

Irrigation Records

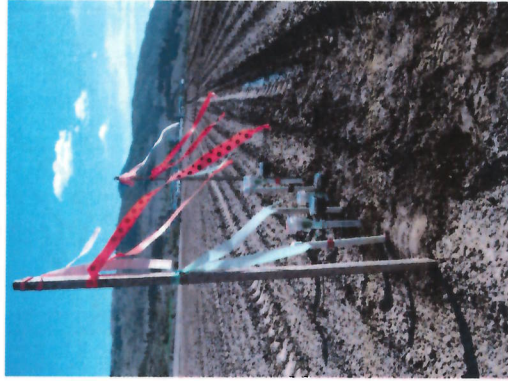
Each field site that was studied had an irrigation assessment done to determine the depth of irrigation water applied. The producers recorded the number of irrigations each season. The records were used to calculate total depth applied over the irrigation season.

Salmon River - 2004 - 2007						
Site	Total Water Applied	Moisture Deficit	Irrigation Efficiency	Irrigation Required	Licensed Duty	Percentage of Licence
1	23.1	19.9	72%	27.6	30	77%
2	27.6	15.7	72%	21.8	30	92%
3	9.9	18.4	72%	25.6	24	41%
4	5.3	13.6	68%	20.0	12	44%
5	7	16.8	80%	21.0	24	29%
6	23.2	13.4	72%	18.6	24	97%
Average						63%

Nicola River 2005-2008						
Site	Total Water Applied	Moisture Deficit	Irrigation Efficiency	Irrigation Required	Licensed Duty	Percentage of Licence
1	20.5	29.5	72%	41.0	30	68%
2	19.1	27.2	72%	37.8	24	80%
3	33.5	29.8	72%	41.4	30	112%
4	10.2	24.1	80%	30.2	24	43%
Average						76%

North Thompson 2011 - 2013						
Site	Total Water Applied	Moisture Deficit	Irrigation Efficiency	Irrigation Required	Licensed Duty	Percentage of Licence
1	11.5	14.3	80%	17.9	30	38%
2	11.6	16.1	80%	20.1	30	39%
3	19.3	17.9	80%	22.4	30	64%
Average						47%

The irrigation records showed that most producers do not use their licenced irrigation duty. Most of the fields in the study showed that the late season soil moisture was drying out. The question is: 'Would an extra irrigation have increased production?'



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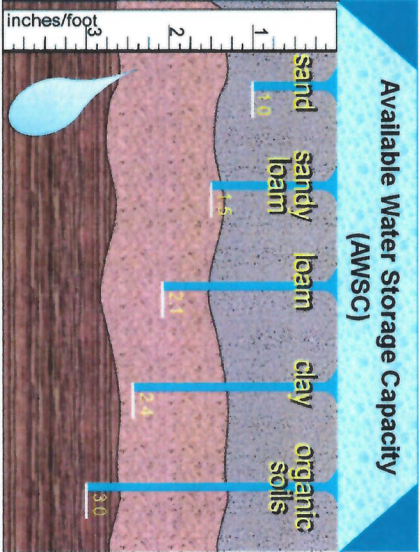
Soil moisture meters are devices that are installed at different depths in the earth to measure the soil dryness.

The purpose behind the meters is to help schedule the irrigation system through the growing season.

The Ministry of Agriculture is conducting an ongoing study to determine the effectiveness of the meters.

Why do we irrigate?

Irrigation replenishes soil moisture. The soil is our storage tank for water. The amount of water held in the soil is called the available water storage capacity (AWSC). Each soil type holds a different amount of water.



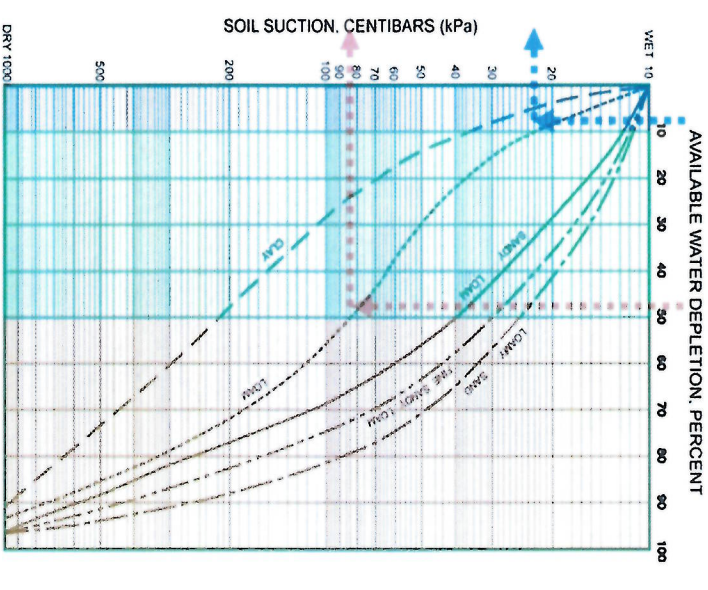
Not all the water in the soil can be consumed by the plant. Most crops can draw 50% of the soil moisture before irrigation should be started.

Crop	Maximum Percent
Peas	35
Potatoes	35
Tree Fruits	40
Grapes	40
Tomatoes	40
Others	50

Saturated soils are not desired. This occurs when the moisture level is above 10% of the available water depletion. Soil moisture is determined by how difficult it is for the plant to draw water from the soil. This is termed as soil suction or tension and is measured in centibars, (cbar).

Irrigation Trigger Levels

Wet and dry thresholds can be determined from the following graph for each soil type. The dry threshold level or turn on is referred to as the trigger level. The goal is to stay between the wet and dry level.



For example a loam soil has a irrigation trigger level of 85 cbar. When the soil moisture rises to 23 the irrigation may be shut off. For a sandy loam soil the trigger level would be 40 cbar and the shut off at 13 cbar.



Meters used in the study

Soil Moisture Study

For the last several years a soil moisture study was under taken by the Ministry of Agriculture out of the Kamloops office. The study also recorded irrigation practices. The following graphs are examples of soil moisture recording during the study.

