



Government
of South Australia

Renmark to Border LAP

Soil Salinity Trial

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Irrigated Crop Management Service,
Rural Solutions SA



RURAL SOLUTIONS SA

Project Partners

- **SAMDBNRMB**
- **Renmark to Border LAP**
- **Irrigated Crop Management Service**



Project Aims

- **Measure soil salinities for different crops under drip and sprinkler irrigation systems**
- **Estimate deep drainage from IRES, SoluSampler and Soil water Monitoring Devices**
- **Refinement of crop coefficient at valve level using IRES with soil water monitoring data.**



Project sites

- Almonds, under canopy sprinkler
- Almonds, drip
- Almonds, subsurface drip
- Citrus, under canopy sprinkler
- Citrus, drip
- Stone fruit, under canopy sprinkler
- Stone fruit, drip
- Wine grapes, drip
- Wine grapes, drip



Instrumentation

- Citrus, drip
 - SoluSampler 2 reps. at 25, 40 and 60 cm depth
 - GBug at 25, 40, 60 and 70 cm depth
- Almonds, subsurface drip
 - SoluSampler 2 reps. at 30, 50 and 70 cm depths
 - GBug at 30, 50, 70 and 80 cm depth
- Wine grapes, drip
 - SoluSampler 2 reps. at 25, 50 and 70 cm depths
 - GBug at 25, 50, 70 and 80 cm depth



Instrumentation Contd

- Stone fruit, canopy sprinkler
 - SoluSampler 2 reps. at 30, 50 and 70 cm depths
 - GBug water mark at 30, 50, 70 and 90 cm depth
- Citrus, under canopy sprinkler
 - SoluSampler 2 reps. at 30, 50 and 60 cm depth
 - GBug at 30, 50, 60 and 70 cm depth



Instrumentation Contd

- Stone fruit, drip
 - SoluSampler 2 reps. at 30, 50 and 70 cm depths
 - GBug at 30, 50, 70 and 80 cm depth
- Wine grapes, drip
 - SoluSampler 4 reps. at 30, 60 and 90 cm depths
 - GBug
- Almonds, drip
 - SoluSampler 2 reps. at 30, 50 and 70 cm depths
- Almonds, under canopy sprinkler
 - SoluSampler 4 reps. at 30, 60 and 90 cm depths
 - GBug at 30, 50, 70 and 90 cm depths

