



North Australian Cut Flower Group

PO Box 2207

Palmerston NT 0831

Ph: (08) 8988 1587

Fax: (08) 8988 1149

www.cutflowers.net.au

Water Research Field Day

16 April 2010

An initiative of the Cut Flower Group of the NT Horticultural Association
Funded by the Dept. of Agriculture, Forestry and Fisheries

Objectives

1. To improve water use efficiencies within the North Australian Cut Flower Group by identifying best water practices;

Project 1.

- Accurately determine crop water requirements
- Identify best irrigation delivery systems for different crops
- Determine watering use efficiencies with regard to quality and productivity

Project 2

- Identification of root zone and possible deep drainage environmental impacts

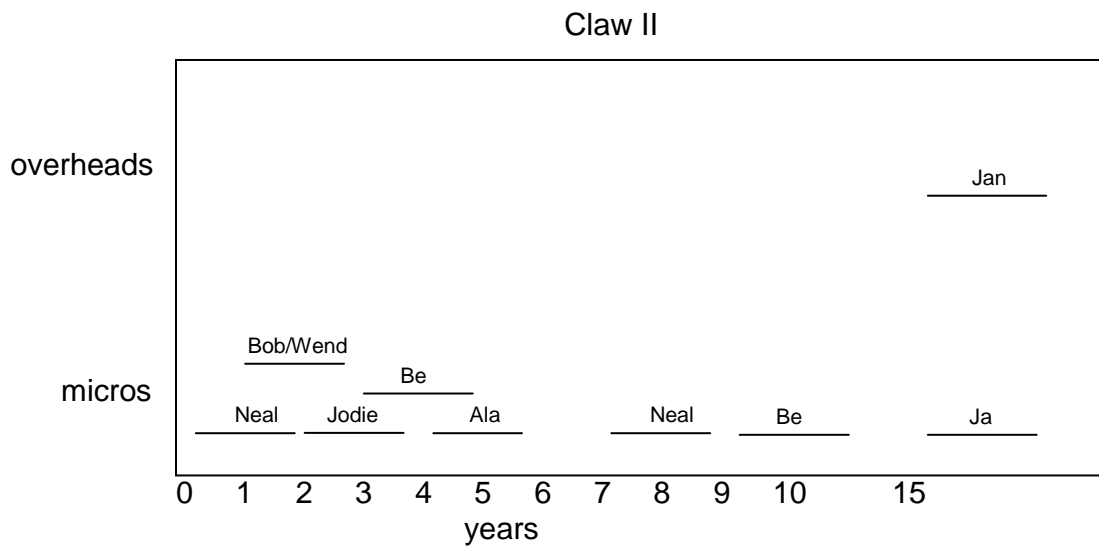
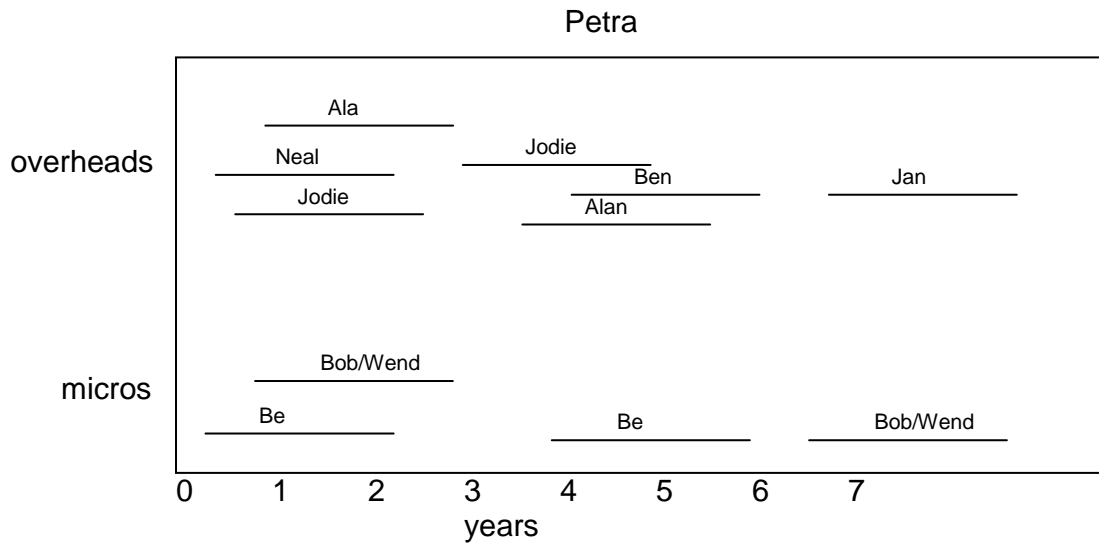
2. Promote “best irrigation protocols” to industry members and the wider horticultural industry to enhance knowledge of water usage, and create “knowledge-based” irrigation systems rather than irrigation by “gut feeling”.

3. Measure knowledge uptake by industry over the project period, including changes in irrigation output, infrastructure and the use of water management technology.

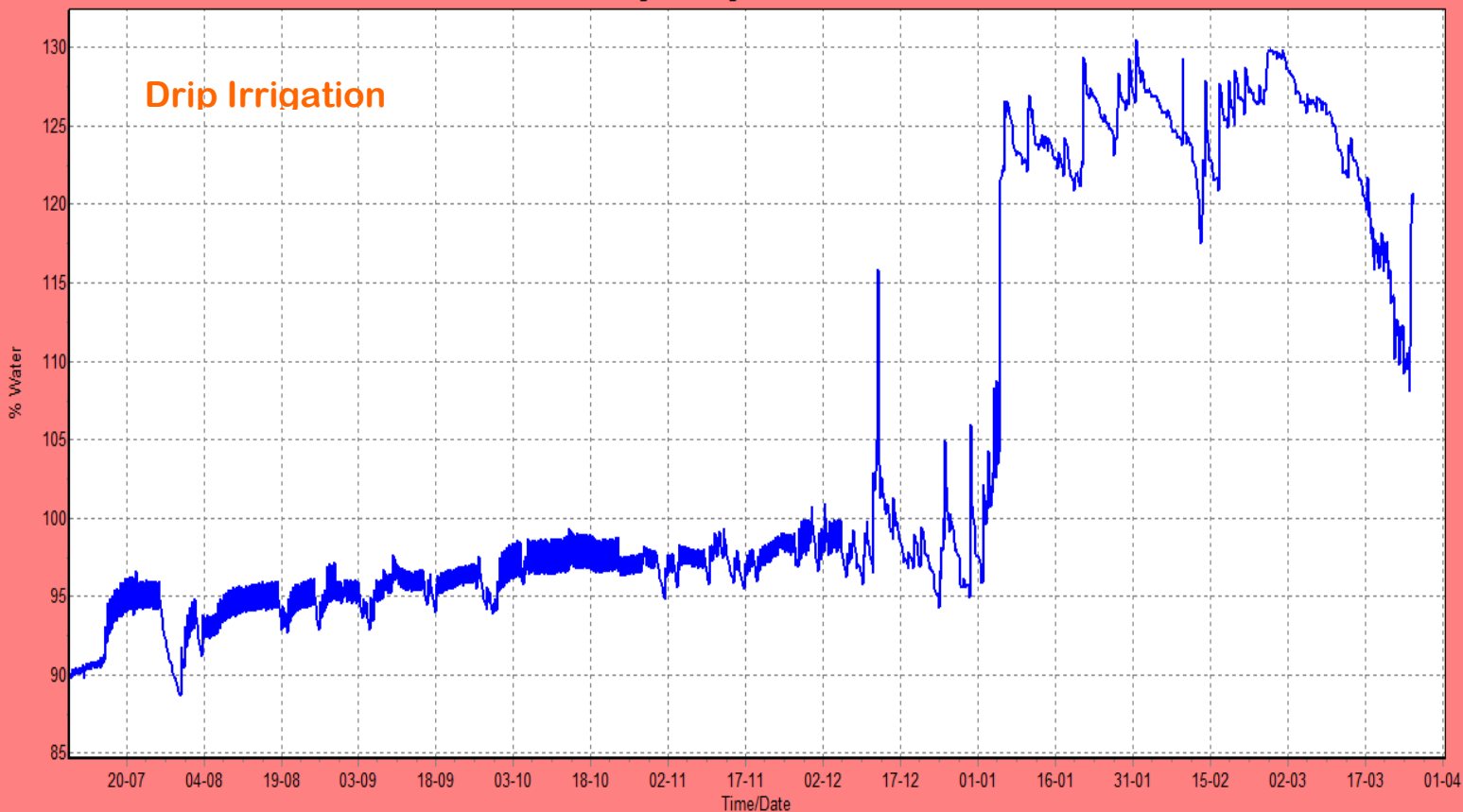
Determination of Historic, Current, and Final water use (volume and infrastructure)

