse growers

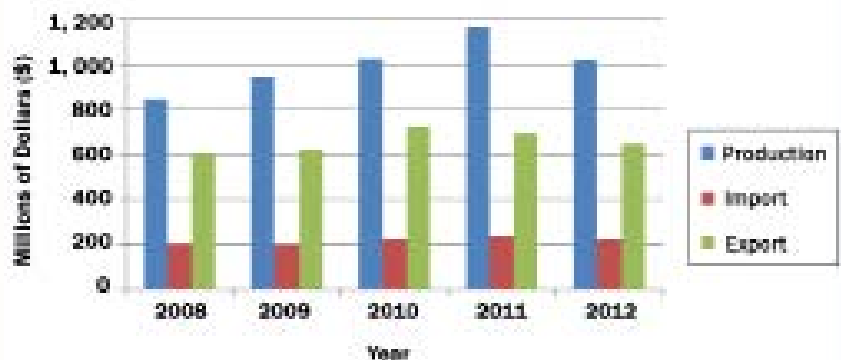
in B.C. have a number of competitive advantages. The province has a moderate climate that allows growers to maintain optimal regulated growing temperatures inside the greenhouse at lower cost. B.C. is also at close proximity to Asian markets. Greenhouse growing is sustainable as it makes efficient use of land and water.

One way B.C. greenhouse growers are trying to stay competitive is by growing different varieties of popular crops. This includes hot peppers, mini peppers, mini cucumbers, mini cherry tomatoes, and dozens of varieties of gerberas.

Quick Facts

- English and mini are the dominant types of cucumbers grown in B.C.
- 2012 sales for B.C. vegetable and ornamentals were approximately \$550 million
- Most greenhouses in the Lower Mainland are made from glass. Other regions of the province use ridge and gutter poly greenhouses to insulate better against colder weather

Greenhouse Vegetables: Canada



Source: Ministry of Agriculture

For more information, please contact the Northwestern Departmental Regional Office in B.C. at 604-292-5858 or at atsbc@agr.gc.ca.

Aussi disponible en français.



Sustainable Production

British Columbia's greenhouse sector is highly innovative with some of the most advanced operations in North America. The sector as a whole is constantly looking for new ways to reduce its environmental footprint via methods such as producing renewable energy, generating renewable heat and conserving water.

For example, some nurseries collect condensation, rain, fertilizing nutrients and irrigation run-off and recycle it for use in the greenhouse. Also, heat collected from solar thermal arrays and warehouse refrigeration exhaust can be stored and circulated. Both of these processes reduce the amount of natural gas and water used.

Houweling's, a B.C. greenhouse vegetable producer, recycles and reuses more than 90% of its waste. They have worked with KUBO, a Netherlands-based company specializing in the construction of sustainable, closed greenhouses, to develop an "ultra-clima" greenhouse. This is a greenhouse structure which allows for optimal regulation of humidity and temperature. The climate control system also leads to higher production yields, and reduced costs of production. Higher production yields are achieved through increased light levels and enhanced CO₂ levels. The BC Greenhouse Growers' Association believes that this is one of the most high-tech greenhouse operations in B.C. and Canada.

Source: Houweling.ca

Science and Technology

At Agriculture and Agri-Food Canada's Pacific Agri-Food Research Centre (PARC), scientists are working on ways to improve the quality of the world's greenhouse crops. The centre has research facilities in Summerland and Agassiz.

Pest Management

In general, greenhouse crops are less vulnerable to pests and diseases due to their enclosed and controlled environment. B.C. is a world leader in pest management, particularly in the use of Integrated Pest Management (IPM) techniques. In the 1980s, significant work was done in this area by PARC scientists, work which has allowed growers to greatly reduce their pesticide use.

For example, any modern greenhouse is likely to have yellow sticky traps hanging in the facility. In the early 1980s, Dr. Dave Gillespie and his team at PARC-Agassiz found that yellow sticky traps could be incredibly effective in monitoring the number of pests. If the traps show that a high volume of a destructive insect is present, greenhouse managers know that it's time to step up pest control efforts. Also nestled among vegetable crops, one may

find another bio-control that was researched at PARC-Agassiz: "good bugs that eat bad bugs," as Gillespie calls it. Good bugs are established in the greenhouse, and when bad bugs invade, they are devoured by their ready and awaiting natural enemy.

All in all, the effectiveness of bio-control pest-management methods such as the above have allowed greenhouses to increase their acreage, quality and volume.

