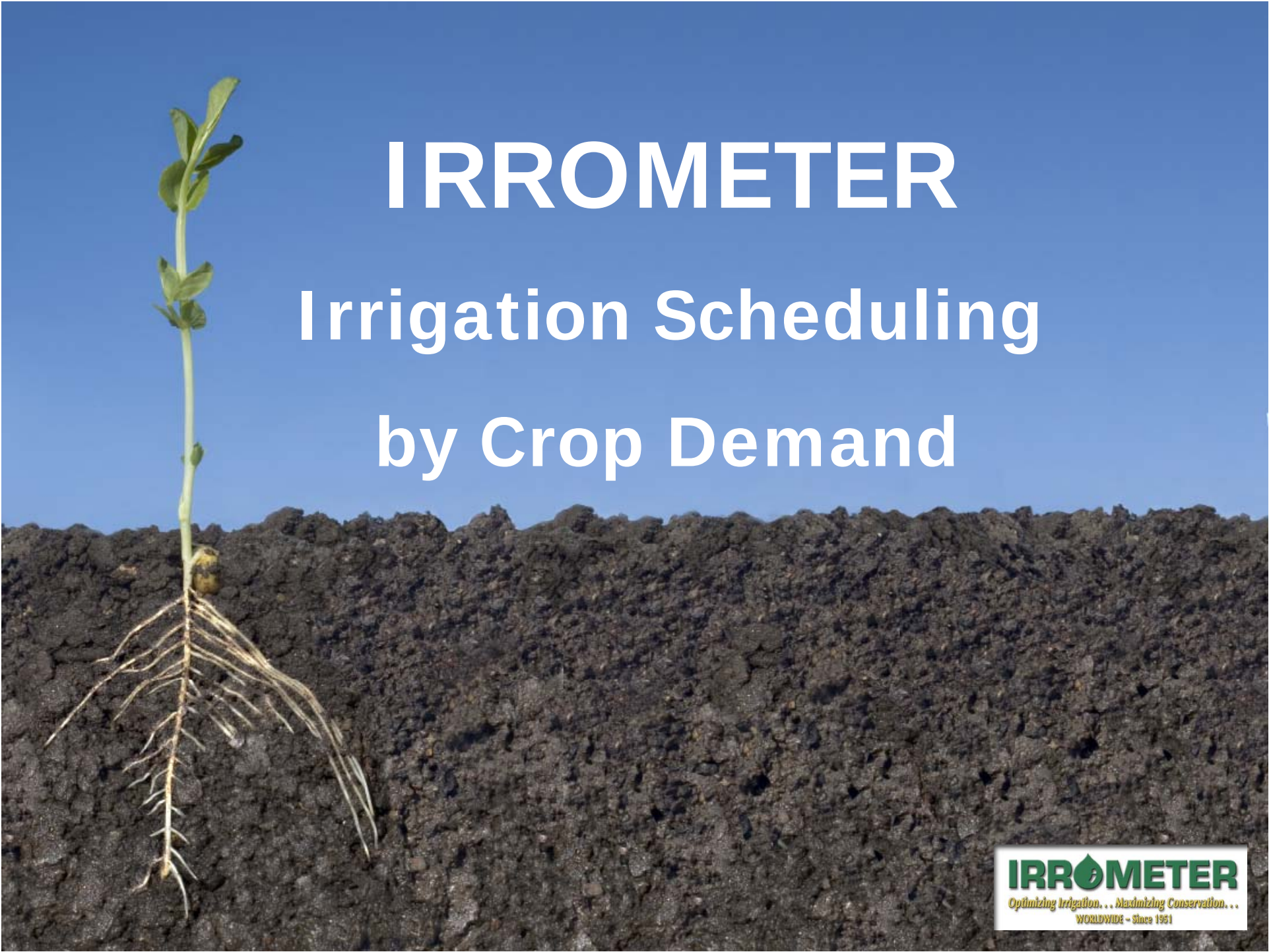




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Irrigation Scheduling by Crop Demand

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Irrigation Scheduling Methods