4. Promote project outcomes to the wider public

Water use and flower productivity study design

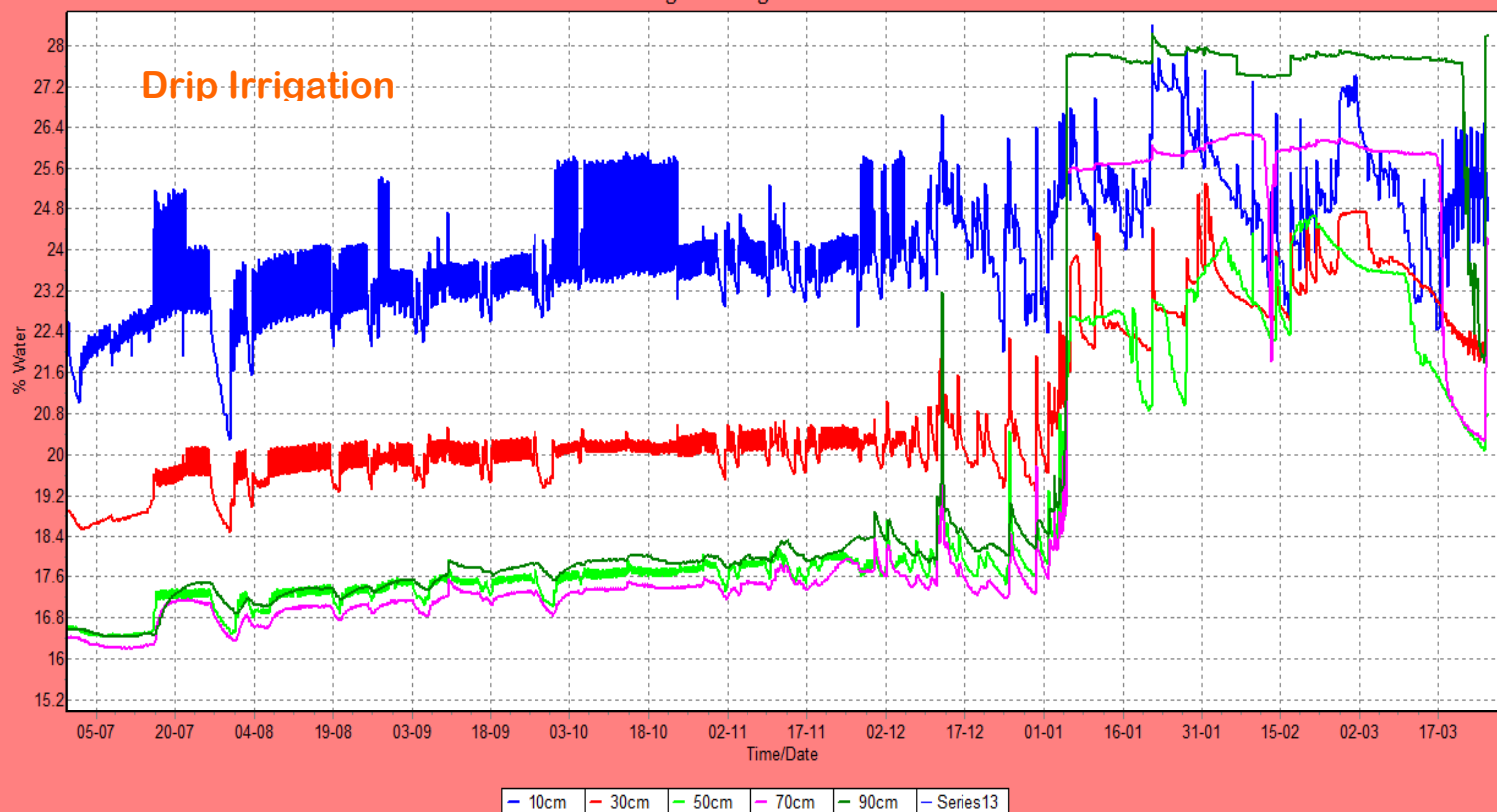


Drip Irrigation

