

IRRIGATION

Irrigation involves watering crops by using water available in nearby lakes or rivers or in the ground. The water is pumped into canals or pipelines, then onto fields.

Irrigation is practiced in farming regions from coast to coast in Canada. Only 8.5% of Canadian farms use irrigation; the rest rely solely on precipitation for crop watering.¹

! Egyptian irrigation dates back to 3,400 B.C., while in the Indus Basin, irrigation has been practiced for as long as 5,000 years using a large network of canals.²



Sprinkler irrigation on canola

Why farmers irrigate

- Supplements precipitation and offsets the effects of drought and global warming
- Improves crop yields (amounts produced) and diversifies what farmers are able to grow
- Provides opportunities to grow higher value crops, such as fruits and vegetables

! 85% of farmland irrigated in Canada is located in western Canada (BC, Alberta and Saskatchewan),³ with farmland irrigated in Alberta representing 65% of that total.⁴

Examples of crop types grown with irrigation:



Oilseeds
(**canola** and flax)



Cereals
(wheat and **barley**)



Forages for feeding animals
(**alfalfa** and silage corn)



Pulses
(**dry beans** and peas)



Fruits and
vegetables



Sprinkler
irrigation in an
orchard

How is irrigation regulated?

Irrigation is controlled provincially; however, not every province has regulations for water use.⁵

WATER ACCESS IS IMPORTANT

Irrigation demands a large supply of water. Besides generating thermal power, providing drinking water and creating recreational sites, many dams with water reservoirs support irrigation that help ensure farmers have adequate access to water during the growing season. Most dams used for irrigation purposes are located in western Canada (southern Alberta, the BC interior and Saskatchewan) due to the availability of suitable land for irrigation, a lack of available moisture/precipitation during the growing season, and access to runoff water from snow melt in the mountains.

IRRIGATION

TYPES OF IRRIGATION



The irrigation method used depends on the type of crop, the type and quality of water supply, and soil and climatic conditions.

- **Surface irrigation** – Water is distributed over the soil surface through furrows (trenches in the ground) or between strips of land. This type of irrigation is also referred to as **flood irrigation**.
- **Sprinkler irrigation** – This is one of the most common types of irrigation used in western Canada. Water is pumped from a water source into a series of pipes and distributed to crops through sprinklers. This method, which is used on most crops, results in much lower evaporation losses than surface irrigation.
- **Micro (drip) irrigation** – Small hoses or tubes release water at the base of plants. This method is used mostly for orchards and vineyards and is the most efficient form of irrigation.



Drip irrigation on potatoes



Water can be drawn from ponds for irrigating crops.

Irrigation is key to global food security. World-wide, irrigation produces 40% of global food supplies.⁶

CONSERVATION PRACTICES

Water and land are precious resources that need to be managed effectively. Efficient irrigation involves applying the right amount of water and crop inputs (fertilizer, pesticides, etc.) only when plants need them in order to conserve water, protect wildlife habitats and reduce energy costs.

Farmers and ranchers conserve water by:

- irrigating on calm days so that water isn't wasted.
- irrigating on cooler, cloudy days or at night when less moisture is lost through evaporation.
- checking systems regularly for leaks and repairing them immediately.
- using water or energy saving nozzles on irrigation equipment.
- practicing **conservation tillage** which minimizes disruption of the soil and helps to conserve soil moisture.



Sprinkler irrigation on onions