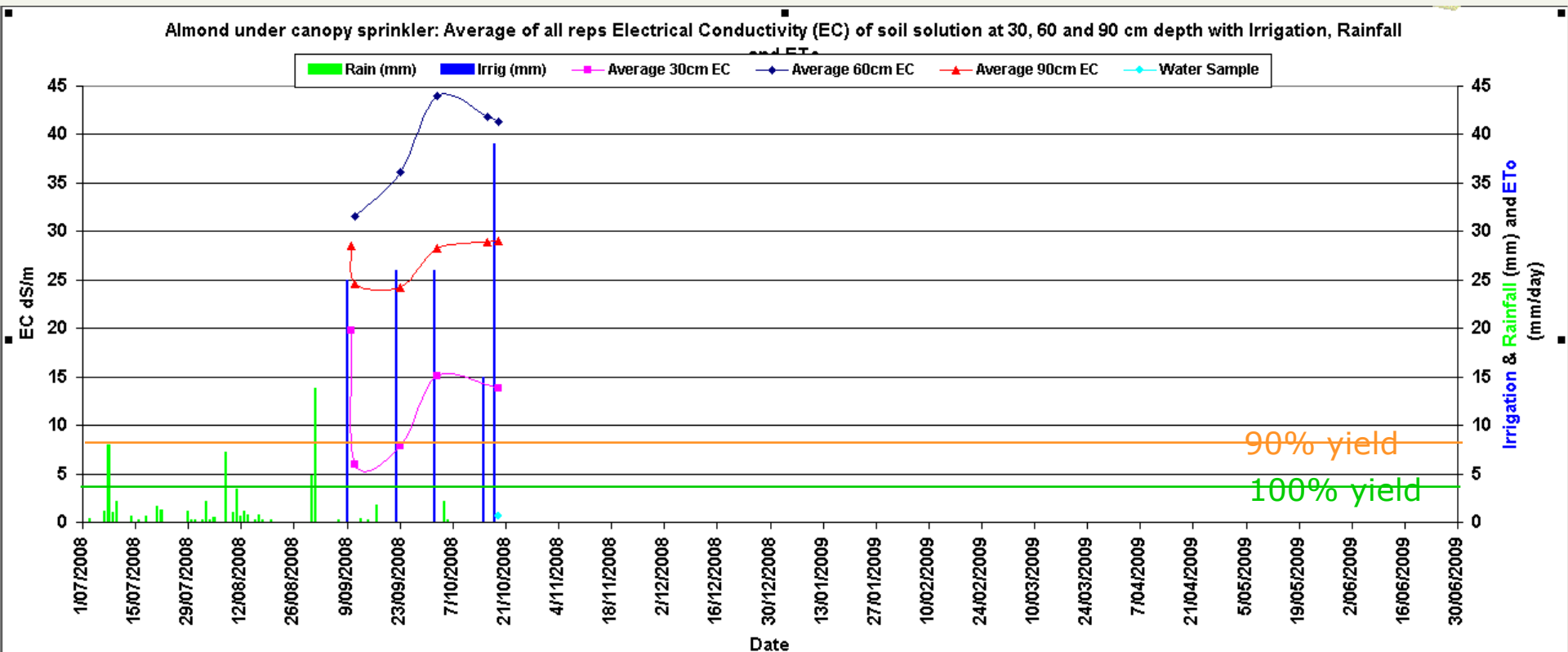


Progress so far

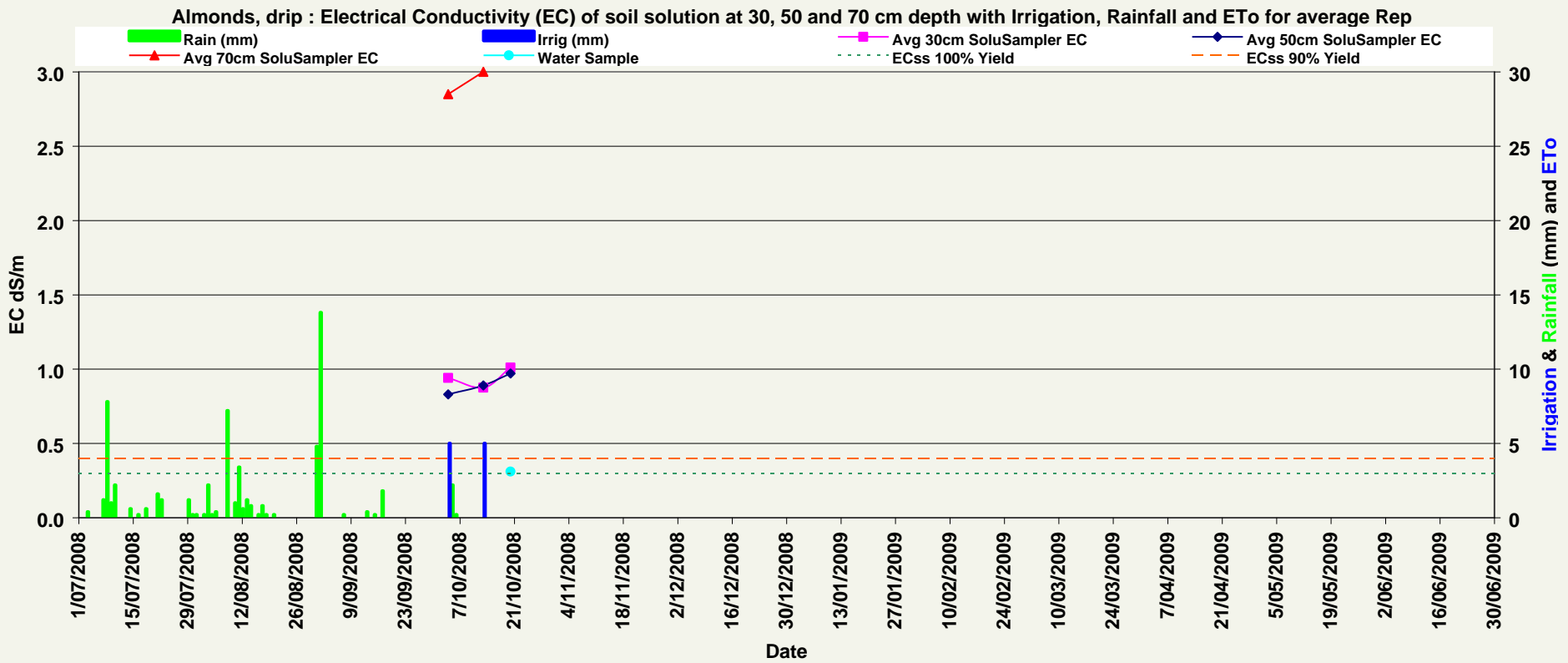
- Initial soil samples collected from all sites and analysed at ACML
- Installation of SoluSampler for all sites complete
- Installation of GBug at all sites and monitoring soil water tension
- Collecting solution samples fortnightly and analysed them for EC_{sw} and pH
- Creating graphs for look at salinity trend in soil solution for all sites.