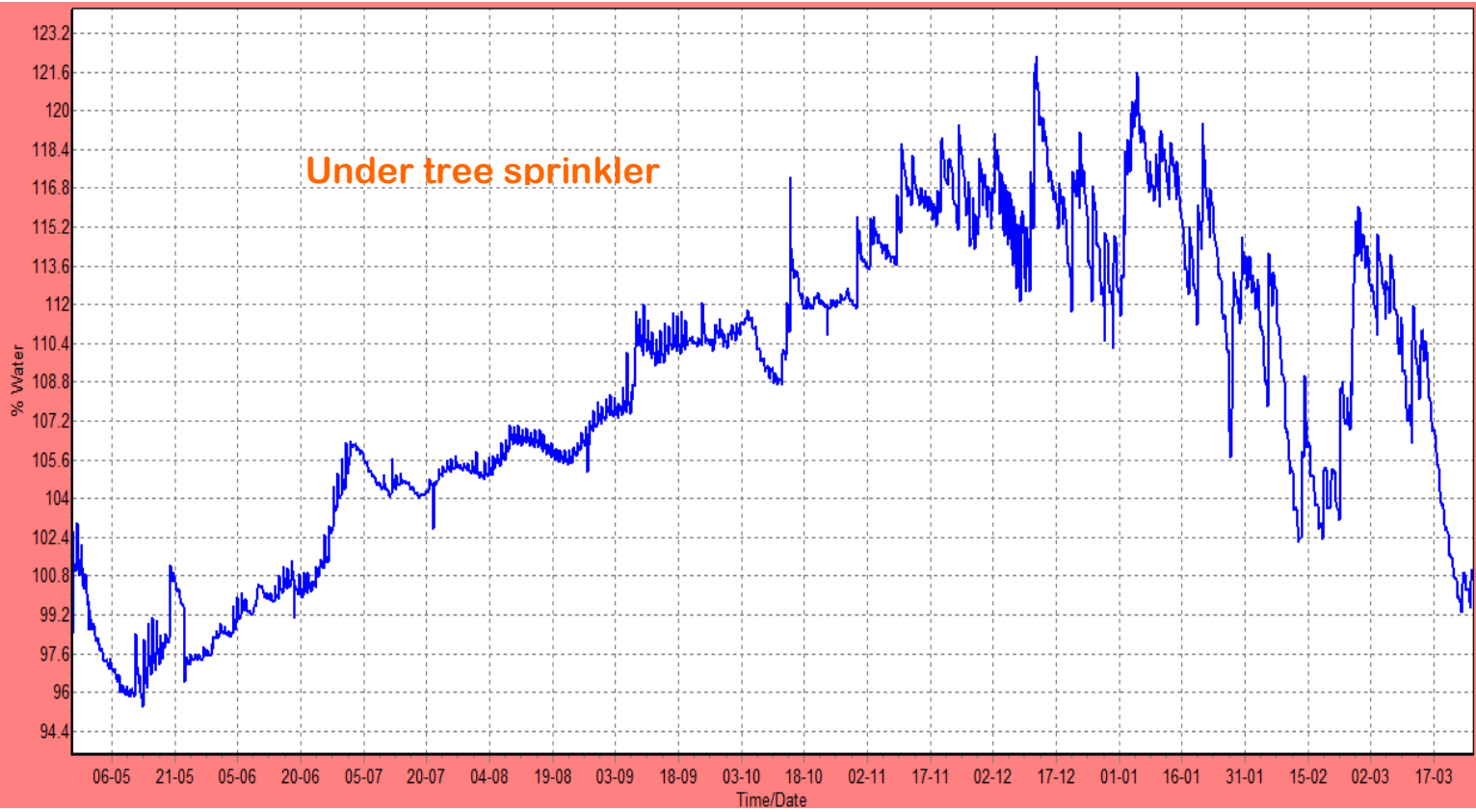


YOUNG PETRA - SUMMED GRAPH : 10, 30, 50, 70, 90cm Sensors

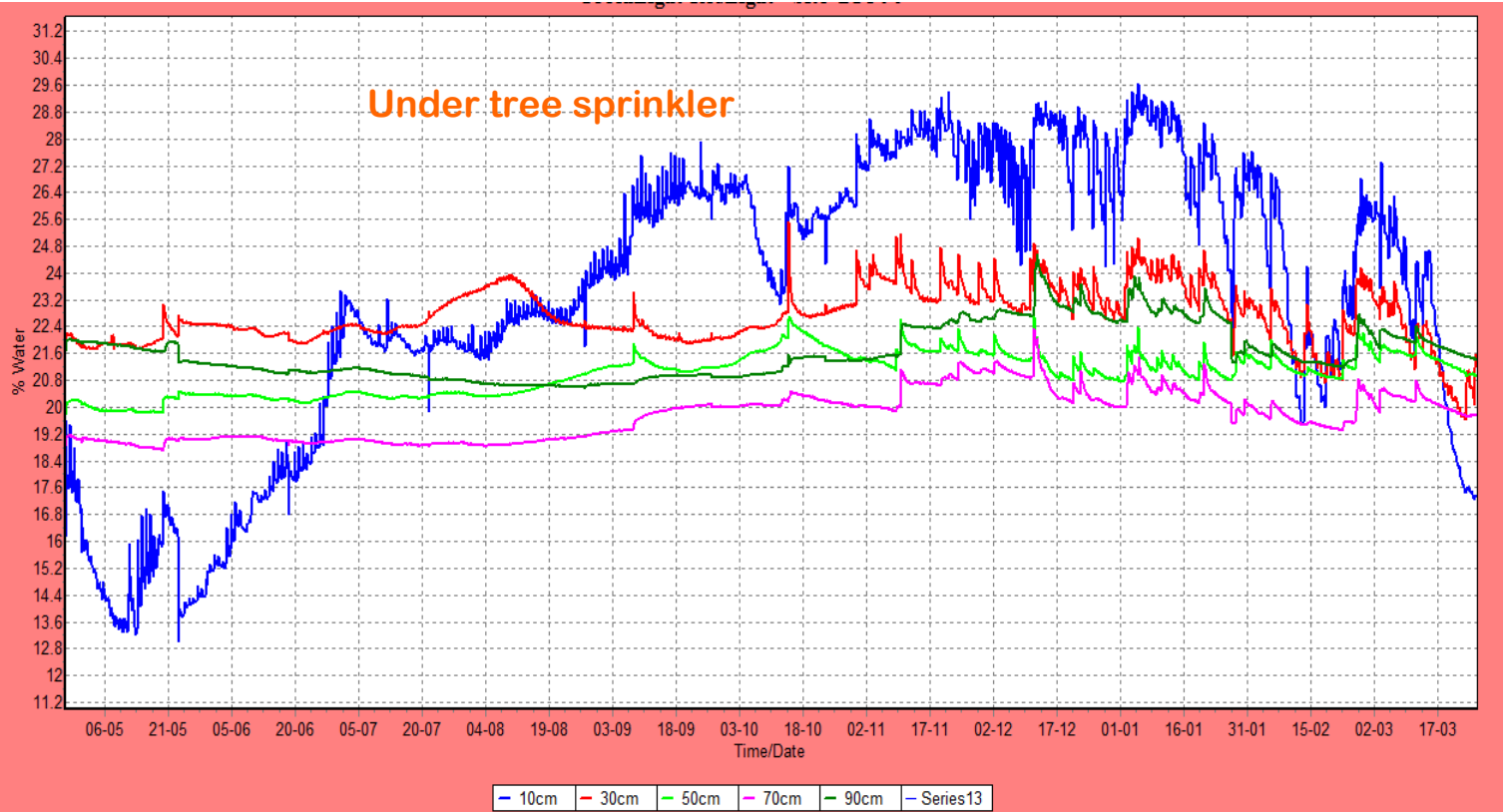
Drip Irrigation



