

SOILSPEC

TENSIO METER SYSTEM

Suitable for all types of Agriculture

SOIL MOISTURE MONITORING SYSTEM

Water is the single most important requirement for your crops.

Both under and over watering will cause significant reductions in your crop yield. 'It is important to apply the right amount of water at the right time.

It has been demonstrated beyond doubt that effective soil moisture control techniques can generate **considerable** improvements in crop yields. Department of Agriculture reports show yield increases in various crops of 5%, 10%... even upto 50%!!

With yield increases of this size, soil moisture control will give huge increased profits with very little investment. The Soilspec Tensiometer System is an easy to use, accurate and low cost measuring system which will allow you to make informed and accurate decisions about your irrigation.

SOILSPEC can help you achieve maximum yields and profits.

- **EASY TO USE AND UNDERSTAND**
- **INEXPENSIVE TENSIO METER TUBES**
- **NO CALIBRATION REQUIRED**
- **EXTREMELY ACCURATE**
- **ENVIRONMENTALLY BENEFICIAL**

The SOILSPEC tensiometer system is used as a research tool by various Agriculture departments, universities and the CSIRO.



Using SOILSPEC makes
Dollars and Sense!

Both under and over watering cause significant reductions in crop yields:

OVER WATERING

- water logging
- reduced soil oxygen
- increased disease susceptibility
- flushing of nutrients from the soil
- elevation of the water table

UNDER WATERING

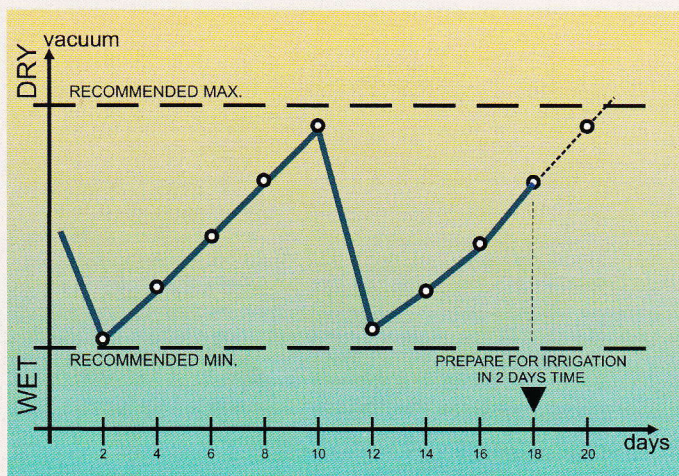
- plant stressing due to lack of water
- reduced fruit size and quality
- reduced seed germination rates
- reduced seedling survival rates

As a farmer, you will need to be able to properly control and optimise the amount of soil moisture available to your crops. This is only possible if you can *accurately measure* soil moisture...

The Soilspec Tensiometer System will give you the answers.

NOW YOU CAN SEE CLEARLY AND ACCURATELY HOW MUCH MOISTURE IS AVAILABLE TO YOUR CROPS AT ANY TIME... WITHOUT GUESSING!!!

Tensiometer tubes are installed in the field, readings are taken and the results recorded regularly. The figures from each tensiometer tube are then graphed to provide a picture of soil moisture over time.



Now that you can measure the soil moisture you can easily and accurately control it.

THE SOILSPEC TENSIOMETER SYSTEM

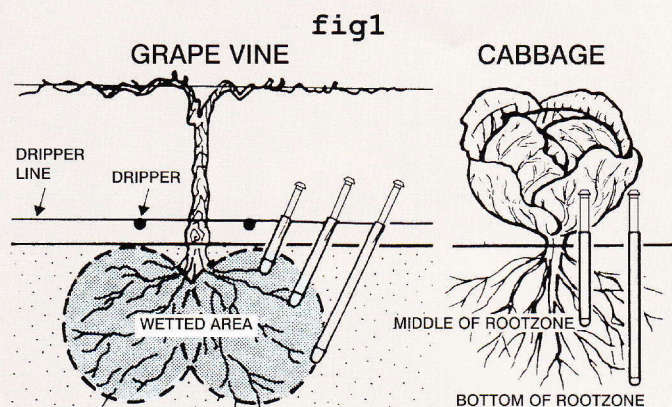
A Tensiometer is a simple instrument used to provide a direct indication of soil moisture levels at any particular point in the soil. It is simple to use, easy to maintain and most importantly, it is a very reliable guide for irrigation scheduling. It is based on the same principal as plants use to extract moisture from the soil.

The SOILSPEC Tensiometer System has two essential parts:

- the Tensiometer tube - an inexpensive sealed tube filled with water, with a porous ceramic tip at the bottom and a rubber stopper in the top, (see fig. 2). This tube is installed in the plant root zone, (see fig.1).
- the gauge - a very accurate electronic vacuum gauge. This is used to take readings from the tubes.