SoluSampler Salinity: Almonds, under canopy sprinkler

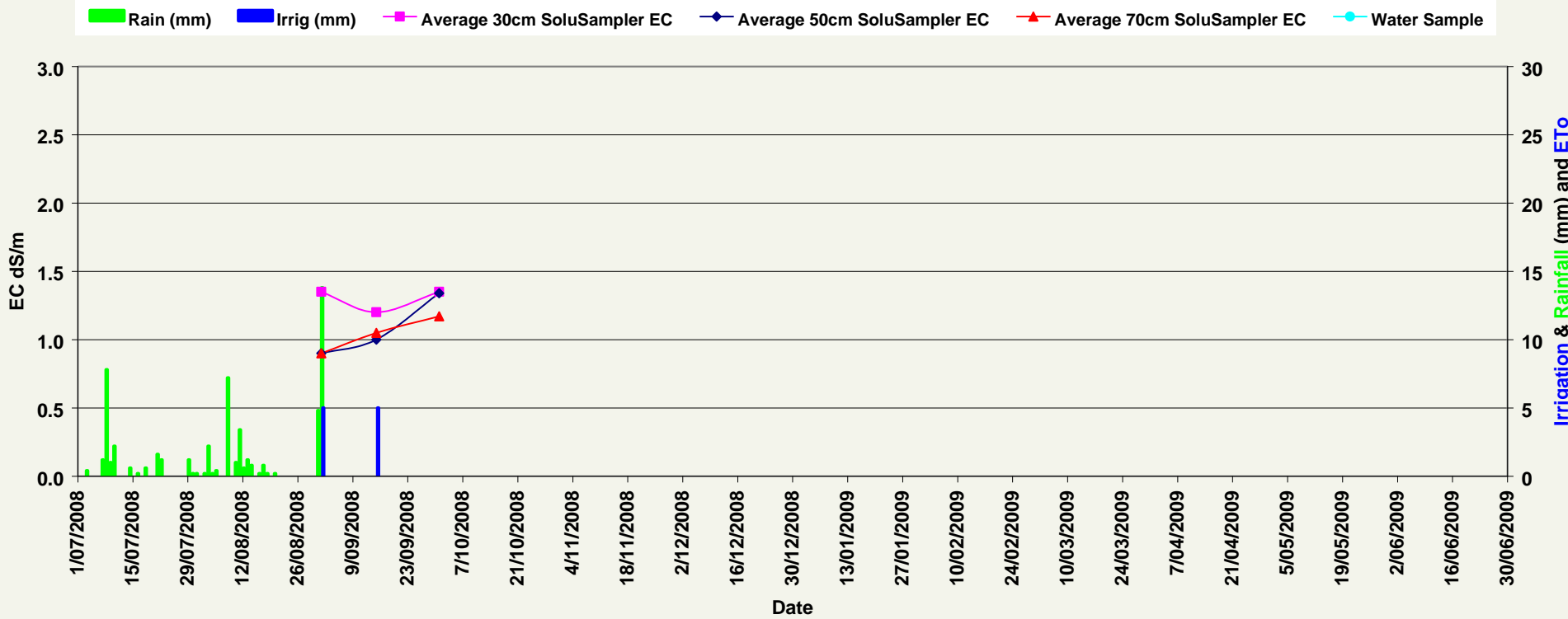


SoluSampler Salinity: Almonds, drip



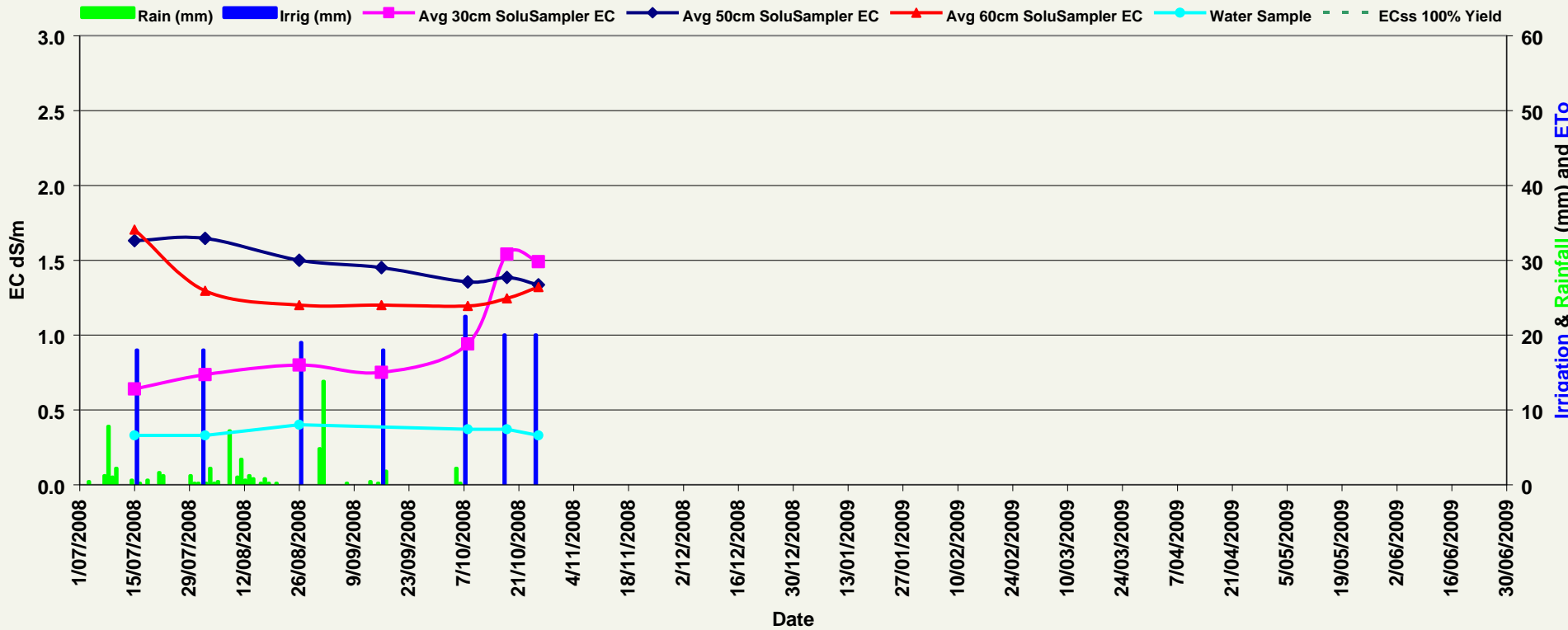
SoluSampler Salinity: Almonds, subsurface drip

Almond, subsurface drip: Electrical Conductivity (EC) of soil solution at 30, 50 and 70 cm depth, average Rep 1&2