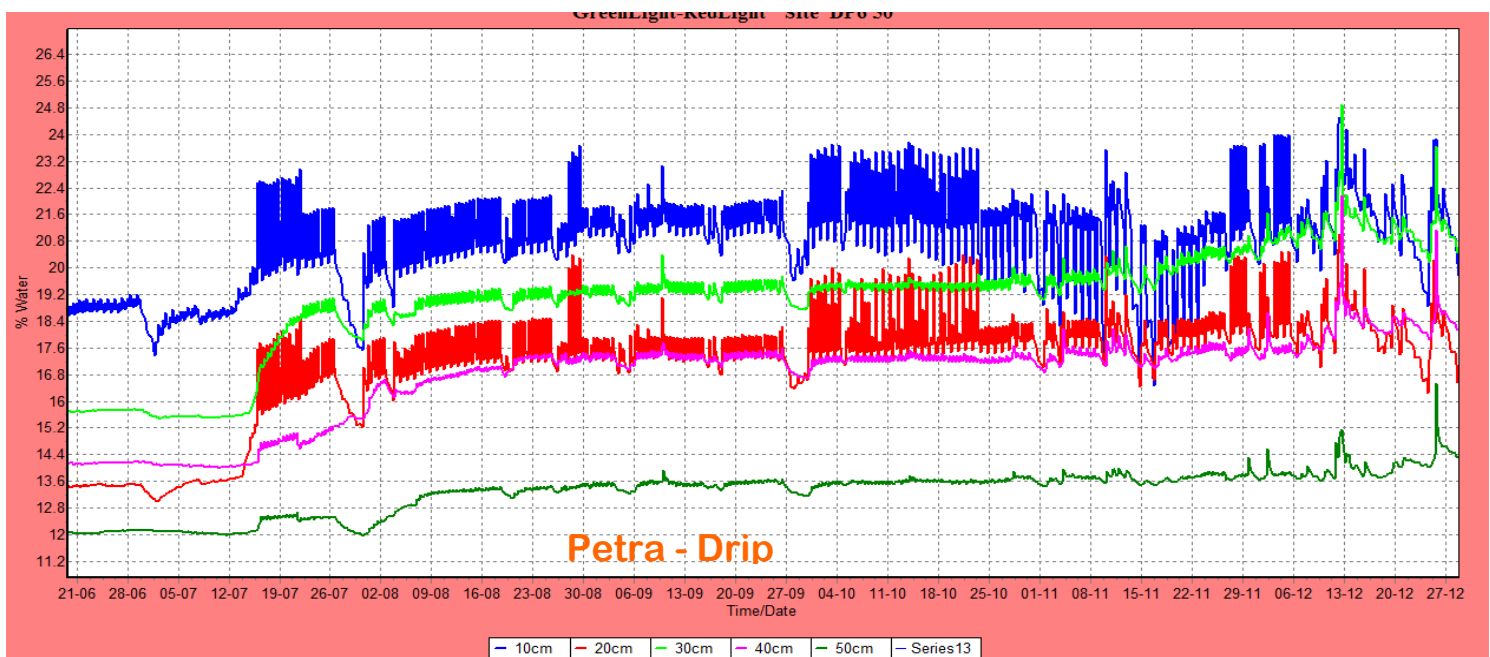
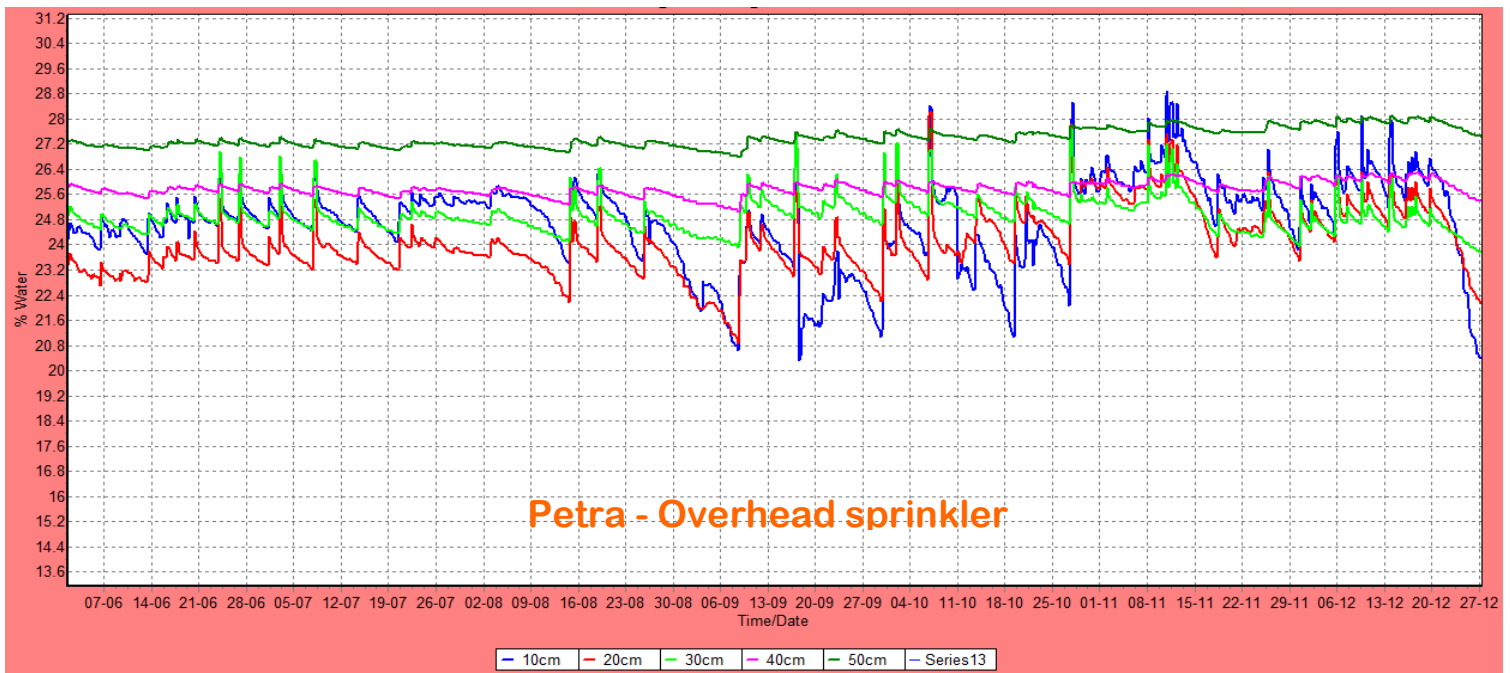
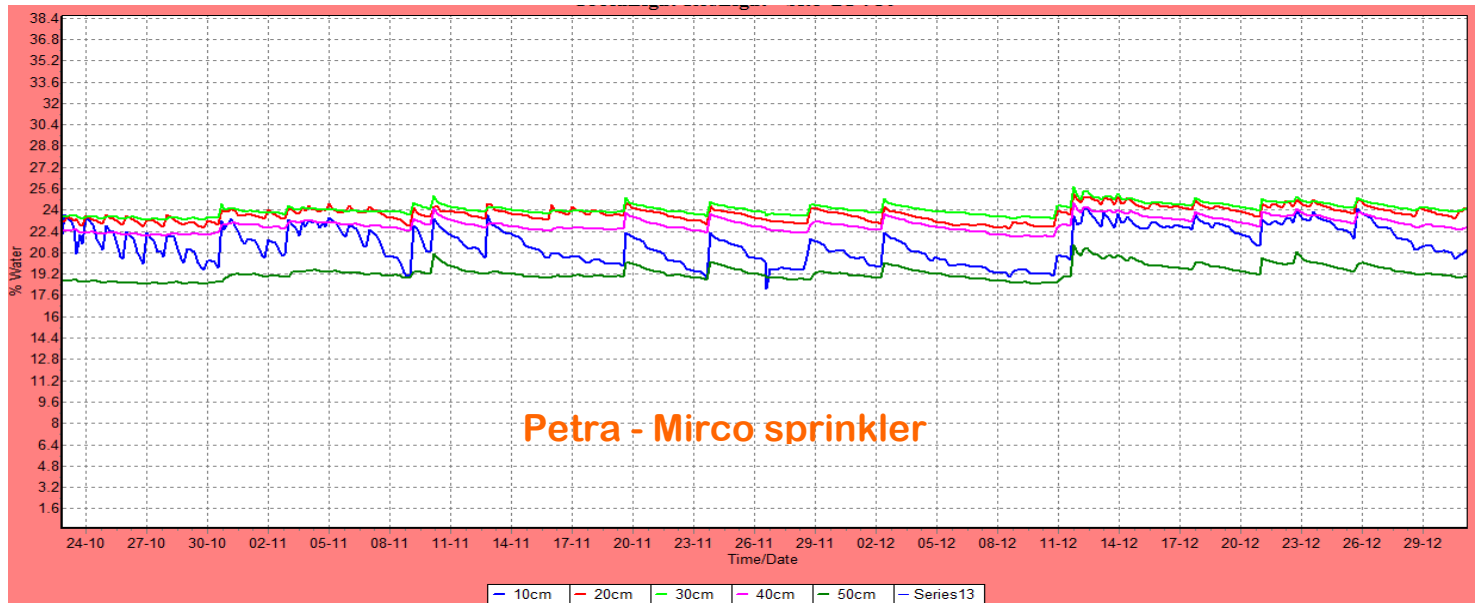
YOUNG PETRA - INDIVIDUAL GRAPH : 10, 30, 50, 70, 90cm Sensors

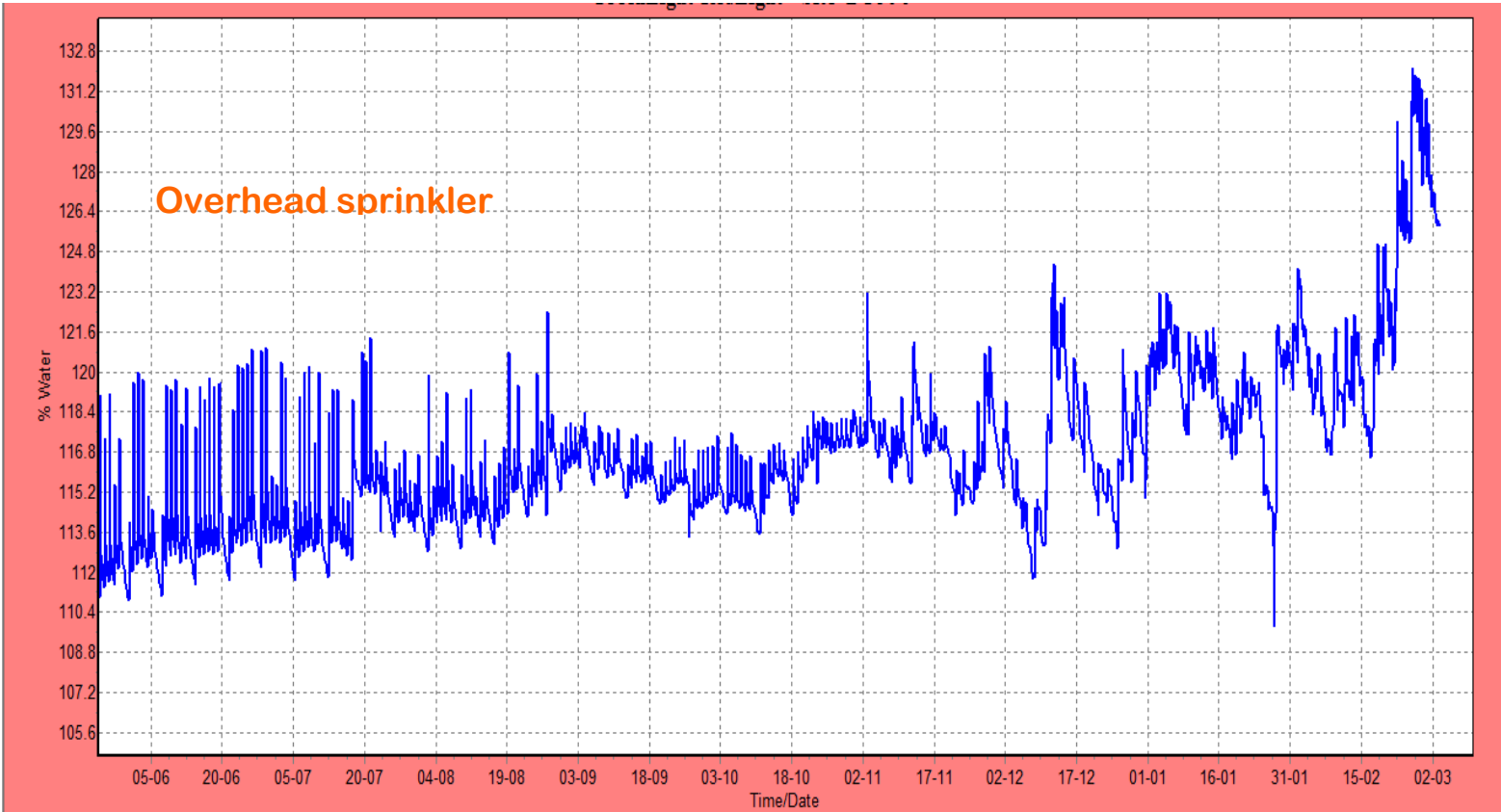


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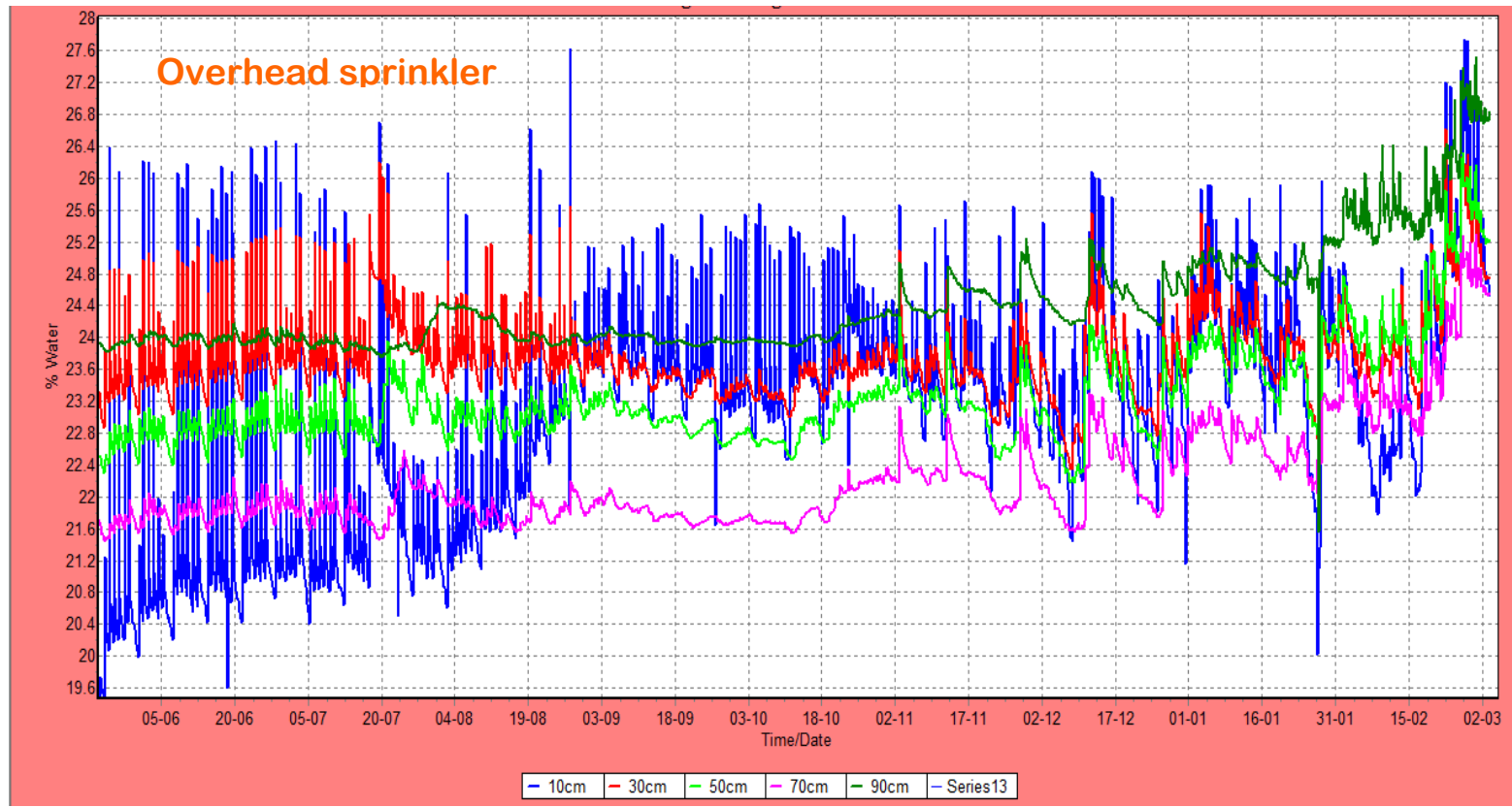