Tradition Method



Calendar Method



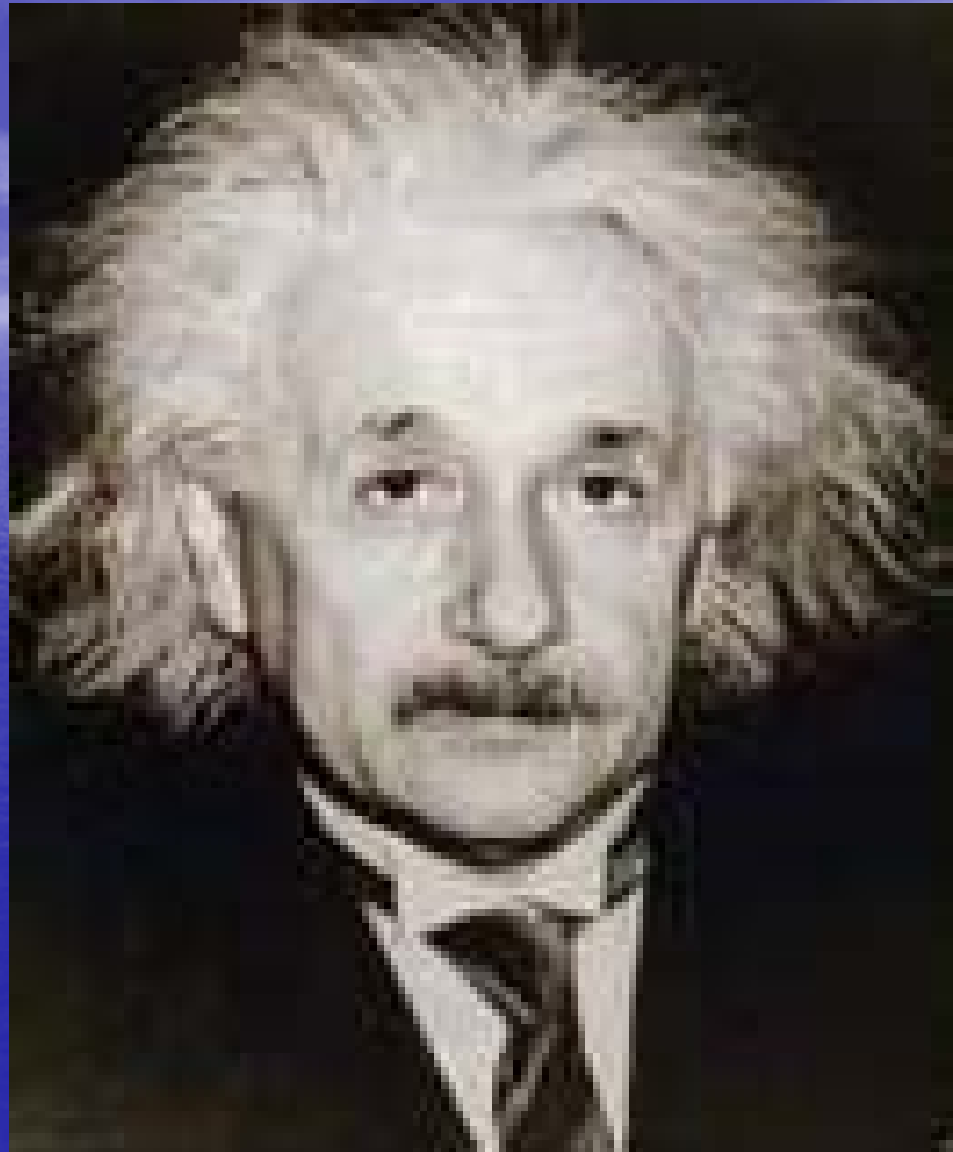
Observation Method



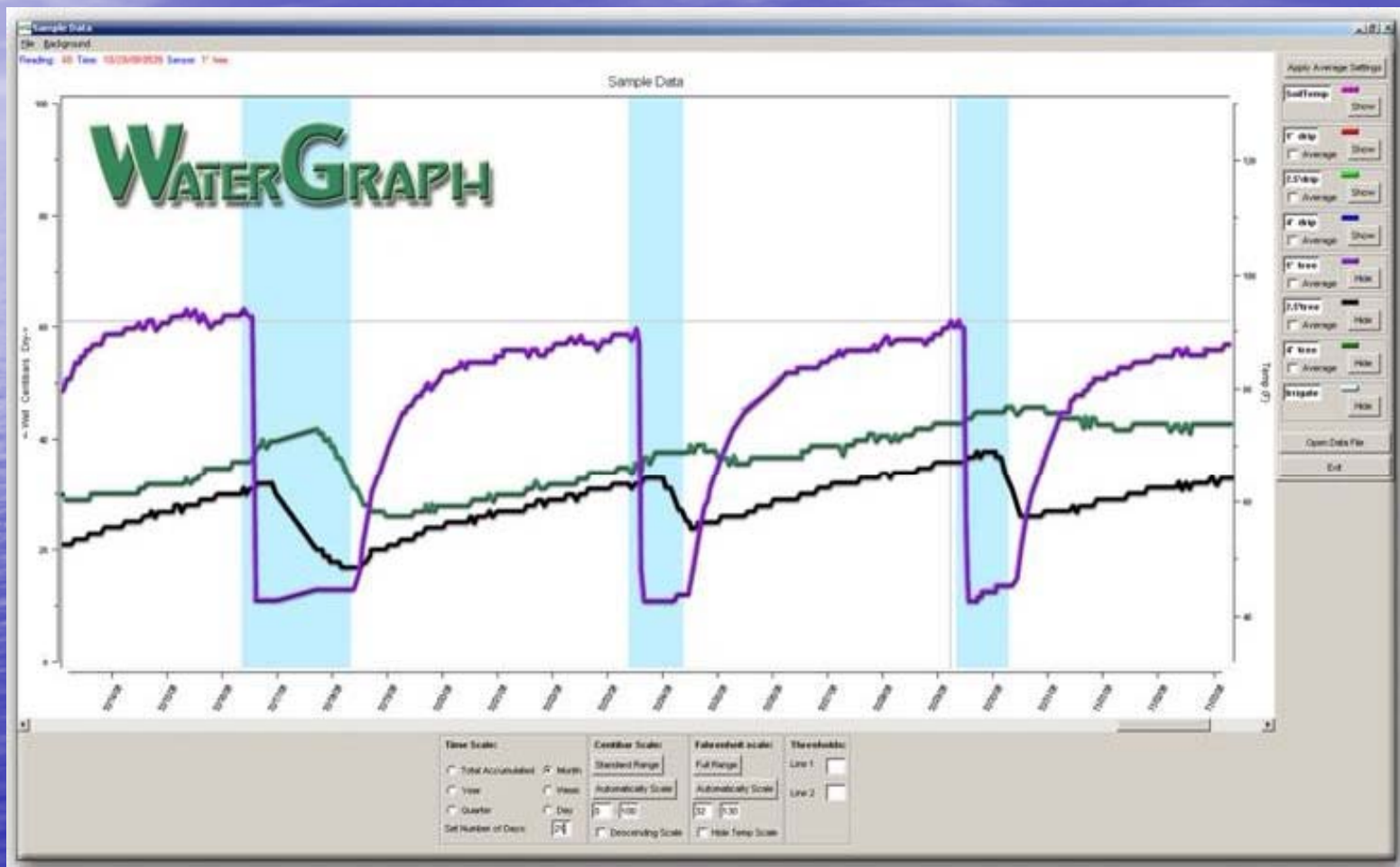
Feel Method



Scientific Method