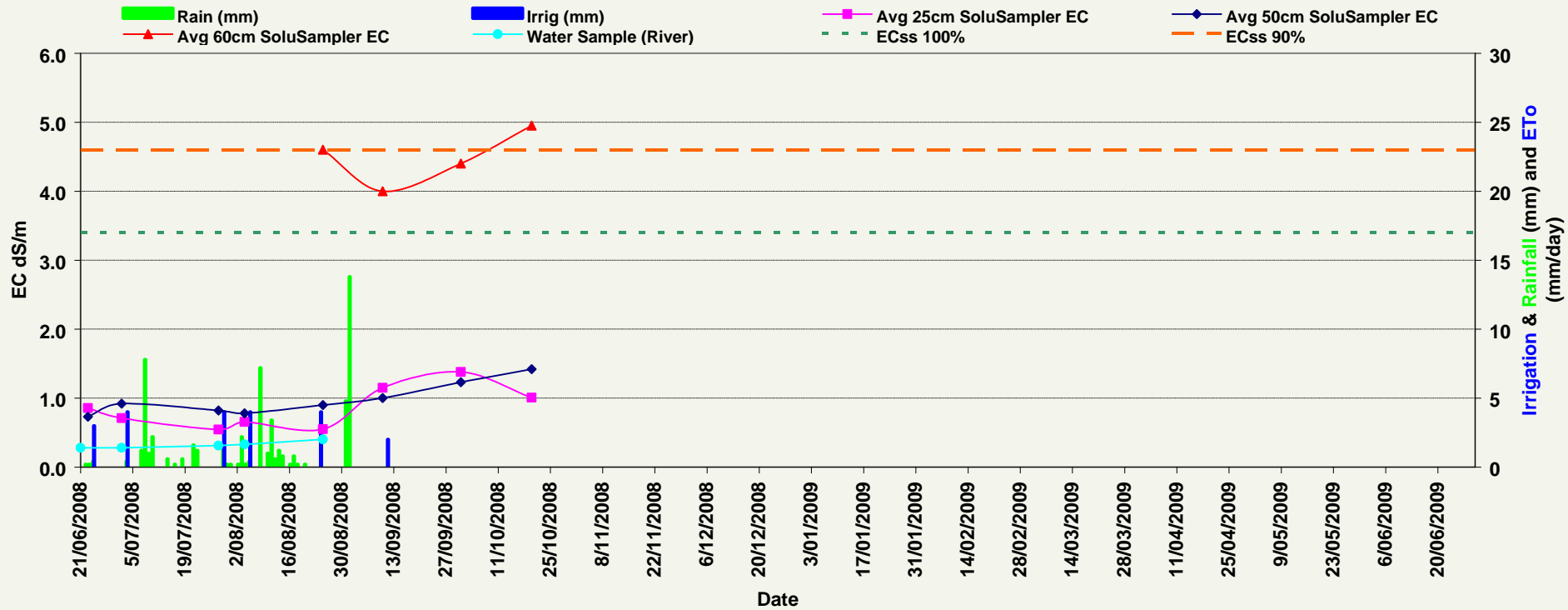
SoluSampler Salinity: Citrus, under canopy sprinkler

Citrus, under canopy sprinkler: SoluSampler Electrical Conductivity (ECss) at 30, 50 and 60 cm depth, average Rep 1&2

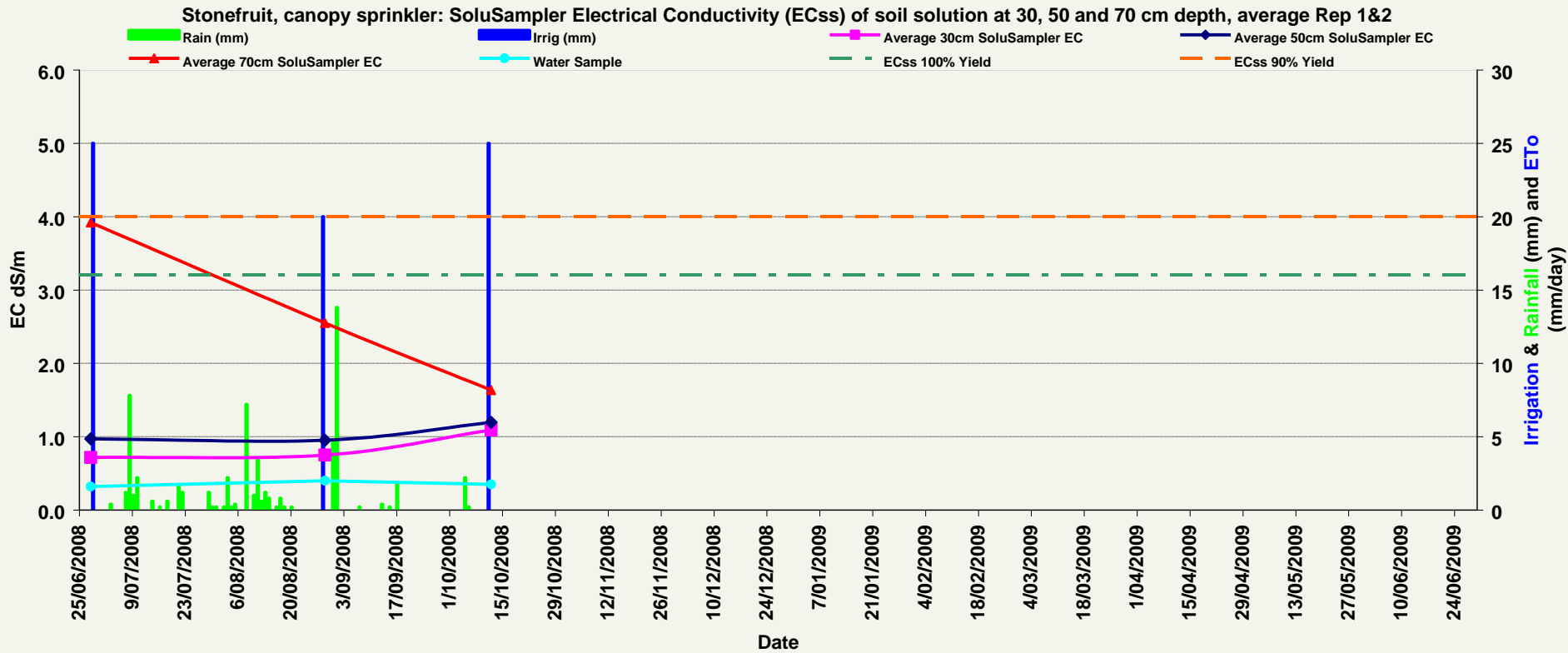


SoluSampler Salinity: Citrus, drip

Citrus, drip: SoluSampler Electrical Conductivity (ECss) at 25, 40 and 60 cm depth for average Rep 1&2