HOW IT WORKS

As the soil dries out, the surface tension of the moisture in the surrounding soil attempts to draw the water out of the tube through the porous ceramic tip. However, because the tube is sealed with a rubber stopper, the water cannot escape. This creates a suction in the air space at the top of the tube. When irrigation or rainfall occurs, the suction decreases. A high vacuum or suction reading on the gauge indicates that the soil is dry at and around the ceramic tip, and a low reading shows that the soil is moist.



In general a complete monitoring system will consist of a number of monitoring sites around the area to be irrigated. Each site would have two or three tubes of different lengths, (See fig1), situated at the top, middle and bottom of the root zone. This not only allows the monitoring of soil moisture at a number of depths at each site, but also shows, from the graphs, the movement of the moisture through the soil during the irrigation cycle.

The SOILSPEC system requires very little maintenance and will provide years of reliable service. The SOILSPEC electronic gauge requires no periodic calibration or zeroing prior to use. Tensiometers in the field are read and the results recorded regularly. The figures from each tensiometer tube are then graphed to provide a picture of soil moisture.

THE SOILSPEC TENSIOMETER SYSTEM HAS THE FOLLOWING ADVANTAGES

- only one accurate gauge is needed to read all tensiometer tubes. This eliminates the errors of having individual mechanical gauges on each tube.
- readings are more accurate and consistent than with mechanical gauges
- the handheld gauge is stored in a safe place away from harmful heat, frost and UV radiation.
- inexpensive tubes. This means that a large number of tensiometer sites can be set up at a reasonable cost. It also reduces maintenance and replacement costs in case of breakage or theft.
- tubes are made from UV resistant plastic.
- other systems show the percentage moisture in the soil but depending on the soil type, much of this moisture may be inaccessible to your plants. Tensiometers give a direct indication of how difficult it is for you plants to draw moisture from the soil - regardless of the soil type.

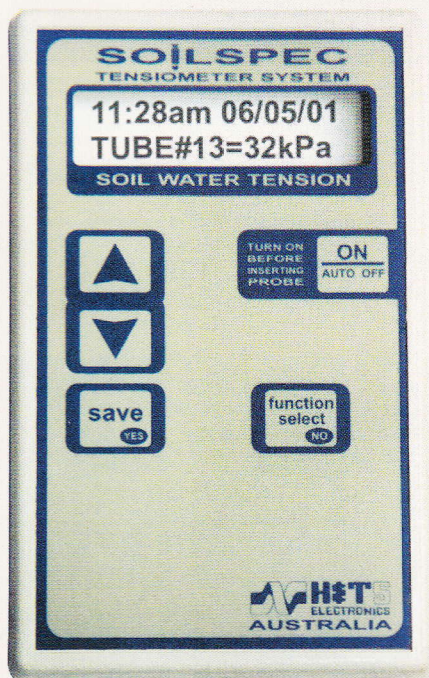
Most horticultural consultants, agronomists or members of your local irrigation water supply authority are experienced in the use of tensiometers and the interpretation of the readings taken from them.

Tubes are available in a range of standard lengths from 15 to 90cm. However, special lengths can be ordered to specific customer requirements.

The SOILSPEC Gauge

The Gauge is available in two models:

COMPUTER GAUGE Model SST102G



This simple to use gauge will store the tensiometer readings in its memory, along with a tube identification number, time and date. The SST102G gauge comes complete with the **MoisturePLOT V2** program for the PC. This allows the gauge readings to be easily downloaded, stored and viewed as graphs. The program has been designed to be especially easy to use. It will store the data from the gauge, and display and print graphs for each tensiometer site (group of tensiometer tubes). A lot of emphasis has been placed on making this gauge and computer program easy to use for farmers like yourself, without the need to read large instruction manuals. (See back page for details).

THE MAIN FEATURES OF THE ELECTRONIC GAUGE

1. easy to use and understand.
2. rugged solid state design with no sensitive moving parts.
3. electronic design makes the gauge very accurate.
4. the gauge zeros itself automatically every time it is switched on.
5. clearly visible display - the gauge displays, words and numbers, this makes it easier to read and understand eg. VACUUM=30kpa
6. automatically turns off after approx 5 minutes. This eliminates flat batteries caused by forgetting to turn the unit off.
7. battery indicator - checks the battery every time the unit is turned on and gives an audible and visual warning if the battery requires replacement.
8. requires only one 9 Volt Alkaline battery which will normally last in excess of 12 months.
9. uses standard and readily available hypodermic needles which are easily replaced.
10. comes complete with its own rugged carry case.
11. the SOILSPEC Tensiometer System is manufactured in Australia by: H&TS Electronics Australia P/L. and comes with a 12 month Warranty.

STANDARD GAUGE Model SST101G



This inexpensive unit is used for taking tensiometer readings which can be noted and graphed manually.