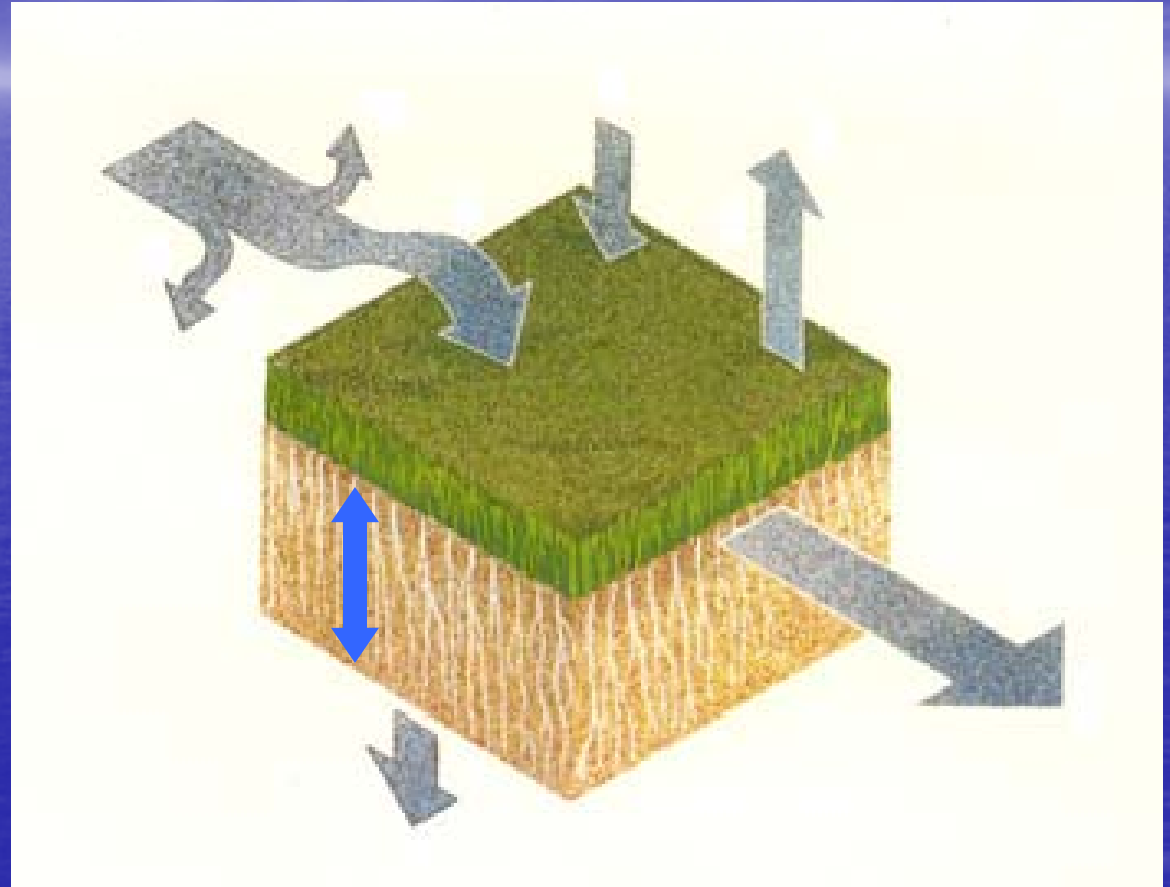


Demand Method



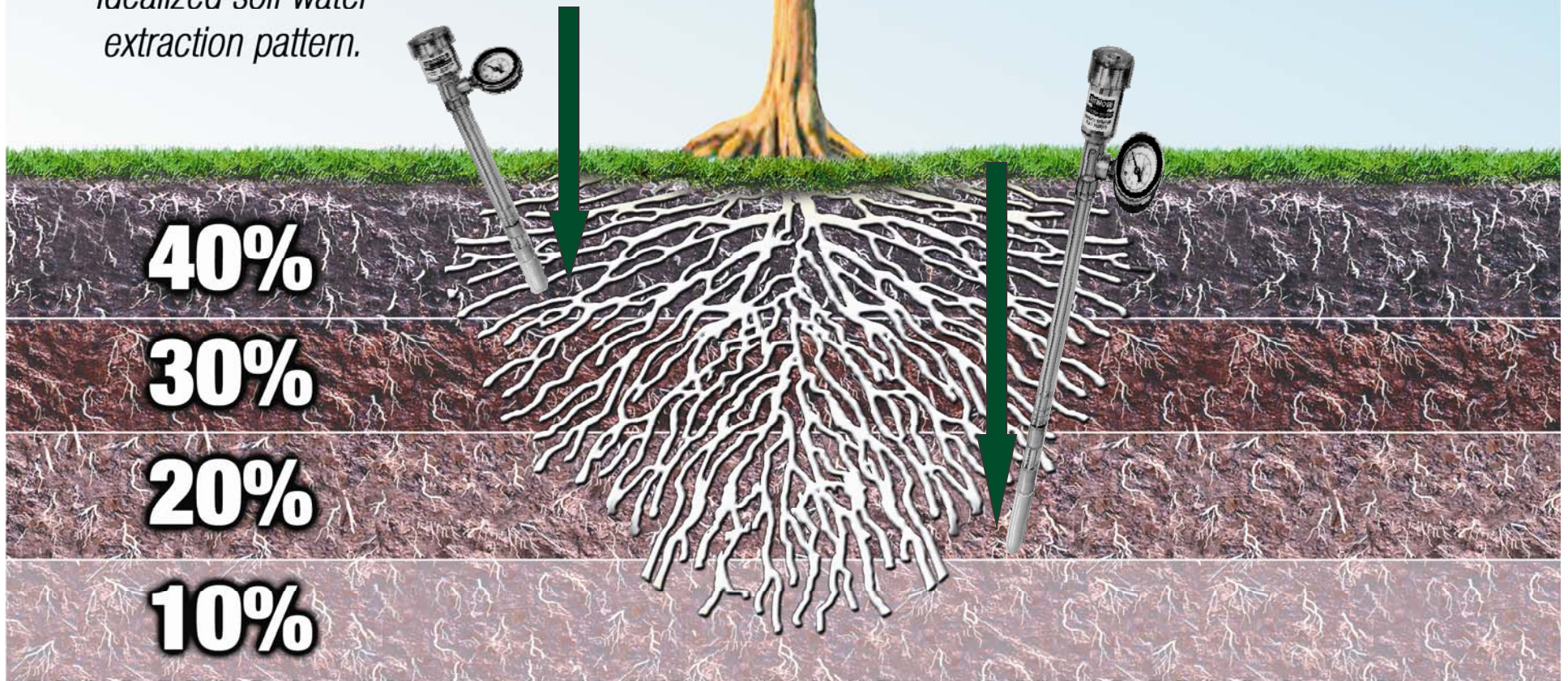
Where Does The Water Go?

- 💧 Run-off
- 💧 Evaporation
- 💧 Deep percolation
- 💧 Root Zone.