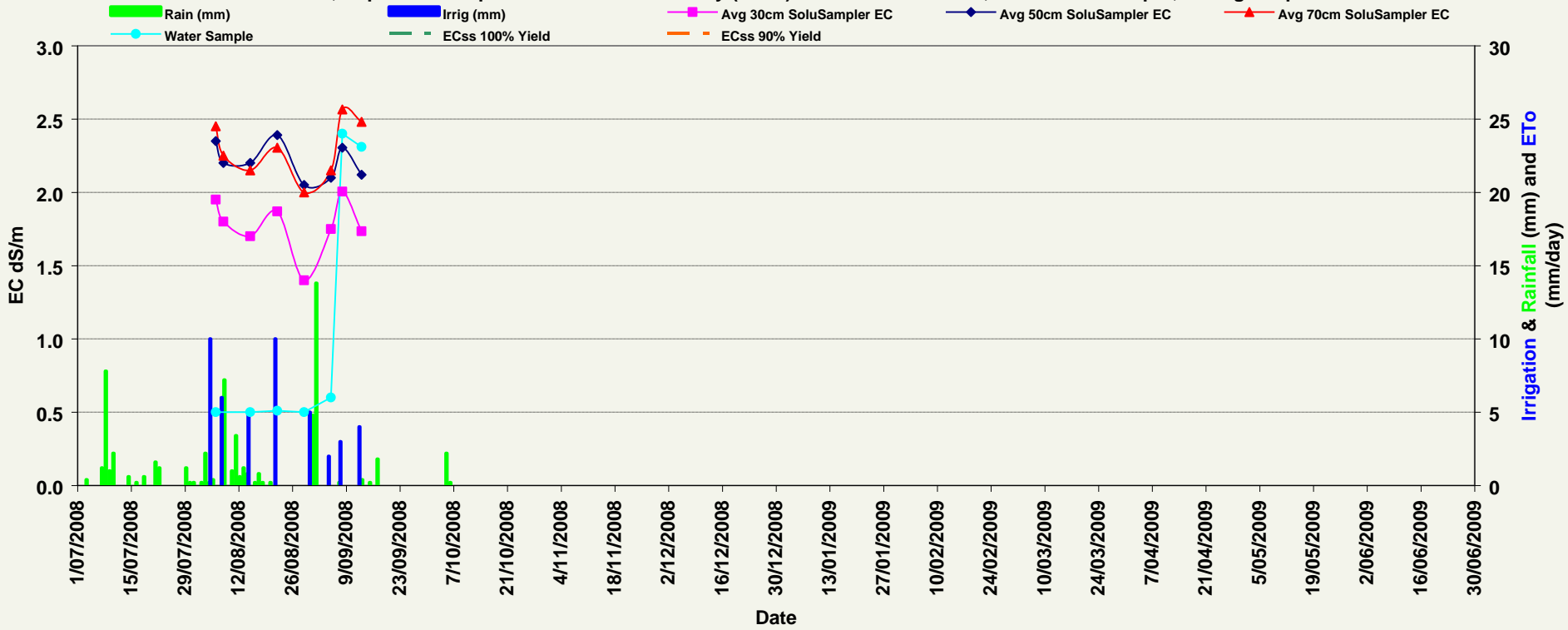


SoluSampler Salinity: Stone fruit, canopy sprinkler

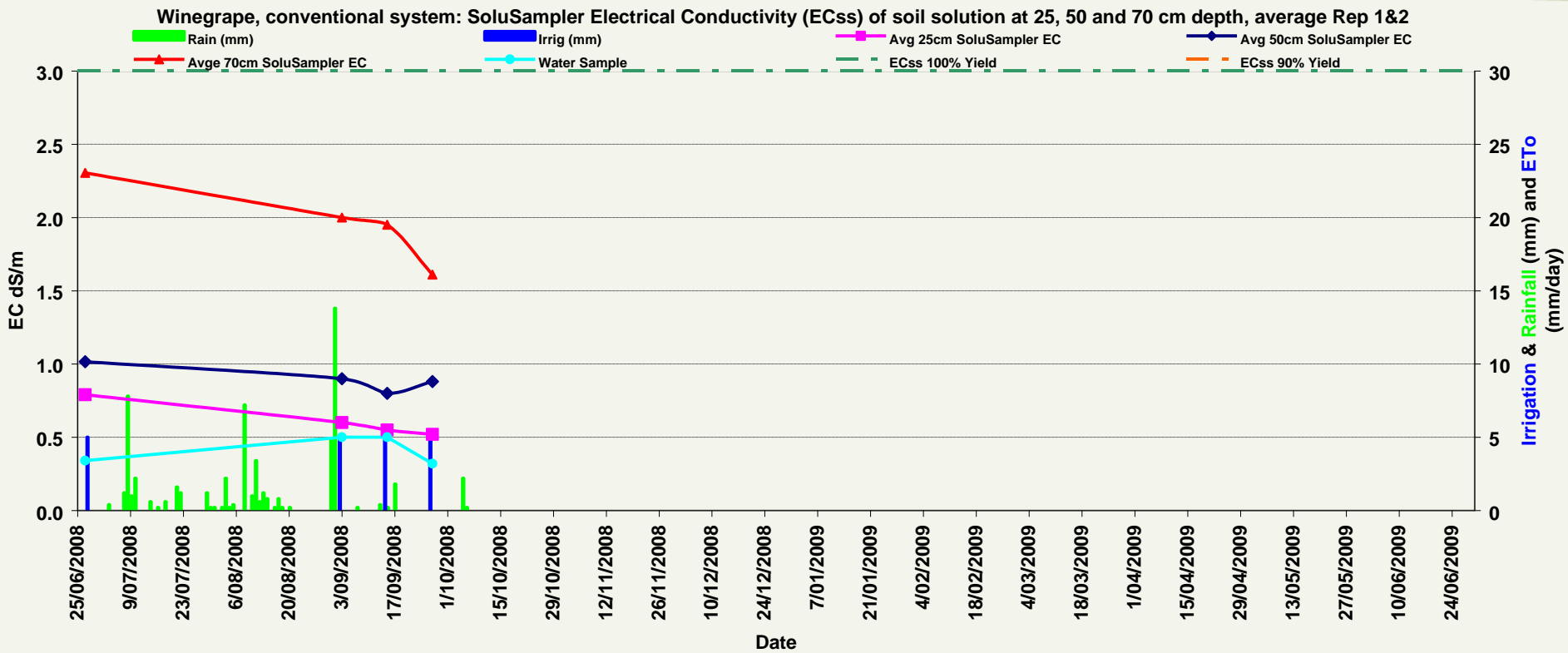


SoluSampler Salinity: Stone fruit, drip

