

FARM PRACTICES

IRRIGATION

Description

Climatic moisture deficits normally occur in many parts of BC during the summer months. Irrigation is often required. Farmers access irrigation water by pumping from surface or groundwater sources or having it delivered by an irrigation district or other water purveyor.

Irrigation is defined as the application of water to a crop to replace the climatic moisture deficit over an irrigation interval. Chemigation is defined as the application of fertilizers and other chemicals to a crop through an irrigation system.

Activities and Operations

Access to Water

The *Water Act* stipulates that a water licence is required to take water from a surface water source. The *Fisheries Act* prescribes that irrigation pumps and water intakes on water sources with fish present are properly screened to prevent fish from getting trapped. No licence or permit is required to access groundwater at the present time.

Irrigation

Irrigation equipment may operate 24 hours a day during the crop growing season. The amount of water applied should not exceed the climatic moisture deficit or an amount that can be stored by the soil within the crop rooting depth. Irrigation systems should be designed and operated in accordance with the B.C. Sprinkler Irrigation Manual or the B.C. Trickle Irrigation Manual. Irrigation water should be applied only to the target area. Part circle sprinklers, shields or other devices should be used to ensure irrigation spray does not strike public roads, power lines or other non-target areas.

See Farm Practice: [Mobile Equipment](#)
[Stationary Equipment](#)

Chemigation

Fertilizers and other chemicals may be applied to agricultural crops through sprinkler and trickle irrigation systems, provided that it is specified that on the label that the chemical is approved for chemigation and proper backflow preventers have been installed. The standards listed in the Chemigation Guidelines for British Columbia provide guidance to backflow prevention.

Maintenance

Drip or trickle irrigation systems may require the injection of acids or chlorine to prevent emitters from plugging over a period of time.

Frost Protection

Irrigation equipment is often used to protect crops from frost during the spring and fall. Irrigation must be started prior to the onset of the frost and continued until the danger of frost has passed. Frost protection may be needed by tree fruit, berry and vegetable producers.

Crop Cooling

Some new apple varieties must be cooled when summer temperatures peak to prevent the fruit from sun scalding. Overhead irrigation systems may be used to keep fruit at an acceptable temperature. Irrigation systems will operate intermittently throughout the day when they are cooling crops.

Reclaimed Water Application

Treated reclaimed water can be used to irrigate agricultural land. The provincial *Waste Management Act*, *Municipal Sewage Regulation* and local bylaws should be adhered to when reclaimed water is used to irrigate crops. A Code of Practice for the Use of Reclaimed Water provides guidance on the use of reclaimed water.

See Farm Practice: [Non-Agricultural Waste](#)

Water Storage

Storage is often required to ensure that sufficient irrigation water is available later in the irrigation season when stream flows are low. Farmers often collect spring runoff into storages created by dams or dugouts. All storage reservoirs constructed by a dam must be licensed under the *Water Act*. Dugout water storage should be licensed but this is not a requirement in some regions of the province, providing the dugout is not diverting a watercourse and is filled only with surface runoff collected from a person's own property.

Legislation

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect irrigation practices include, but are not limited to, the following:

Federal

Fisheries Act – requires proper screening of irrigation intakes to protect fish

Provincial

Local Government Act – (Plumbing Code) – establishes standards for backflow preventor installation

Waste Management Act

Municipal Sewage Regulation – provides guidance for the use of reclaimed water on agricultural land

Water Act – requires a licence or permit to withdraw water from surface water sources

Local Government

Applicable *Water Purveyor Bylaws* may specify water delivery rates or backflow prevention requirements.

Publications

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

B.C. Sprinkler Irrigation Manual

B.C. Trickle Irrigation Manual

B.C. Frost Protection Guide

Chemigation Guidelines for British Columbia

Irrigation Scheduling Techniques

Using Irrigation for Tree Fruit Cooling

Irrigation System Design with Reclaimed Water

Code of Practice for the Use of Reclaimed Water