Water Extraction Chart

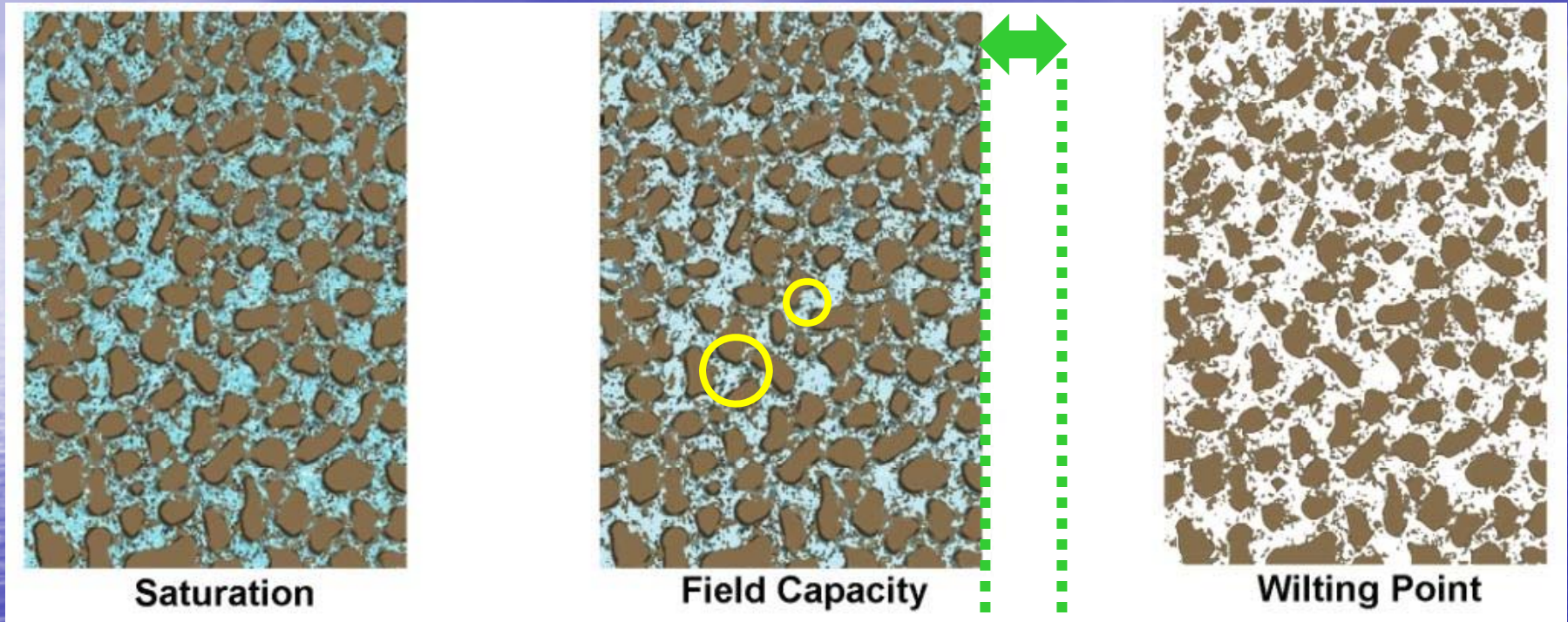
*Idealized soil water
extraction pattern.*



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Water Holding Capacity

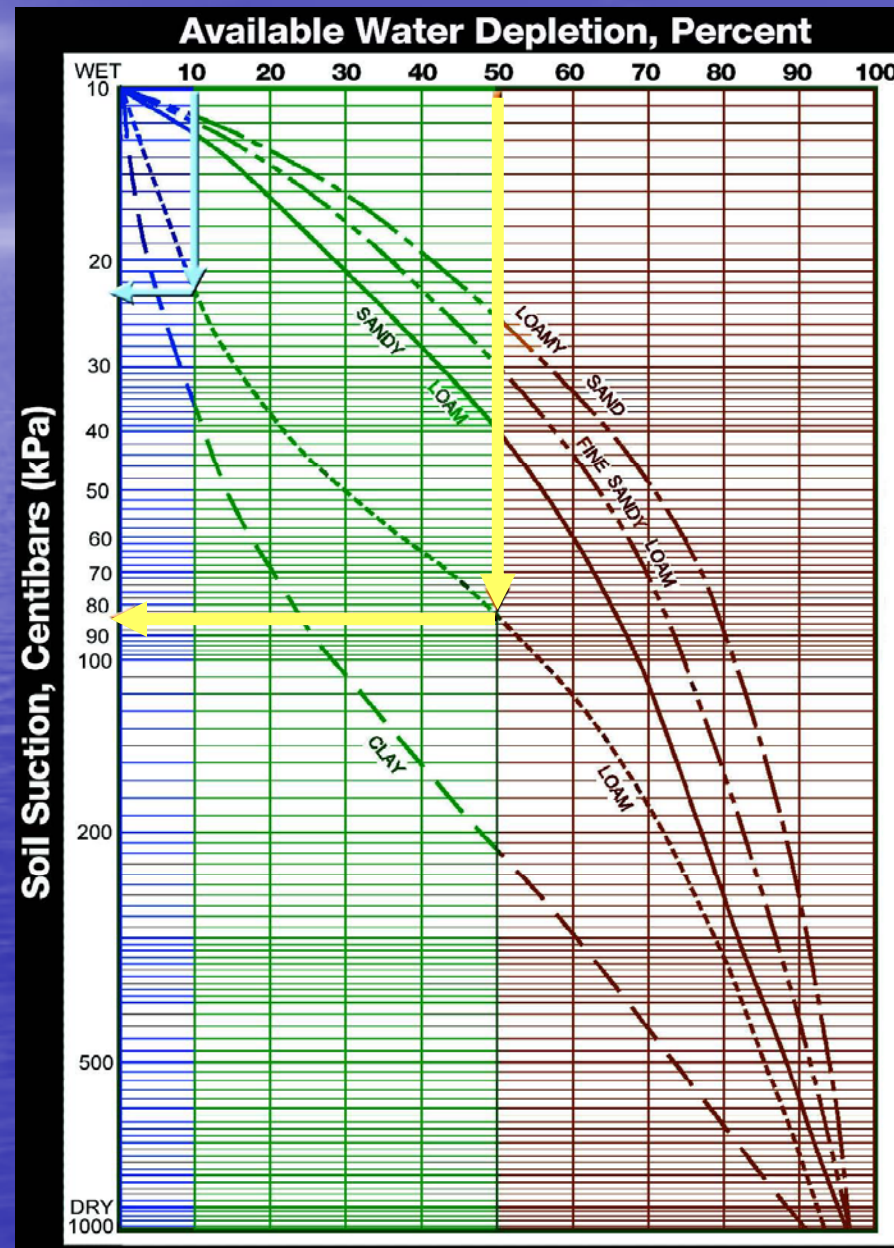


FC

50%
MAD



Agronomy Journal Water Retention Curves



Loam soil
50% depletion
85 cb

What Is

SOIL WATER TENSION?