**SOILSPEC Tensiometer System is
designed and manufactured by:**

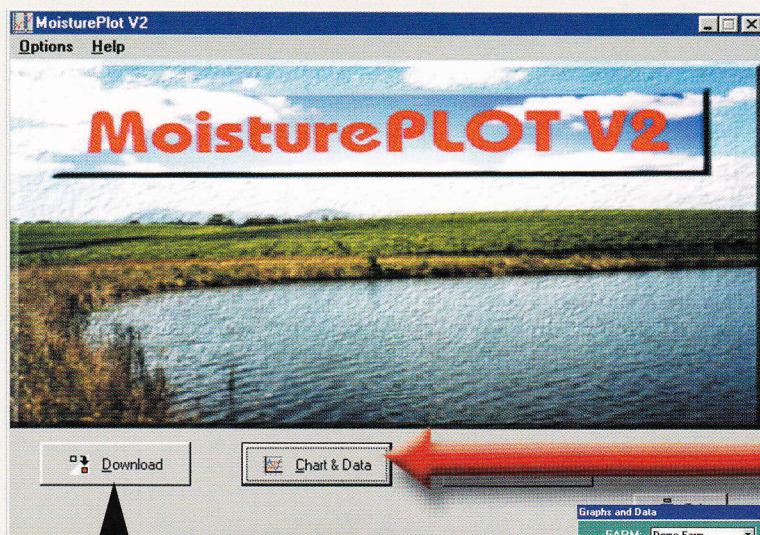


soilspec.com.au

*If you would like a copy of the FREE Soilspec video which shows you the
benefits of soil moisture monitoring & how to use the Soilspec System,
please contact your nearest distributor or contact:*

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2/19 HUNTER ROAD
Healesville AUSTRALIA 3777
Ph: (+61 3) 59625211
Email: soilspec@tksystems.com.au

The **MoisturePLOT V2** Program



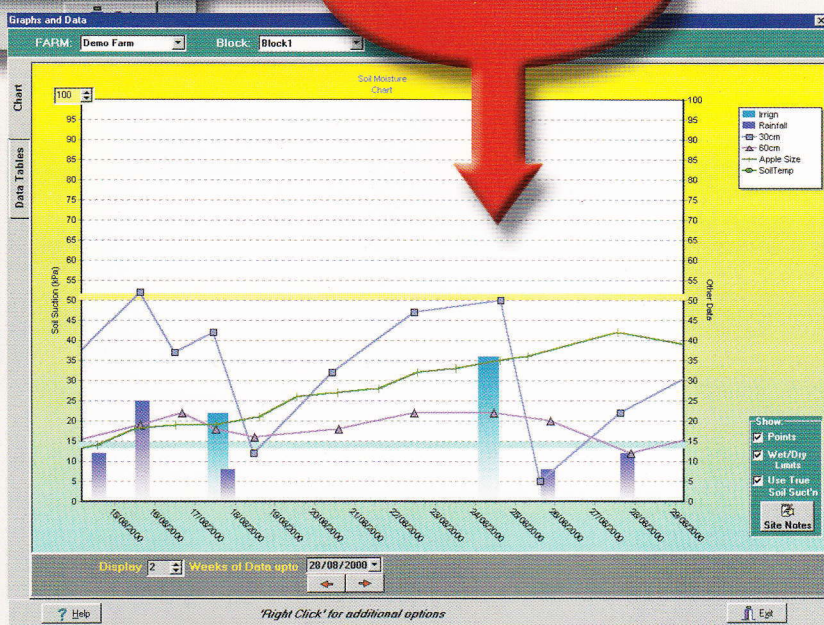
Simple to use

Easy to understand

**CLICK HERE
TO DISPLAY GRAPHS**

**TO DOWNLOAD THE TENSIO-METER
AND RAINFALL READINGS YOU
HAVE COLLECTED WITH THE
SOILSPEC COMPUTER GAUGE,
CONNECT THE GAUGE TO THE
COMPUTER WITH THE CABLE
SUPPLIED AND THEN **CLICK HERE**.
SIMPLE!!**

**Graphs show Soil moisture, Rainfall,
Irrigation and 3 additional charts
which you can use to show other
information you collect such as fruit
size, sugar content, evaporation etc.**



This program has been developed specifically for use with the Soilspec Tensiometer System.
It is extremely easy to use and understand, even for computer newcomers.
There is no need to read a large instruction manual.

The **MoisturePLOT** program has two main functions:

1. To provide a means of displaying soil moisture and other data that you have collected on a graph.
This makes it very easy to interpret soil moisture and crop data at a glance.
2. To provide an easy and convenient way of collecting and storing a history of your irrigation practices over several seasons.

If you need to seek the advice of an agronomist about your crops, the agronomist can look at the **MoisturePLOT** data you have collected and make decisions about your irrigation practices with the assurance that the data is accurate and up to date.

www.soilspec.com.au

AVAILABLE FROM: