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Agricultural Intelligence

Precision Agriculture • Soil Moisture Monitoring • Drainage Planning • Irrigation Support
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Soil moisture monitoring

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Soil moisture sensor technology

- Capacitance probes
- Tensiometers
- Weather stations etc

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Why go down this path?

- Tell me when to irrigate
- Help me use less water
  - Water-use efficiency

Irrigation scheduling

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Understanding your soil/plants/water relationship

- Root depth and architecture
- Where is water being utilised
- Greater understanding soil limitations
- What goes on isn't necessarily what goes in
- Paddock variability

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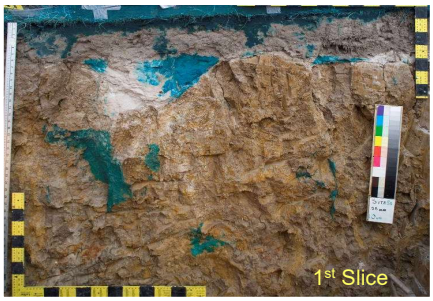

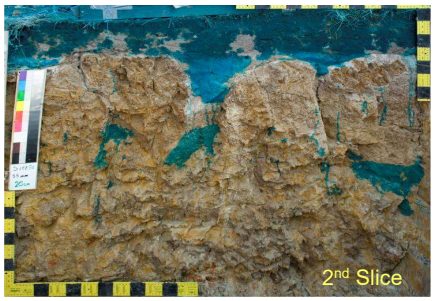

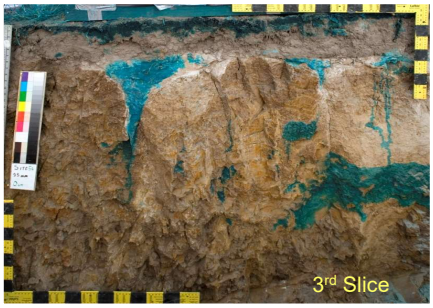

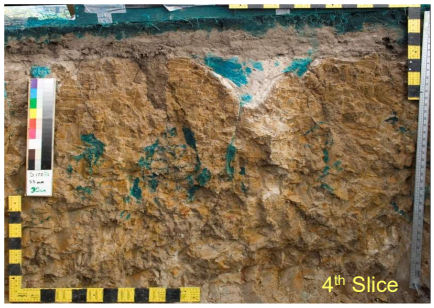

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Risk mitigation

- Getting too wet
  - Disease
  - Rot
  - Management issues
  - Production issues
- Club root
- White blister
- Mildews

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System capacity validation

- Is it doing what it says it's doing?
- Does your system capacity match your soil capacity?

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Irrigation Scheduling

- When?
  - Crop stage dependant
- What amount?
  - System dependant
  - Soil capabilities
  - Seasonal variation
- Why?
  - What is your end goal?

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"The probe says it's dry but my paddock is wet"

"It's not showing my last irrigation"

"It's not showing me what I expect to be seeing"

"Your probe is broken"

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Key things to consider

- Robust and reliable equipment
  - Accuracy is secondary
  - You get what you pay for
- Good installation
- Easy access to data
- Easy to read and interpret data

- Paddock location

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Probe location – where do I put it?

- What questions do you want answered?

- Soil type
- Topography
- Paddock variability
- Potential soil issues
- Span/sprinkler location

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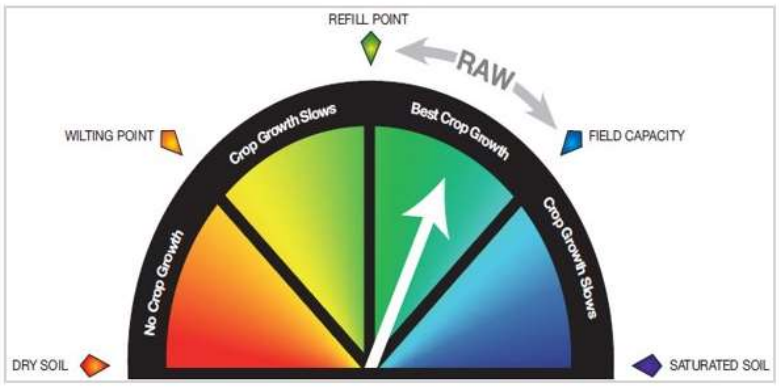
Plant available water vs. readily available water



Understanding Yield Gaps and Irrigation Scheduling (D.McLaren, TIA)

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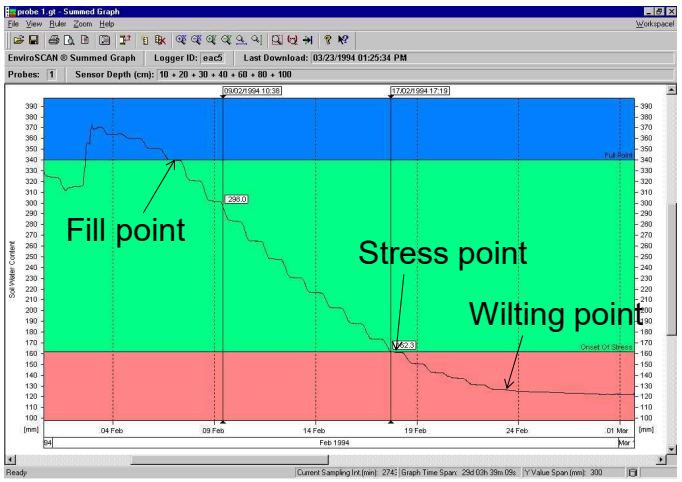
Soil water terms in graph form



