

Tensiometers

What are tensiometers?

Devices that monitor the soil/water tension – how much water is held within the soil – how dry or wet the soil is. Tensiometers mimic a plant root.

How do they work?

A water filled tube with a ceramic tip and a pressure gauge. As the soil dries out it exerts tension on the water within the tube, pulling it down towards the ceramic tip and the soil – causing an increase in pressure within the tube which causes the pressure gauge to move to a higher reading. If soils are fully saturated, then the tensiometer should read zero centibars. The higher the centibar reading the drier the soil.

When using tensiometers there is some information that you will need to know:

1. What is your crop?
2. How deep is the root system? How much water does it use/need?
3. What is your soil type?

How to install a tensiometer

Prep the tensiometer per manufacturers' specifications

- Pre-soak the ceramic tip
- Fill with Water
- Remove air pockets
- Select a proper site (i.e., not in wheel tracks; in an area of active growth)
- Install in soil at a proper depth, being careful not to damage the ceramic tip
- Make sure that there is good soil contact with the ceramic tip!
- Remove air bubbles
- Seal the tensiometer into the soil

Reading your Tensiometer

Tensiometers read in centibars. Using a small tensiometer, placed 4" within the soil, tensiometer reading for cranberries should remain with the 5-10 centibar range, with 6-7 centibars being ideal. Irrigation is needed when soil reaches 8-12 centibars.

Tensiometer troubles?

No water in tube?

Possible damage to the ceramic tip

Always read zero?

Soils are always wet

Air in the tube

Possible leak