Stonefruit, drip : SoluSampler Electrical Conductivity (ECss) of soil solution at 30, 50 and 70 cm depth, average Rep 1&2

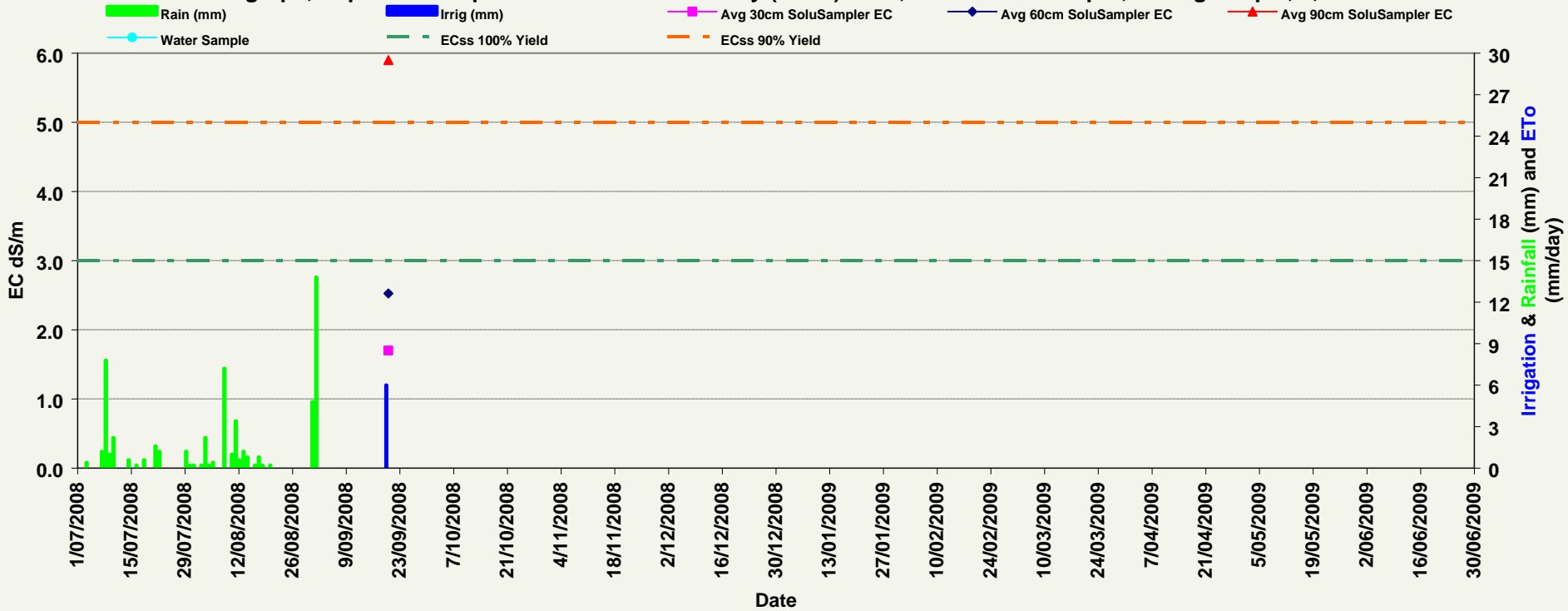


SoluSampler Salinity: Wine grapes, drip (pv)

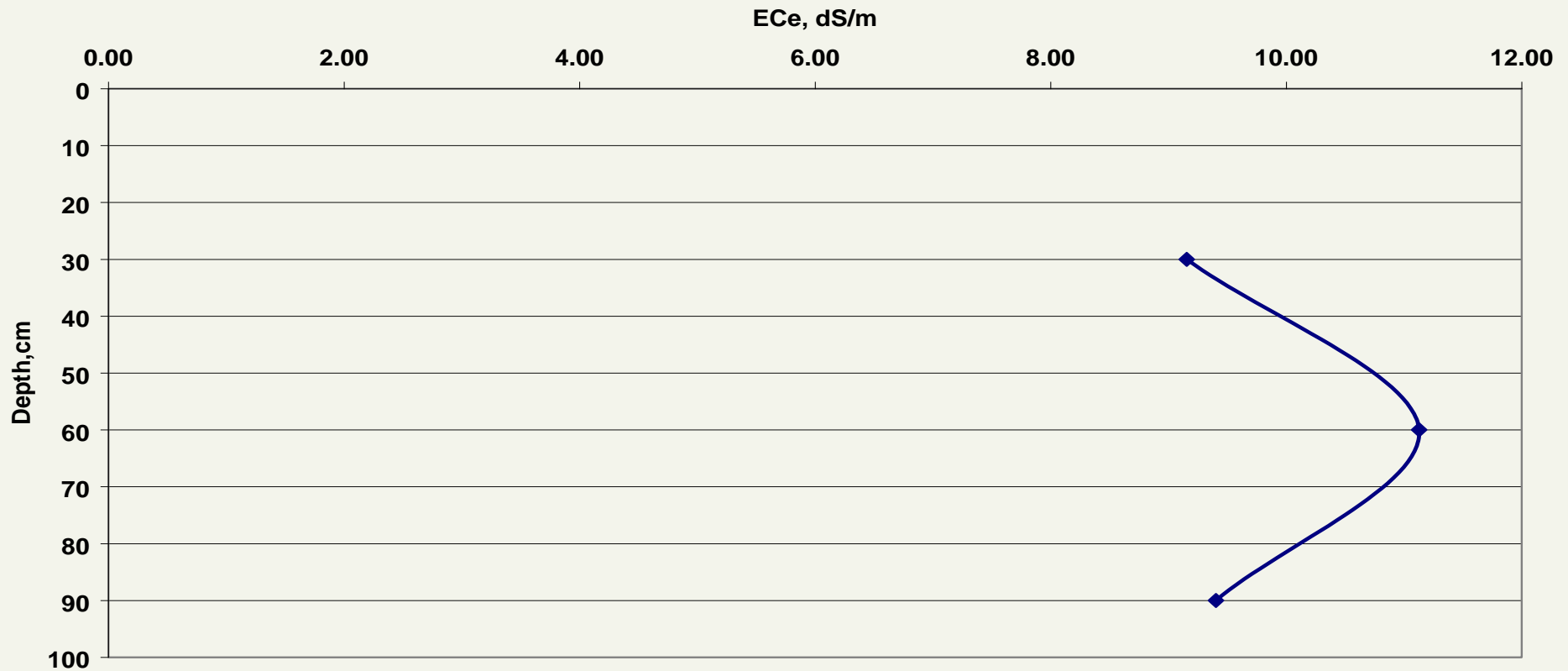


SoluSampler Salinity: Wine grapes, drip

Winegrape, drip: SoluSampler Electrical Conductivity (ECss) at 30, 60 and 90 cm depth, average Rep 1, 2, 3 & 4