YOUNG PETRA - INDIVIDUAL GRAPH : 10, 30, 50, 70, 90cm Sensors

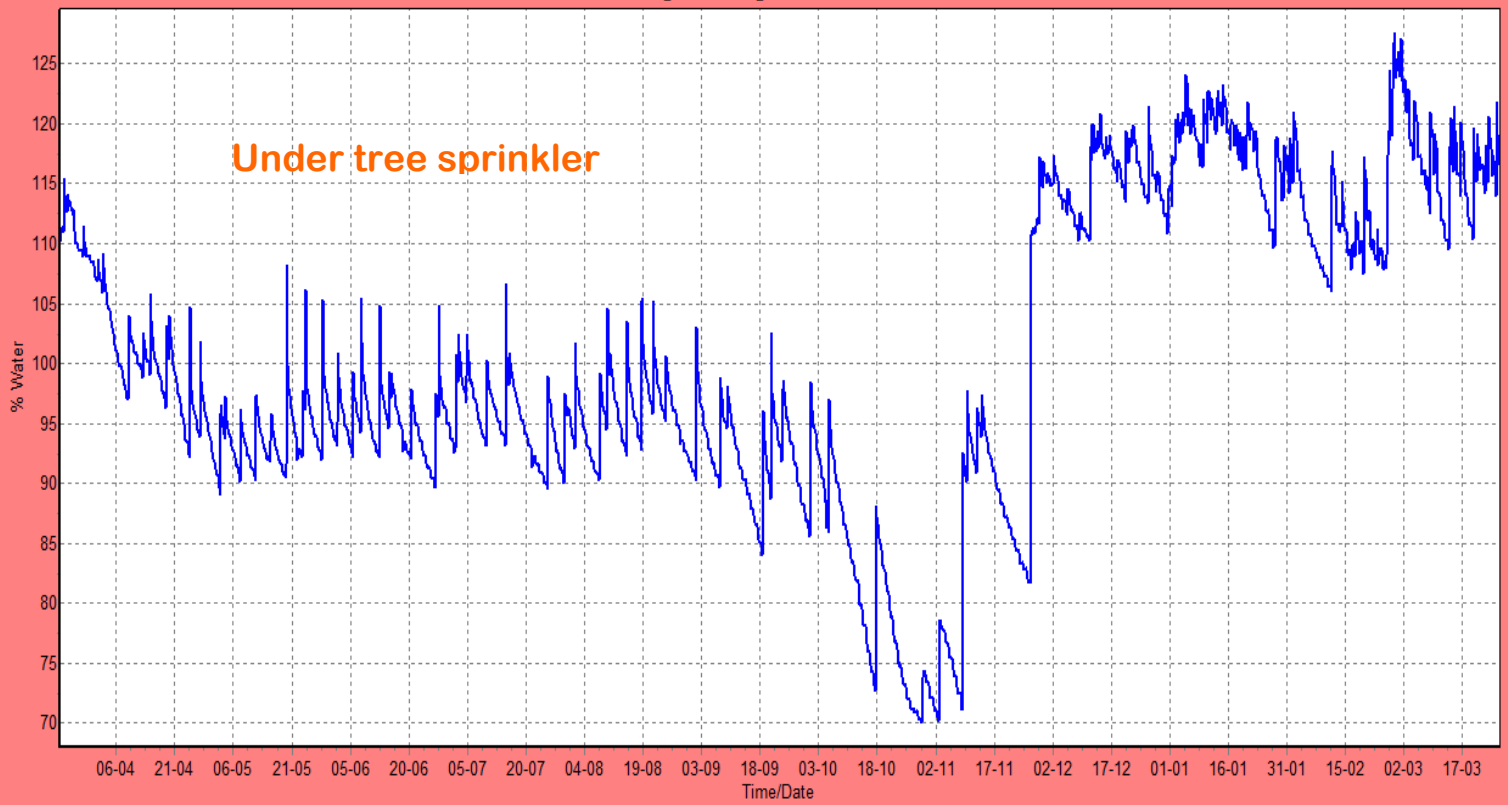




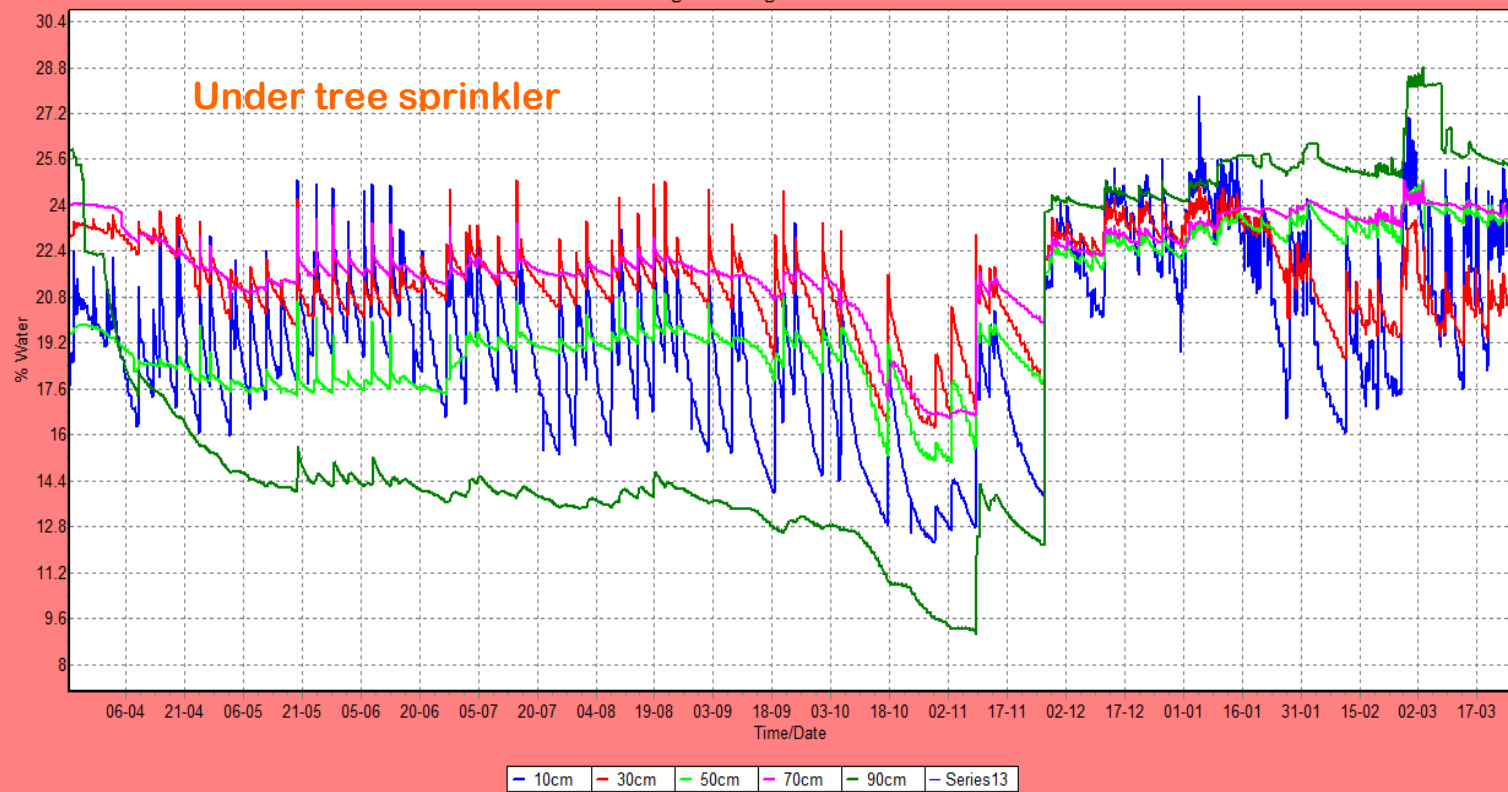
MATURE CLAW II - SUMMED GRAPH : 10, 30, 50, 70, 90cm Sensors



