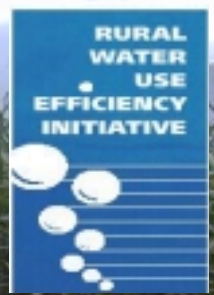


Irrigation Management Using Tensiometers



III. Maintenance and troubleshooting

(TO3-0801)

Tensiometers are one of the easiest moisture measurement tools to use in irrigation management. However, from time to time, maintenance checks must be carried out in order to keep the device in good working condition and ensure readings are correct.

When installing tensiometers:

- Make sure there are no air leaks. Ensure that the gauge and ceramic tip are screwed on firmly but not overtight.
- Check that the ceramic tip is not blocked. Water should be able to move freely through the ceramic tip.
- Position the tensiometer correctly. Ensure the ceramic tip has been installed within the active root zone of the plant.
- Add blue tensiometer fluid or a few drops of chlorine to the water in the tensiometer to inhibit algae growth.
- Service tensiometers 2-3 times in the first week after installation and then every time a reading is taken.
- Fill the reservoir as required and ensure that the fluid level in the tensiometer is no more than 2-3 cm below the gauge after an irrigation.

Common problems:

➤ Gauge always reads zero:

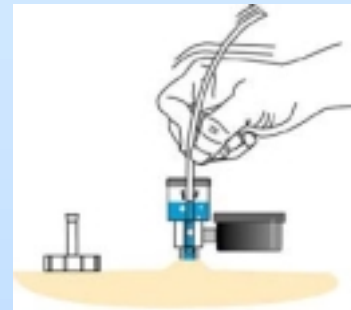
Check to see if there is water in the tensiometer or if the suction has broken due to low water level. Refill with clean water.

A connection could be leaking. Check that the gauge, reservoir and ceramic tip connections are firm and that the 'O' rings have not perished. The gauge could be faulty. Check it and replace if necessary.

➤ Tensiometer does not record the true soil moisture content:

There could be poor contact between the ceramic tip and the soil. Reinstall the tensiometer following the correct procedure.

Air bubbles could be present in the tube or vacuum gauge. Remove air bubbles with a vacuum pump or by inserting a piece of 3 mm tube into the tensiometer tube (Irrimate type) to dislodge bubbles.



The gauge could be faulty. Check and replace if necessary.

➤ Tensiometer requires frequent refilling:

The connection to the ceramic tip could be leaking. Ensure that the connection is firm and 'O' ring has not perished. Check for other seal leaks.

➤ Tensiometer responds slowly to irrigations:

The ceramic tip may be blocked. Remove and check for algae growth or salts. Clean or replace if necessary.

The gauge could be sticking. Tap the gauge to see if the needle moves. Replace the gauge if faulty.

The irrigation system may not be working efficiently. Move the tensiometer to another position in the paddock to confirm the reading.

For more information, please ring your local Rural Water Use Efficiency Officer.

The Rural Water Use Efficiency Initiative is a joint venture between BSES, CANEGROWERS and the Queensland Government through the Department of Natural Resources and Mines.