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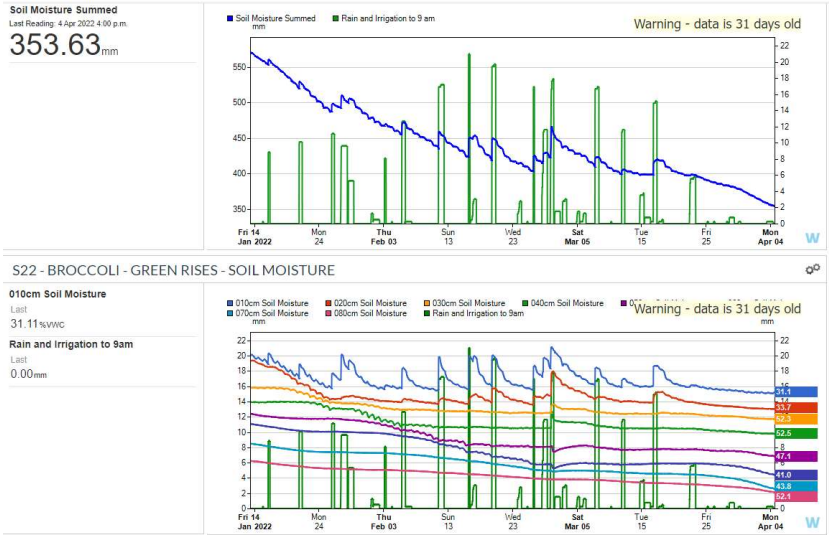
Textbook soil water uptake



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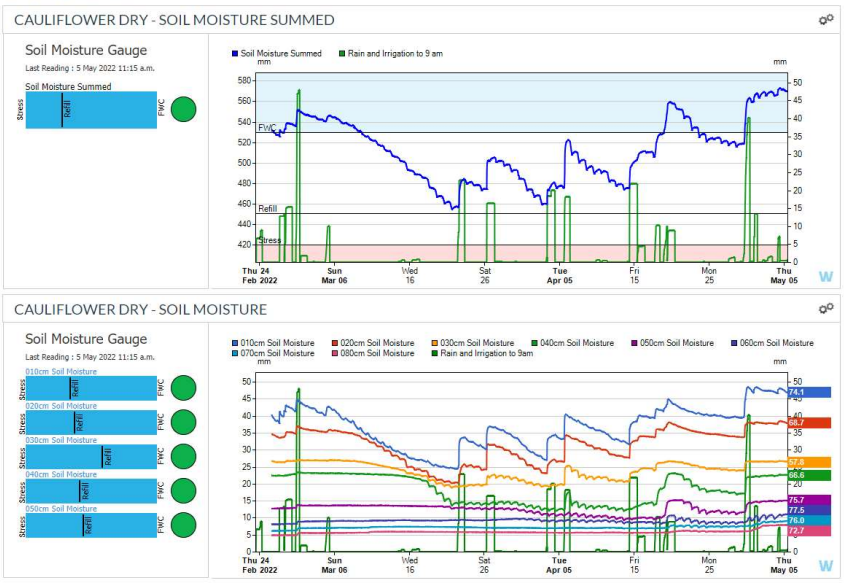
CAULIFLOWER DRY



- Summed graph
- Stacked graph
- Data interface enables quick and interpretation of the data
- Simple or complex as you like

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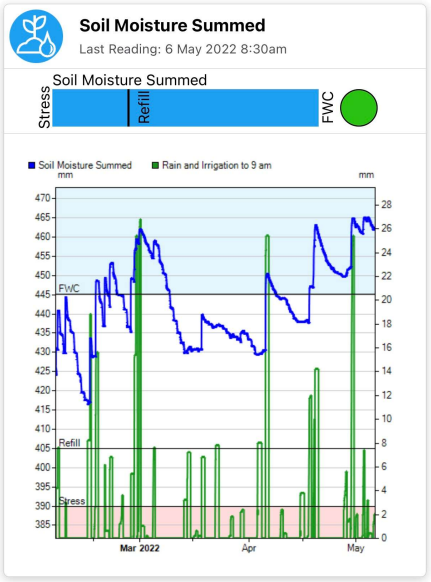

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COMBINED

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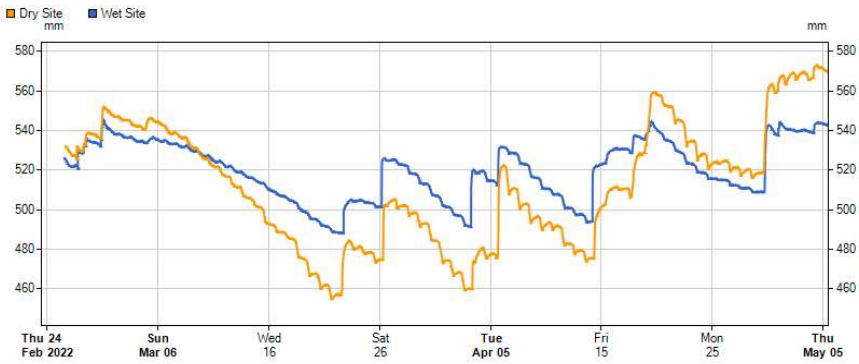

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Key takeaways

- Does not take the place of current tools and techniques
- Just another tool to help with your decision making
- It is not a step to autonomy but a step to greater understanding

- **Dig more holes and dig deeper**

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