Big Gulp Principle



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Low Soil Water Tension

High level of soil
moisture means
a low level of
root suction



High Soil Water Tension

Low level of
soil moisture
means a high
level of
root suction



Field Capacity

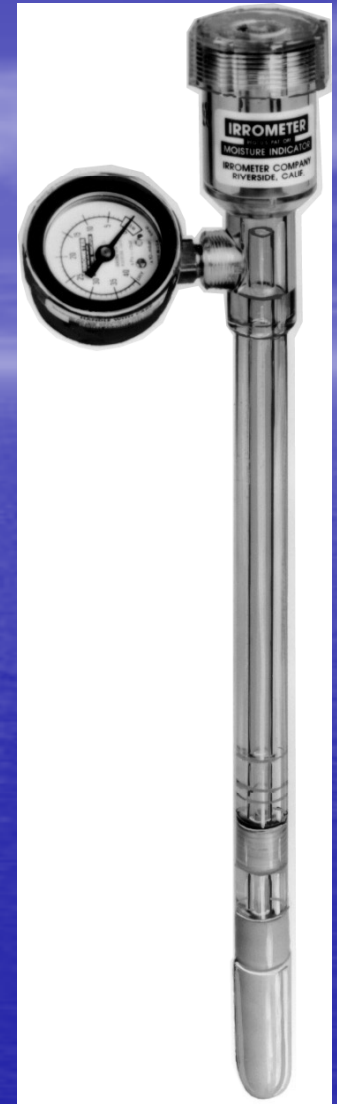




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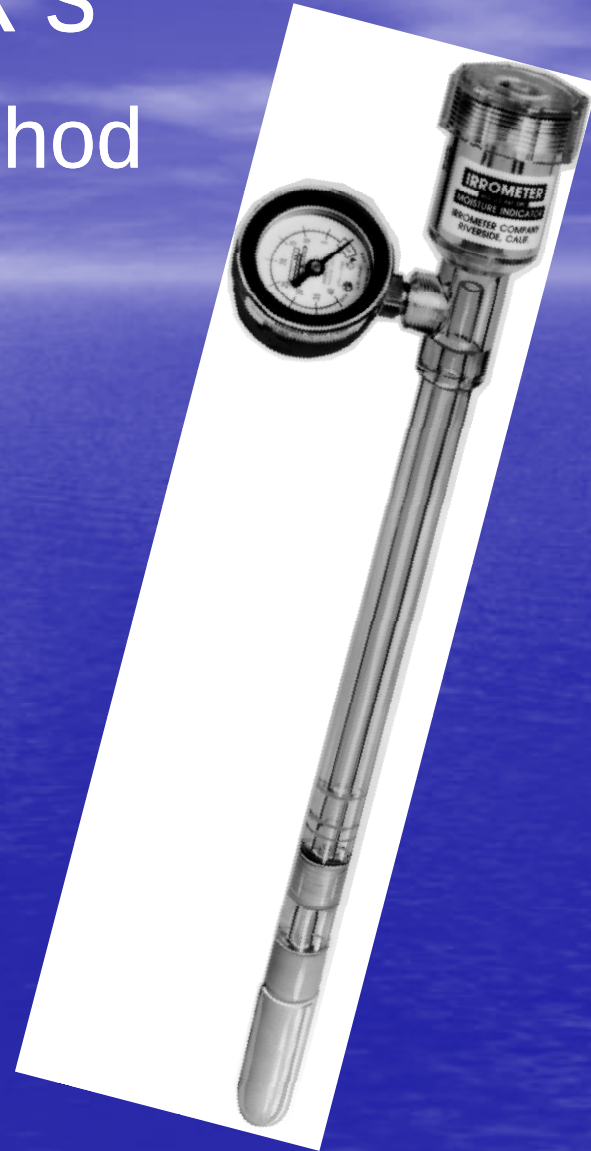
Technology Options

- 💧 Two sensor types
- 💧 Manual data collection
- 💧 Automatic data collection
- 💧 Remote data collection
- 💧 Automation.



IRROMETER's

- 💧 Tensiometer/direct method
- 💧 Not affected by:
 - 💧 Water quality
 - 💧 Soil temperature
 - 💧 Soil types
- 💧 Simple & reliable
- 💧 Manual or automatic
- 💧 Control Systems.

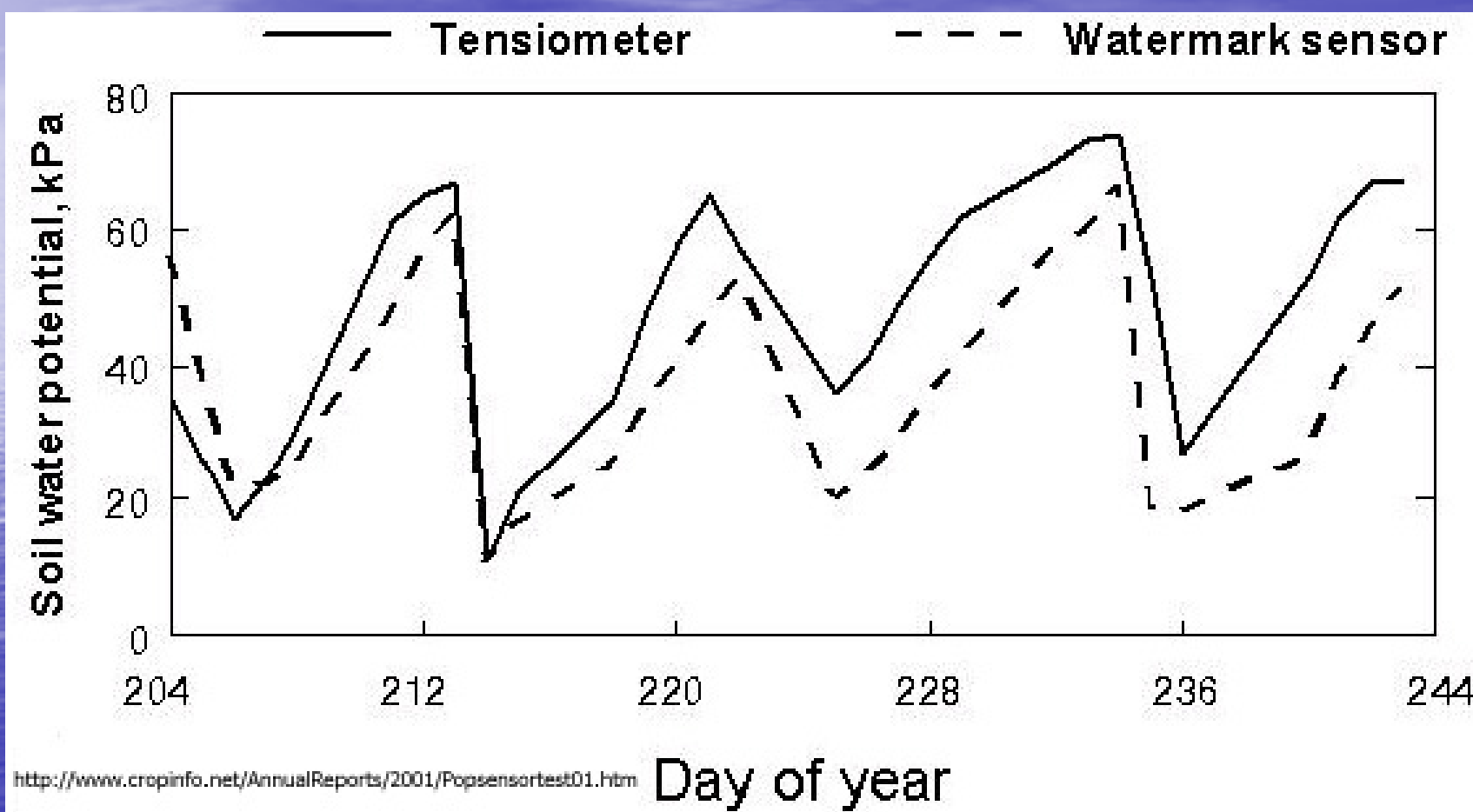


WATERMARK Sensors

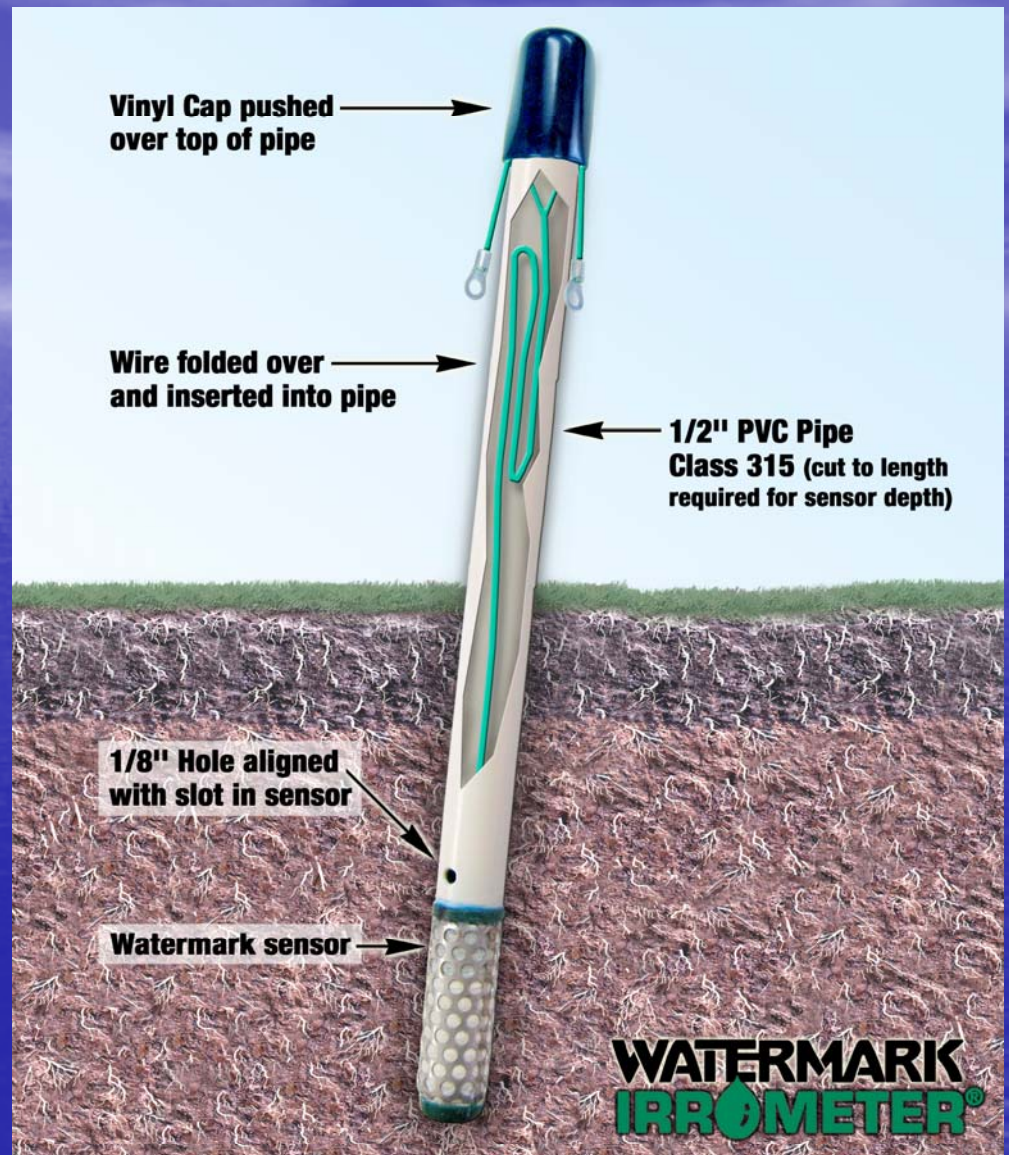
- 💧 Low cost
- 💧 Works in most soils
- 💧 Indirect method
- 💧 Salinity buffering
- 💧 No freezing
- 💧 Soil temperature
- 💧 Manual or Automatic
- 💧 No maintenance
- 💧 Stable proven calibration.



WATERMARK = Tensiometer?

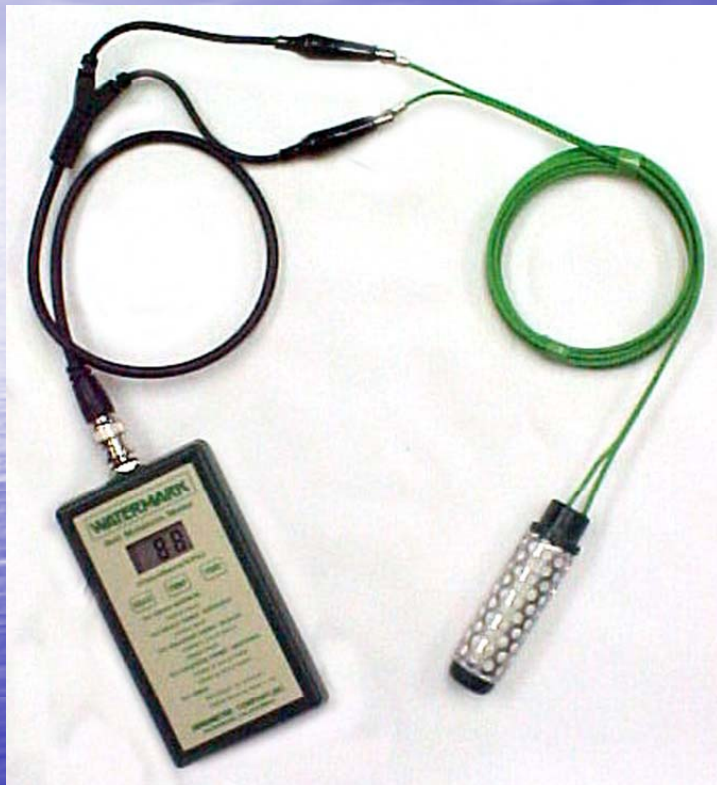


WATERMARK “on a stick”



