Water Conservation
FACTSHEET

BRITISH COLUMBIA
Ministry of Agriculture, Food and Fisheries

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IRRIGATION TIPS TO CONSERVE WATER ON THE FARM

Water management is an important part of farm operations and the production of quality agricultural crops. During water shortages, it is important to conserve water and stretch water resources to ensure that the supply will be available for the duration of the growing season. The trick is to ensure the crop has enough water during its growing cycle to maximize yields while not wasting water.

Water conservation can be achieved by:

- using equipment that is more efficient
- ensuring that equipment is operating properly
- managing the application of water on the farm more effectively

Details on how to conserve water are described as follows:

1. Repair leaks in the irrigation system

If you have a water meter installed, the irrigation system can be checked for leaks by turning off the system and monitoring the meter to see if it is still running. Look for 'perpetual wet spots' along the irrigation line that do not dry up between irrigations.

2. Select a more efficient irrigation system if possible

Selecting systems that are not as susceptible to evaporation can increase irrigation efficiencies. Using sprinklers instead of a stationary or travelling gun can reduce water use by 5 – 15%, especially in windy areas. Using a drip system instead of a sprinkler system can save up to 20% of total water use.

3. Improve sprinkler irrigation efficiency

To achieve peak performance, the irrigation system must be properly designed in the first place. Replace old nozzles (checked by using drill bits) and run the system at the designed operating pressure. Ensure that sprinklers are properly spaced. This will improve efficiency and prevent over-irrigation of some areas while trying to cover dry spots. Check the pressure at both the farthest and the highest points of the lateral line. The acceptable pressure variation along a lateral line should be ±10% (no more than 20% variance).

4. Find your maximum irrigation set time and only apply as much water as your soil can hold

Soils can only hold a limited amount of water before the water drains below the root zone or will runoff the saturated soil surface. Light sandy soils hold less water than heavy clay soils. See the B.C. Sprinkler Irrigation Manual and the B.C. Trickle Irrigation Manual for more information on how to determine how long to run your irrigation system to minimize water losses.

5. Know your crop's water requirements

It is possible to determine how much water your crop is using by monitoring the evapotranspiration (ET) and applying a crop coefficient (K_c). Knowing how much water the crop has used can determine the amount of water removed from the soil. The next irrigation should then only be long enough to replace that amount of moisture. See Factsheet No. 557.100-1 Irrigation Scheduling Techniques. Local ET information is available at www.farmwest.com.

6. Use a soil moisture monitoring device or climate information to determine when to irrigate

Often when the surface of the soil is dry there are still water reserves lower in the root zone that the crop can draw upon. By monitoring soil moisture within the root zone it may be possible to postpone irrigation by a few days. See Factsheet No. 577.100-1 Irrigation Scheduling Techniques and Factsheet No. 557.100-2 Irrigation Scheduling with Tensiometers for more information.

Climate information is useful in scheduling irrigation. Daily climate data in real-time and a five-day forecast are available at www.farmwest.com for various climate stations throughout B.C. See Factsheet No. 577.100-3 Sprinkler Irrigation Scheduling Using a Water Budget Method and Factsheet No. 577.100-4 Trickle Irrigation Scheduling Evaporation Data for more information.

7. Adjust operating parameters under windy conditions

When operating gun systems under windy conditions, lower the trajectory level and/or narrow the spacing to achieve the best uniformity possible. Refer to the B.C. Sprinkler Irrigation Manual for a detailed explanation on how to adjust the spacing based on wind speed.

8. Refrain from irrigating during hot windy periods of the day if possible

During the peak of the irrigation season, it may not be possible to wait to irrigate due to the logistics of getting around the entire farm. However, during the early and late part of the irrigation season there may be more flexibility in planning irrigation times. Studies in B.C. have shown that water savings can be realized during the early and late part of the irrigation season, May and June, and also in September.

For further information on related topics, please visit our website

Resource Management Branch

www.agf.gov.bc.ca/resmgmt

Linking to our

Publications and Conceptual Plans

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