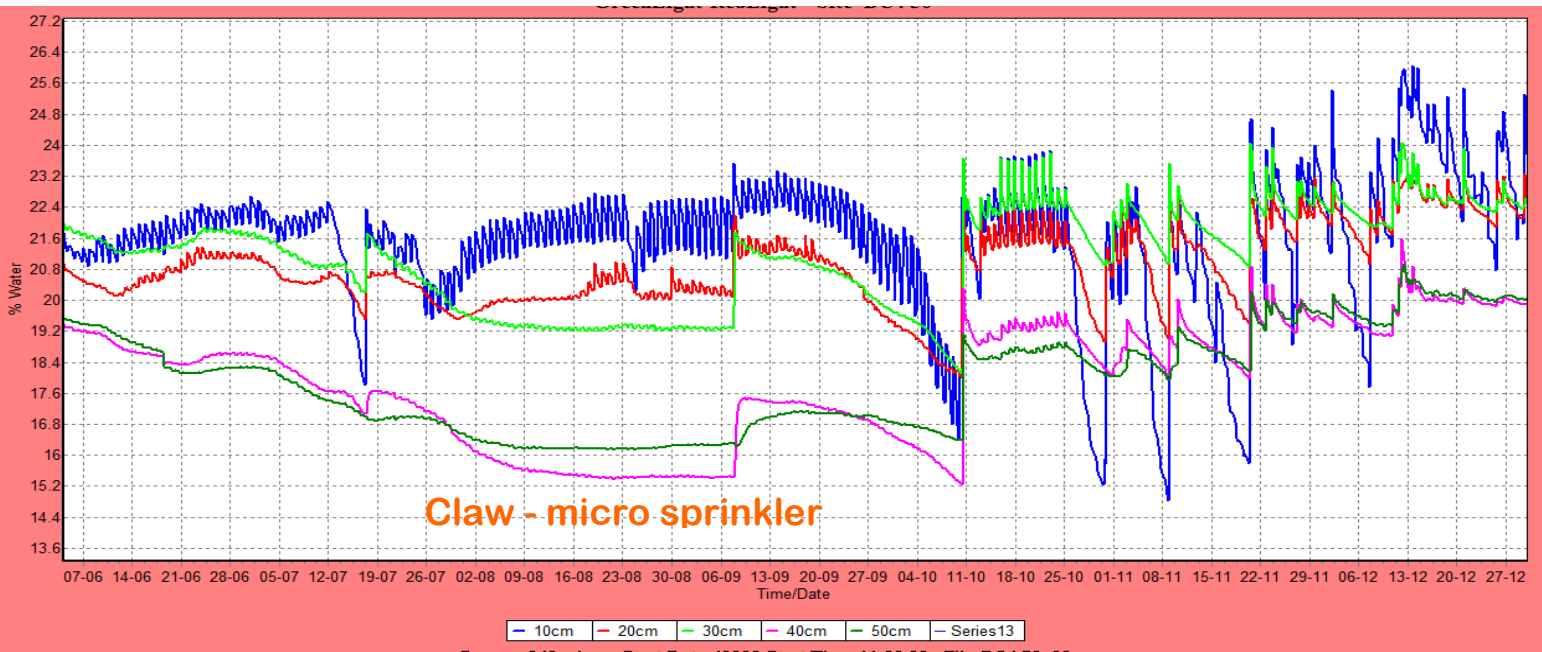
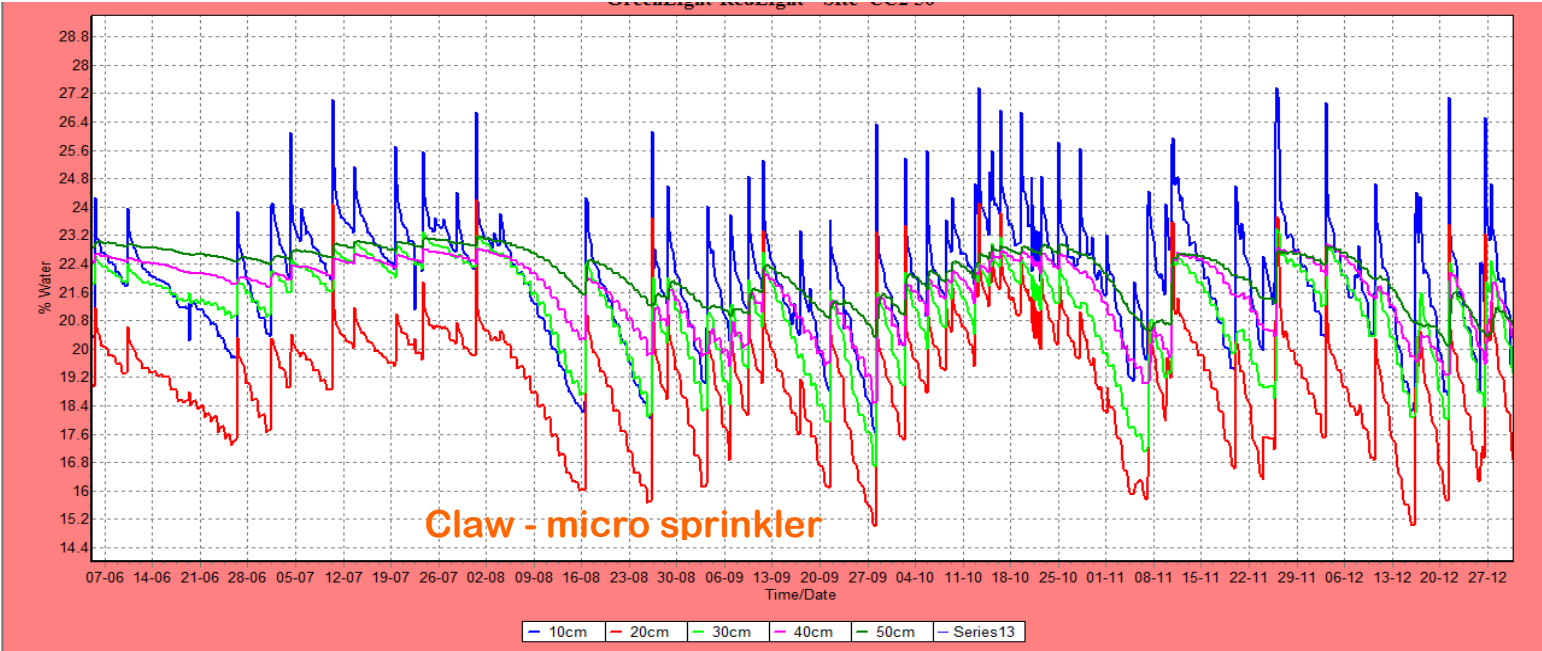
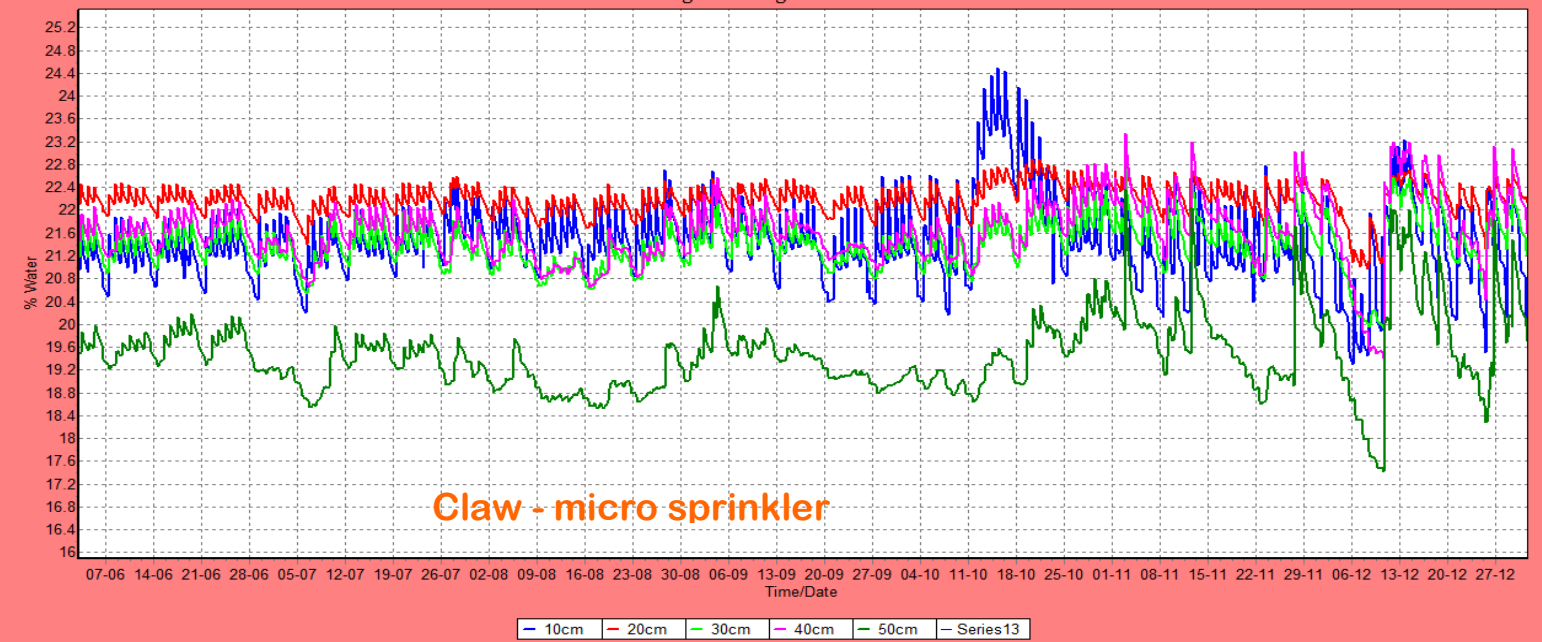
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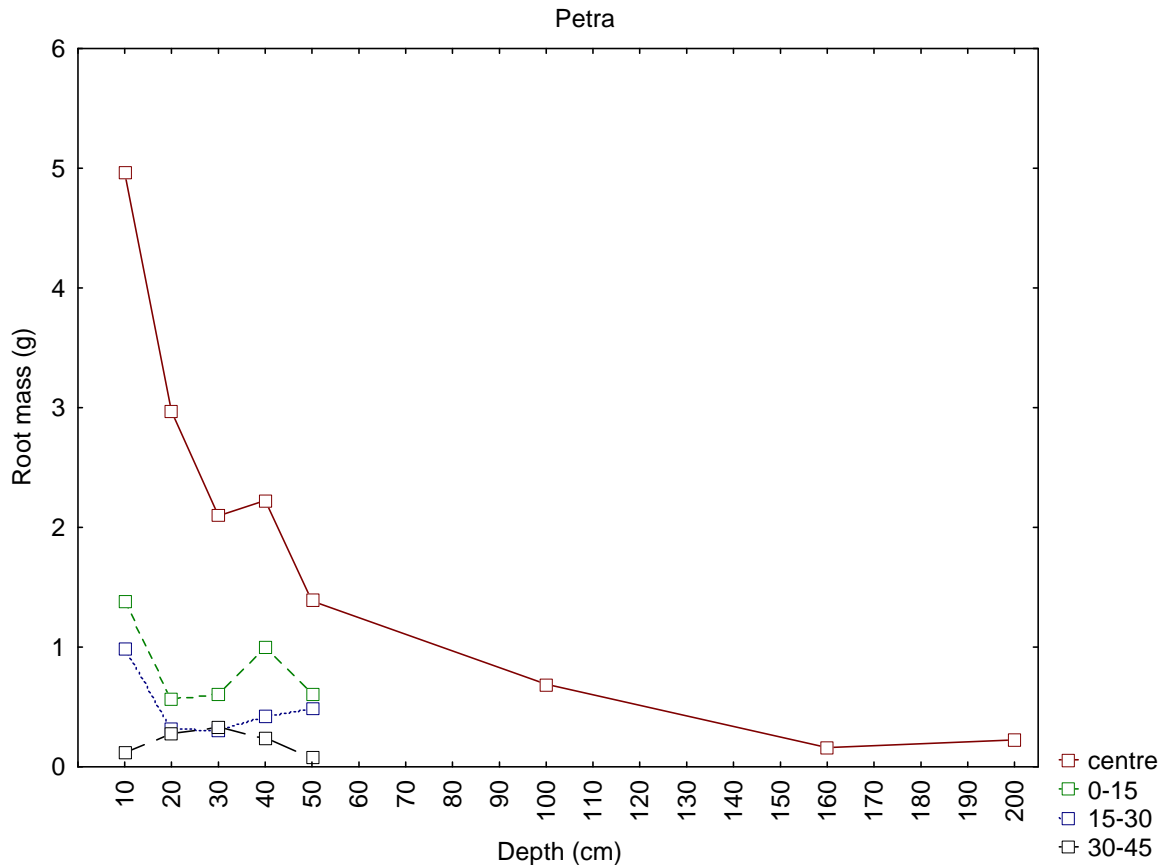
MATURE CLAW II - SUMMED GRAPH : 10, 30, 50, 70, 90cm Sensors