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Handheld Meter Reading



Automatic Data Collection



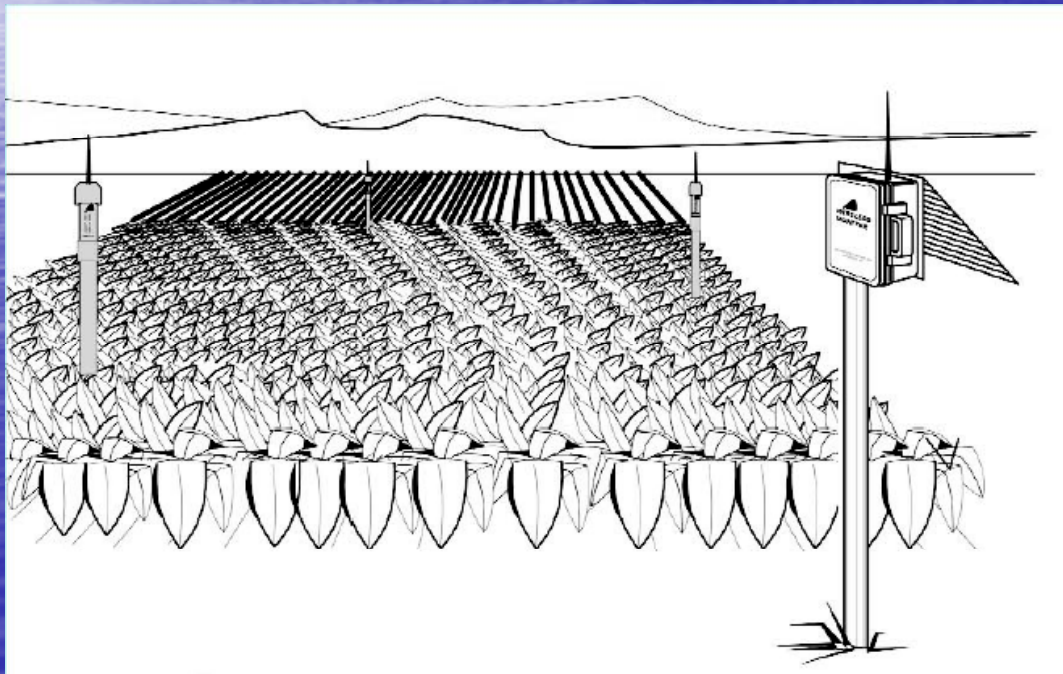
900 Monitor

- 💧 8 Sensor Inputs
- 💧 Sensors wired directly
- 💧 User Programs reading intervals
- 💧 9V battery powered .



950 Wireless Monitor

- 💧 64 sensor inputs
- 💧 Eliminates field wiring
- 💧 Saves installation time
- 💧 1500 ft. (457 m) range.



Remote Data Access

- 💧 Brings data to user
- 💧 Long Range Radio
- 💧 Cellular Gateway
- 💧 Satellite Modem
- 💧 Battery power with solar charging.



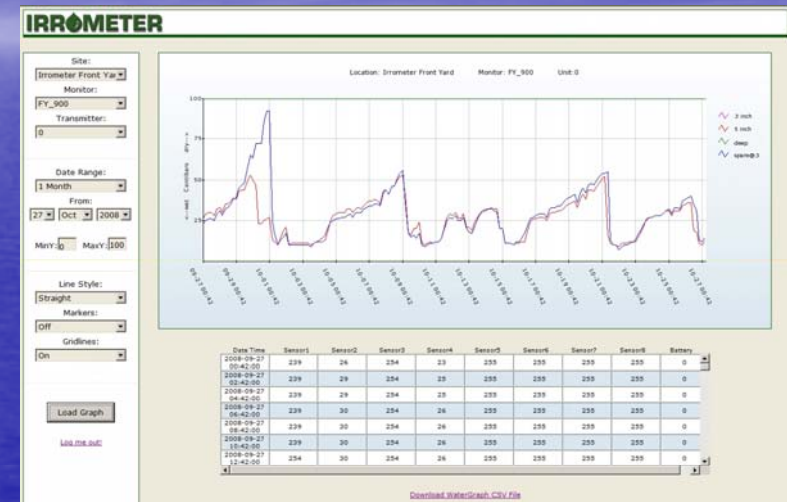
Web Based Services

- 💧 Users can view data on any Internet connected computer
- 💧 Web Reporting Service (WRS)
- 💧 Cellular Data Service (CDS)
- 💧 Satellite Data Service (CDS).



WEB Based Data Display

- 💧 Data automatically collected
- 💧 Password protected
- 💧 Worldwide access to data.



Sounds great...
but how much does it cost?

Senor Placement

- 💧 Two sensors placed at different depths = one sensing station
- 💧 One sensing station per 10-20 acres
- 💧 60 acre field.



Sensor Placement



Cost per Acre Over Five Years

(Monitoring 60 acres with a five year product life)

\$ IRROMETER instruments = \$2.23

\$ WATERMARK's with Hand-held
Meter = \$1.81

\$ WATERMARK's with 900 Monitor
(wired) = \$2.21

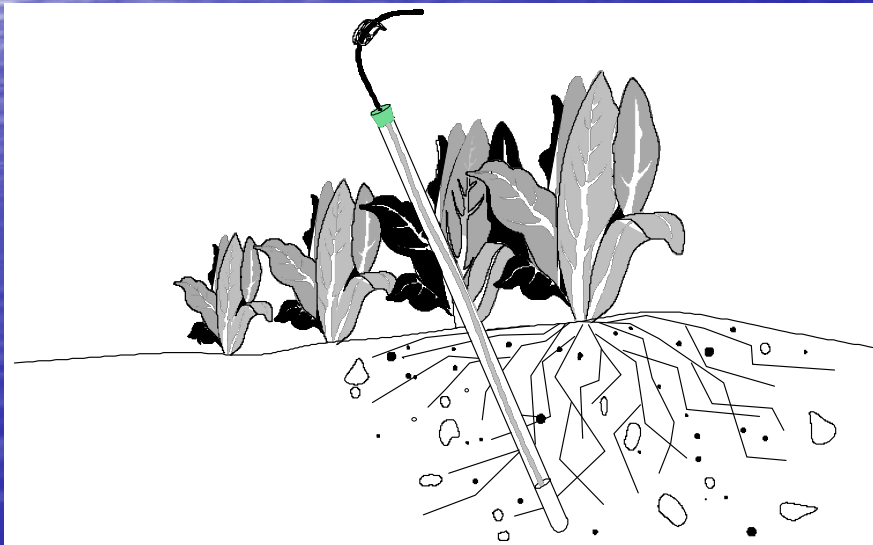
\$ WATERMARK's with 950 Wireless
Monitor = \$5.67.