Food safety

At PARC-Summerland, scientists are also looking to further improve the food safety of greenhouse products. Susan Bach is part of a research team that focuses on the safety of horticultural products, particularly leafy greens. She is currently conducting experiments where Romaine lettuce is inoculated with non-pathogenic *E. coli* to monitor the bacteria's response to stressful environmental conditions such as cold temperatures and nutrient deprivation. The results will help scientists better understand where on the farm-to-fork process produce can become contaminated so that mitigation strategies can be recommended.



Above: A mullein plant at Windset Farms

"Good bugs" such as the omnivorous *Dicyphus hesperus* can be established and maintained in greenhouses, feeding on specially-planted crops like mullein. *Dicyphus hesperus* will leave the mullein and attack when unwanted pests make a visit.

Associations



BC Greenhouse Growers' Association



The BC Greenhouse Growers' Association (BCGGA) is a non-profit organization that represents greenhouse vegetable farmers in British Columbia. The association helps to deliver services and research programs to its members, keeping them globally competitive while providing consumers high-quality, sustainable and safe greenhouse vegetables.

Linda Delli Santi (pictured) is BCGGA's executive director and has been in the B.C. greenhouse sector for thirty-five years. She says that her growers are absolutely interested in expanding their export markets. However, she notes that while some countries have no barriers to trade others are rather difficult to penetrate—which is where BCGGA can step in. Delli Santi and her colleagues work with the Canadian Food Inspection Agency to meet the protocols required to

allow products from B.C.'s greenhouses into foreign countries. Generally, she says, "We will facilitate anything that needs to be done to open the doors for our growers."

Delli Santi also notes that she has always been impressed by how quick B.C. greenhouse growers are to try new things. "Growers have gotten into things like closed greenhouses, geothermal energy, automation. They've dabbled in growing products like strawberries and eggplants. They've got their ears to the ground." She says this is because the growers pay close attention to greenhouse research being done in the Netherlands (the industry leader). Some even visit the country to learn firsthand, and as a result become eager to try out ideas that could boost the competitiveness of British Columbia's greenhouse sector.

The BC Greenhouse Growers' Association and the United Flower Growers Co-op Association represent almost all of the greenhouse vegetable and flower producers in B.C.

United Flower Growers Cooperative



The United Flower Growers Cooperative Association is a cooperative of approximately 80 of B.C.'s fresh-cut flower and plant growers, most of whom are located in the province's fertile Fraser Valley. Since 1963, the association's main purpose has been to sell flowers on behalf of its members, fifty-two weeks a year. Flowers are shipped fresh from the greenhouse to their auction facility in Burnaby, and are then sold via the largest Dutch-style auction in North America. 600 buyers are registered bidders and 250-300 are active on any given auction day.

CEO Bob Pringle (pictured) says he knows local growers are doing something right because buyers often ask for a product by company name. "Buyers get aware of the brand, so to speak," he says. "An exceptional product, quality packaging, and the grower all go hand-in-hand." The flower industry is a very competitive one yet many B.C. growers are able to compete in the North American market. Pringle says that this is because they can

consistently provide fresh, high-quality products like sunflowers and gerberas, as well as niche, seasonal products such as Easter lilies, tulips and poinsettias.

In addition to helping growers sell, United Flowers advocates and manages issues for the industry, often working with the BC Greenhouse Growers and BC Landscaping & Nursery Associations on many issues. They are also financial partners with Flowers Canada, the national trade association of the Canadian floral industry. United Flowers' co-director Stan Vander Wahl is the chairman of the BC Agricultural Council which represents thousands of B.C. farmers and ranchers, and dozens of farm sector associations.

Looking to the future, Pringle says the B.C. floriculture industry wants to increase consumer awareness of the quality of its products. A big part of the plan is working to ensure that flowers and plants are at optimal freshness when potential customers see them at a point of purchase.



Certification

CanadaGAP™ Program



CanadaGAP™ is a food safety program that helps to implement and maintain effective food safety procedures within fresh produce operations. Two manuals, one specific to greenhouse operations, and the second for other fruit and vegetable operations, have been developed by the horticultural industry and reviewed for technical soundness by Canadian government officials.

These manuals are for companies implementing Good Agricultural Practices (GAPs) in their production, packing and storage operations, as well as for repackers and wholesalers implementing Good

Manufacturing Practices (GMPs) and Hazard Analysis and Critical Control Point programs.

The manuals are based on a rigorous hazard analysis applying the seven principles of the internationally-recognized HACCP approach. The program is benchmarked to and officially recognized by the Global Food Safety Initiative. Audit and certification services for the program are delivered by accredited Certification Bodies. Certification indicates that the operation has a system of procedures to minimize the risk of contamination to product.

Visit www.canadagap.ca for more information.

source: www.canadagap.ca

Company Features

Confidential