MATURE CLAW II - INDIVIDUAL GRAPH : 10, 30, 50, 70, 90cm Sensors



Petra roots were sampled in four locations relative to the flower bed (legend inside graph), being the centre of the bed, and distances away from the edge of the bed (0-15 cm, 15-30 cm, and 30-45 cm). Sampling was conducted at five depths (x-axis of graph) being 10 cm intervals up to 50 cm in all distances, and an additional three depths at the centre of the bed, being 90-100, 150-160 and 190-200cm..

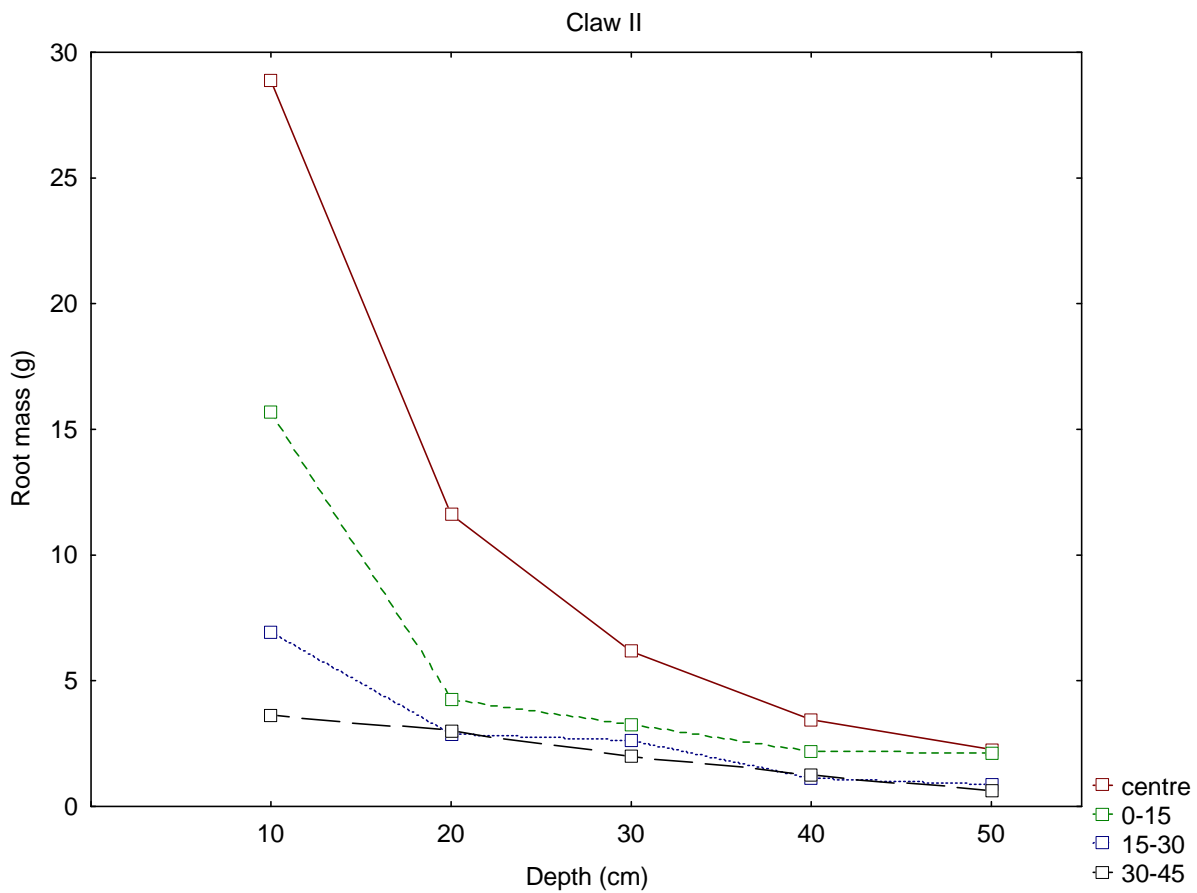


Main findings:

- Petra roots are predominantly underneath the plants, not positioned horizontally away from the beds.
- There is a gradual and linear decline in root mass with depth

Note that there is an interesting increase in root mass at 40cm, consistent at all distances. This may be an artefact of the watering depth of this particular farm.

Identical sampling was conducted for Claws, but only to 50 cm.



Main findings:

- Claw roots are predominantly underneath the plants, but are also positioned horizontally away from the beds.
- There is a far stronger asymptotic decline in root mass with depth, changing to a linear decrease with increasing horizontal distance away from the plant.
- Claw roots will likely extend well below 1m, probably deeper than 2m like Petra.