How much does it cost?

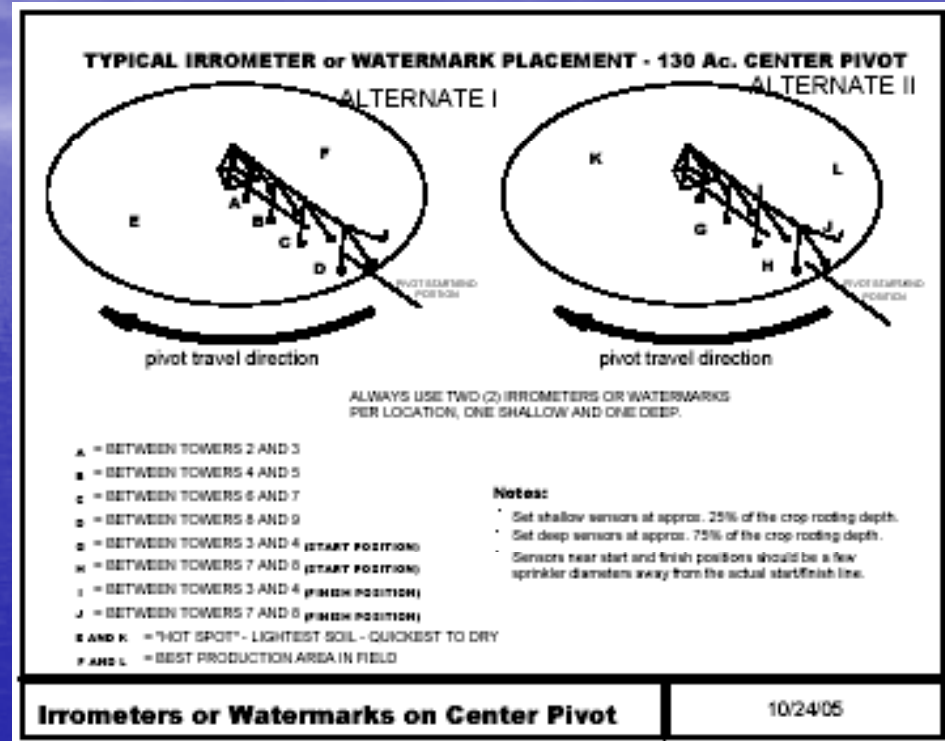
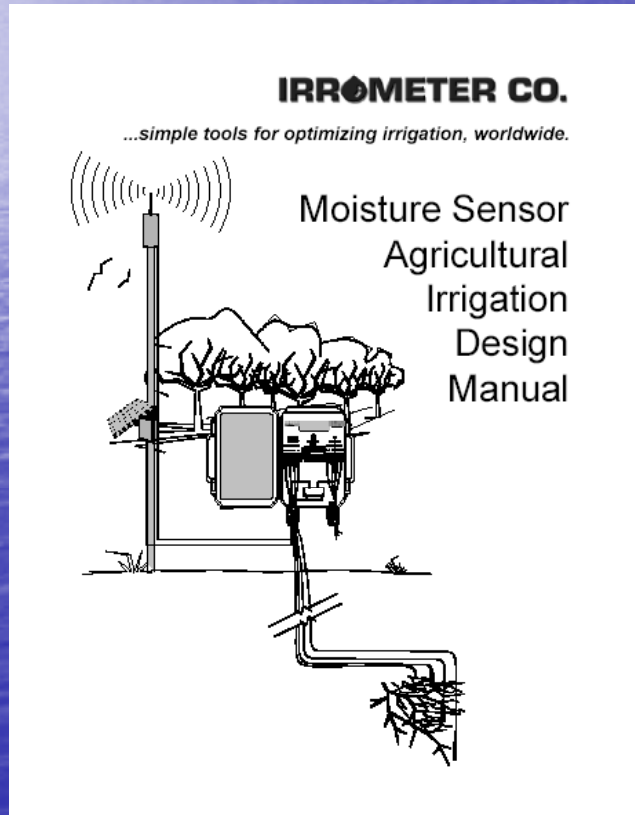
**The real question is how much
are you going to save?**

Soil Solution Access Tube (SSAT)

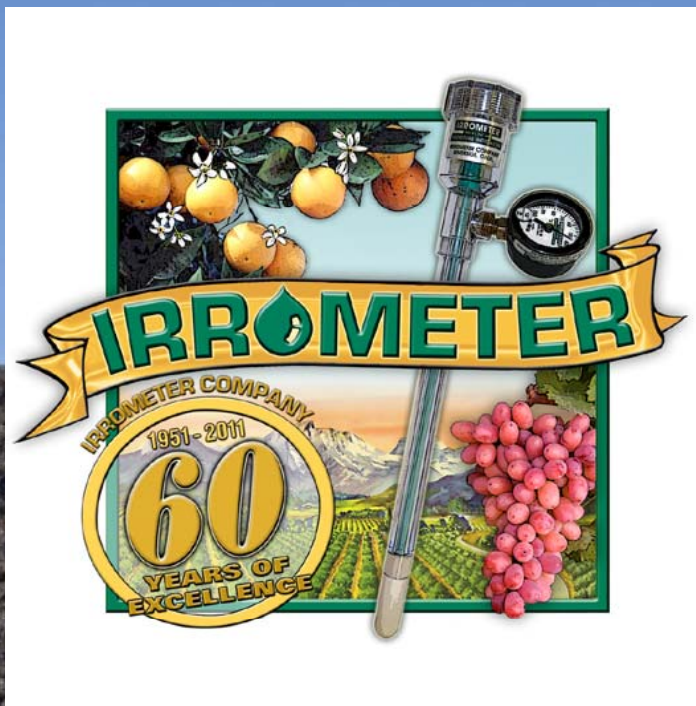
- 💧 Collect soil water samples
- 💧 Simple
- 💧 Inexpensive.



Agricultural Design Guide



Questions?



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