

COMMODITY

GREENHOUSE

Description

British Columbia's greenhouse industry comprises three major sectors:

- greenhouse vegetable growers, who produce tomatoes, cucumbers, peppers, lettuce and herbs
- floriculturists, who raise ornamentals such as cut flowers and flowering, potted, bedding and foliage plants
- nursery growers, who propagate a wide range of trees, shrubs, perennials and vines

Most greenhouse operations are located in the Fraser Valley. The average greenhouse covers an area 2-4 hectares and can range up to 20 hectares in size. There may be more than one greenhouse on a farm property. Greenhouses are very efficient and productive. A greenhouse can produce 15 to 20 times more produce than a field of the same area.

Greenhouse vegetables are grown with no herbicides and little or no pesticides. Instead, beneficial insects and other integrated pest management techniques are used. BC is considered the world leader in biological control technologies.

Greenhouse vegetable growers produce tomatoes, cucumbers and peppers for 10 months of the year, and lettuce and herbs 12 months of the year. The production cycle begins with seeding in October or November. Seedlings are transplanted into the greenhouse in November or December and harvested from February through November.

Greenhouse floriculture includes cut flowers, flowering potted plants, bedding plants and foliage plants. Cut flowers include a diverse range of annuals, perennials, bulbs, ornamental grasses and woody cut flowers. The main cut flower crops are: roses, gerberas, freesias, lilies, altstroemeria, daffodils, tulips, snapdragons, gladiolas, orchids, and stocks. Potted plants also include a broad range of crops. The main potted plants include: chrysanthemums, azaleas, African violets, cineraria, cyclamen, exacum, gerberas, gloxinia, hydrangeas, kalanchoes, begonias, bedding plants and foliage plants such as ferns. Seasonal favorites are poinsettias and Easter lilies. Bedding plants popular with home gardeners include impatiens and geraniums. Floricultural products are produced year-round.

Greenhouse growers require supplemental artificial lighting to maintain production levels, equipment to mix growing media, road access for transportation of products and materials, and close proximity to grading and distribution facilities. Products are often delivered to market early in the morning.

Farm Practices of Particular Interest

Practices for specific farm activities can be found in the Farm Practice section of this reference guide. Farm practices that are of particular interest to greenhouse production include:

Farm Buildings

Greenhouse producers require buildings to protect equipment and store growing media, fertilizers and pesticides.

See Farm Practice: [Storage of Hazardous Material](#)
[Storage of Farm Supplies and Products](#)
[Structures](#)
[Ventilation](#)

Greenhouse Wastes

Greenhouse wastes such as crop residue, plastics and growing media must be collected, used, stored, handled, and disposed of in accordance with the *Code of Agricultural Practice for Waste Management*. Maximum concentrations of allowable particulate matter in boiler emissions are also addressed in the Code.

See Farm Practice: [Farmstead Refuse](#)
[Crop Residue Management](#)
[Composting](#)
[Burning](#)

Irrigation

Greenhouse growers apply irrigation water daily in frequent, short applications. Fertilizers are generally applied through the irrigation water. Recirculation systems should be used when practicable to collect excess irrigation water and prevent leachates from entering groundwater.

See Farm Practice: [Irrigation](#)

Lighting

Supplemental lighting is essential to greenhouse crop production. Yard lights may also be used for security or safety purposes.

See Farm Practice: [Lighting](#)

Pesticides

The greenhouse industry in BC is known for its use of integrated pest management technologies. In limited situations where some pesticide use may be necessary, care in application rates and storage techniques must be taken.

See Farm Practice: [Pesticides](#)

Removal of Soil or Placement of Fill

As necessary, soil removal or placement of fill is a permitted agricultural activity. For specified farm and non-farm uses, including the construction and maintenance of greenhouses, farm building or structure for use in an intensive livestock operation or for mushroom production, an aquaculture facility, or a composting facility, with conditions, and where the removal of soil or placement of fill exceeds 2% of the area of the parcel, a 'Notice of Intent' must be submitted to the Agricultural Land Commission. Proposals under the 'Notice of Intent' may be allowed with terms and conditions set by the CEO of the Commission or require an approval of the Commission.

Stationary Equipment

The greenhouse industry is highly mechanized. Equipment is used for production, processing and product handling. Equipment may be used 24 hours a day during the production season. Cogeneration units require round-the-clock operation for the production of heat and carbon dioxide.

See Farm Practice: [Stationary Equipment](#)
[Product Processing](#)

Transportation

Many greenhouse operators use vehicles that make deliveries and haul products around the clock. They must, however, supply adequate areas on the farm property to accommodate the volume, movement, and parking of trucks and other traffic related to the activities and production of the farm. Operations, which sell directly to the public, must provide adequate off-road parking.

See Farm Practice: [Transportation](#)
[Direct Farm Marketing](#)

Water Management

Stormwater runoff from greenhouse operations is permitted to enter municipal drainage systems, provided that a storm water management plan has been prepared in accordance with municipal bylaws. Water containing nutrients or other agricultural waste must not be directly discharged into a watercourse or groundwater supply.

See Farm Practice: [Drainage](#)
[Stormwater Management](#)
[Fertilizers and Soil Conditioners](#)

Woodwaste

The greenhouse industry uses woodwaste as a fuel source in boilers.

See Farm Practice: [Woodwaste](#)

Legislation

Agricultural producers are expected to follow all legislation that pertains to their farming operation. The *Farm Practices Protection (Right to Farm) Act* stipulates that the farm operation must meet the *Health Act*, *Pesticide Control Act*, *Waste Management Act* and the regulations under those acts. Information on federal and provincial legislation can be found in Appendices B and C.

Acts that pertain to specific farm activities are listed in the farm practices section of this reference guide. Local government bylaws may also apply to some farm practices. Acts that are not referenced elsewhere that are of special interest to greenhouse growers include the following:

Federal

[Fisheries Act](#) – prohibits the discharge of deleterious substances (i.e., pesticides and agricultural wastes) into waters frequented by fish

Provincial

[Power Engineers and Boiler and Pressure Vessel Safety Act](#) – regulates licensing of pressure vessels and level of maintenance staff required to oversee heating plants

Local Government

Applicable *Site Coverage, Noise and Lighting Bylaws*

Publications

Publications that provide information on greenhouse production include, but are not limited to, the following (refer to Appendix D for details):

Chemigation Guidelines for British Columbia

British Columbia Environmental Farm Plan Reference Guide

Floriculture Production Guide for Commercial Growers

Greenhouse Vegetable Production Guide for Commercial Growers