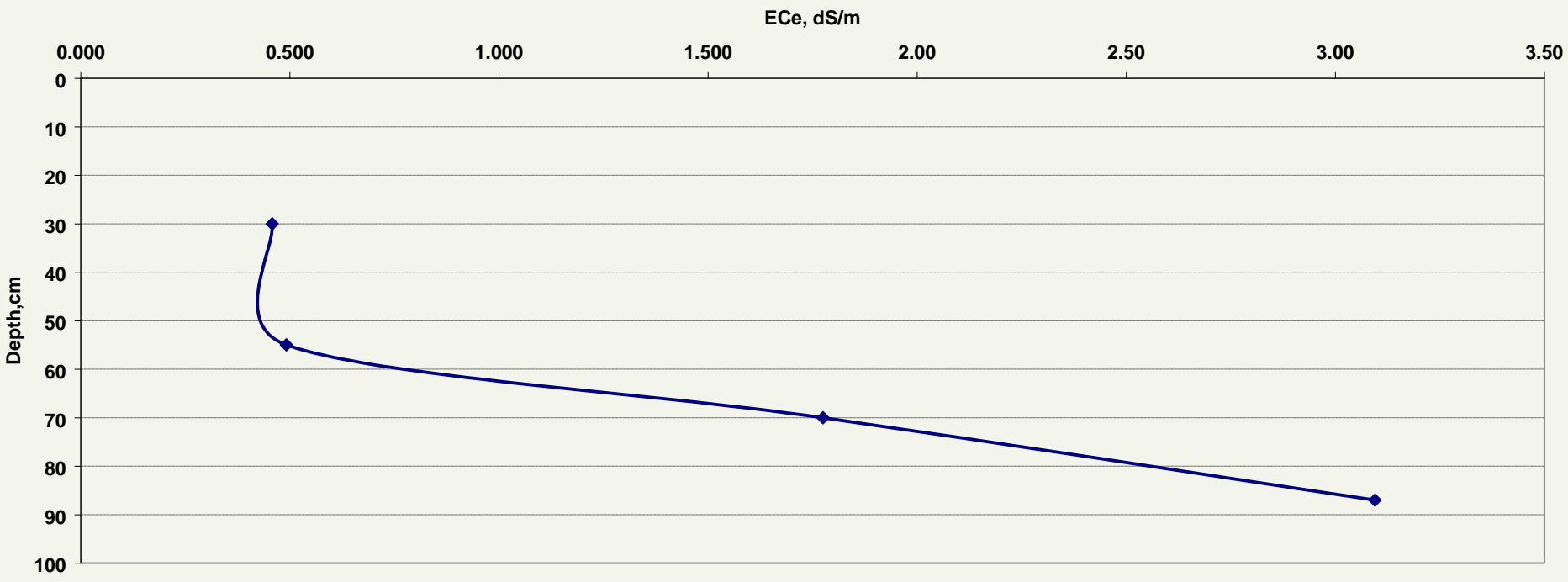


Soil Salinity: Almonds, under canopy sprinkler



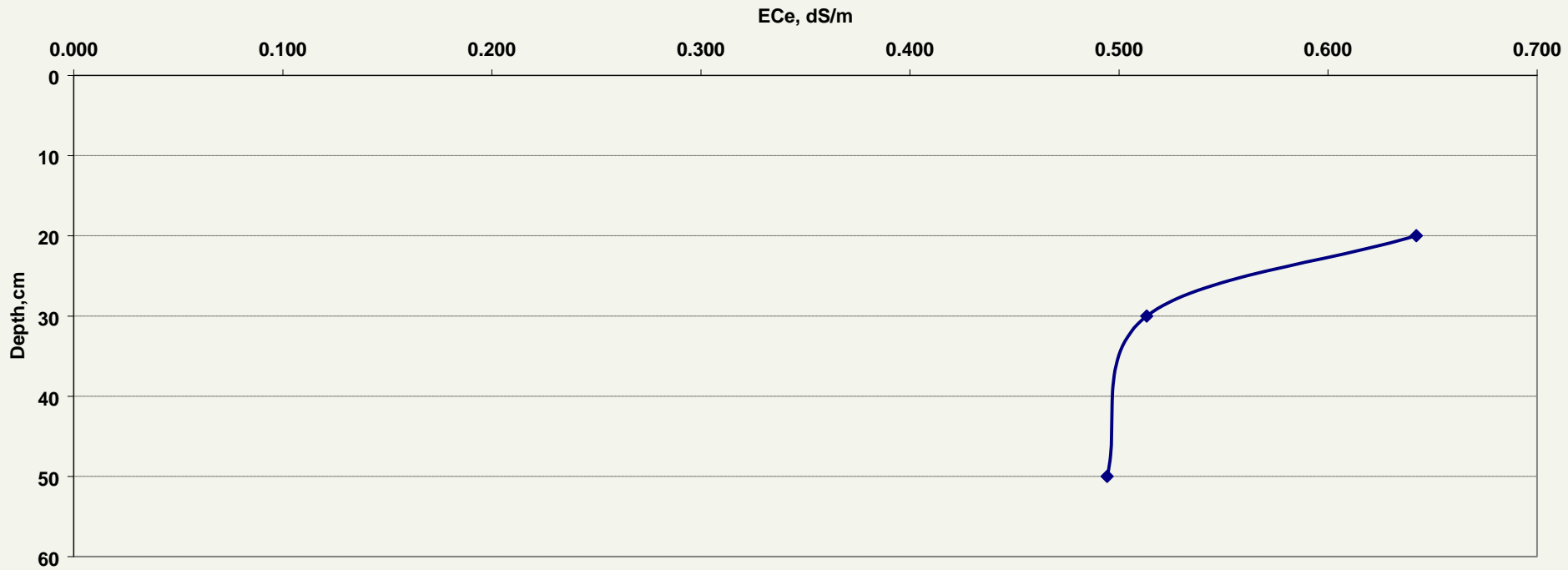
Soil Salinity: Almonds, drip

Almonds, drip (Lyrup) - June 2008: Depth vs ECe



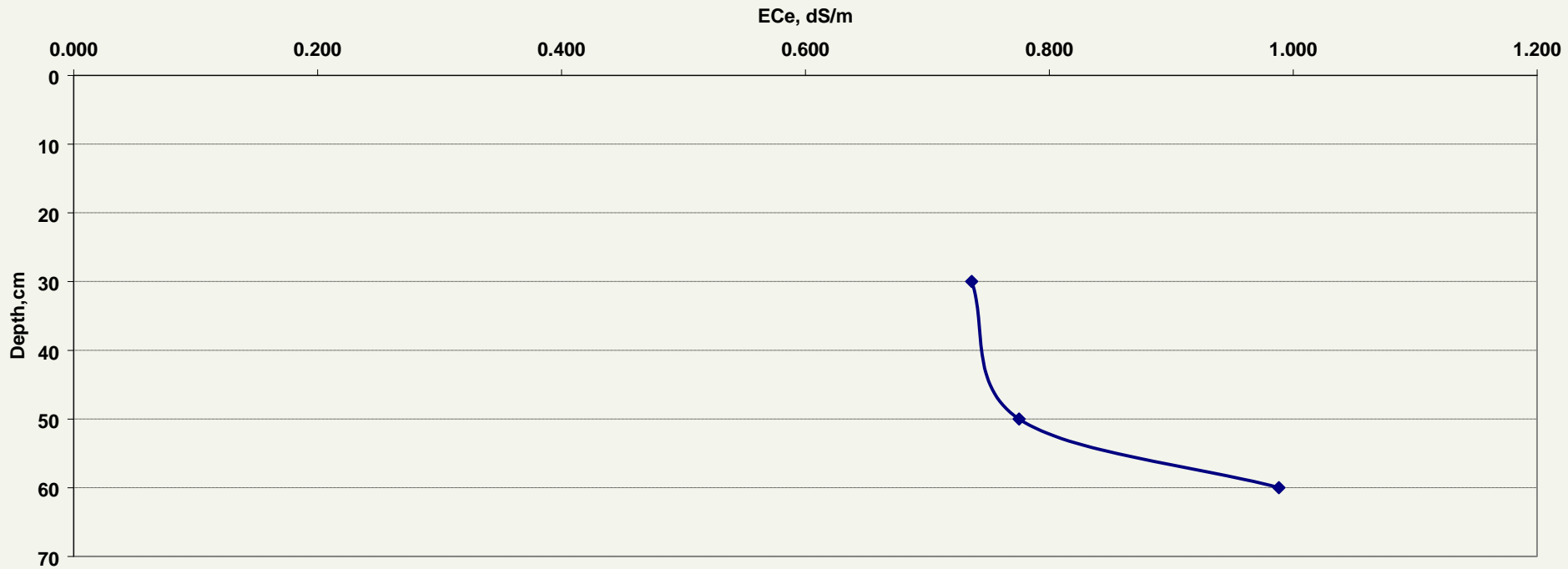
Soil Salinity : Almonds, subsurface drip

Almonds, Sub-surface drip (Murtho) - June 2008: Depth vs ECe



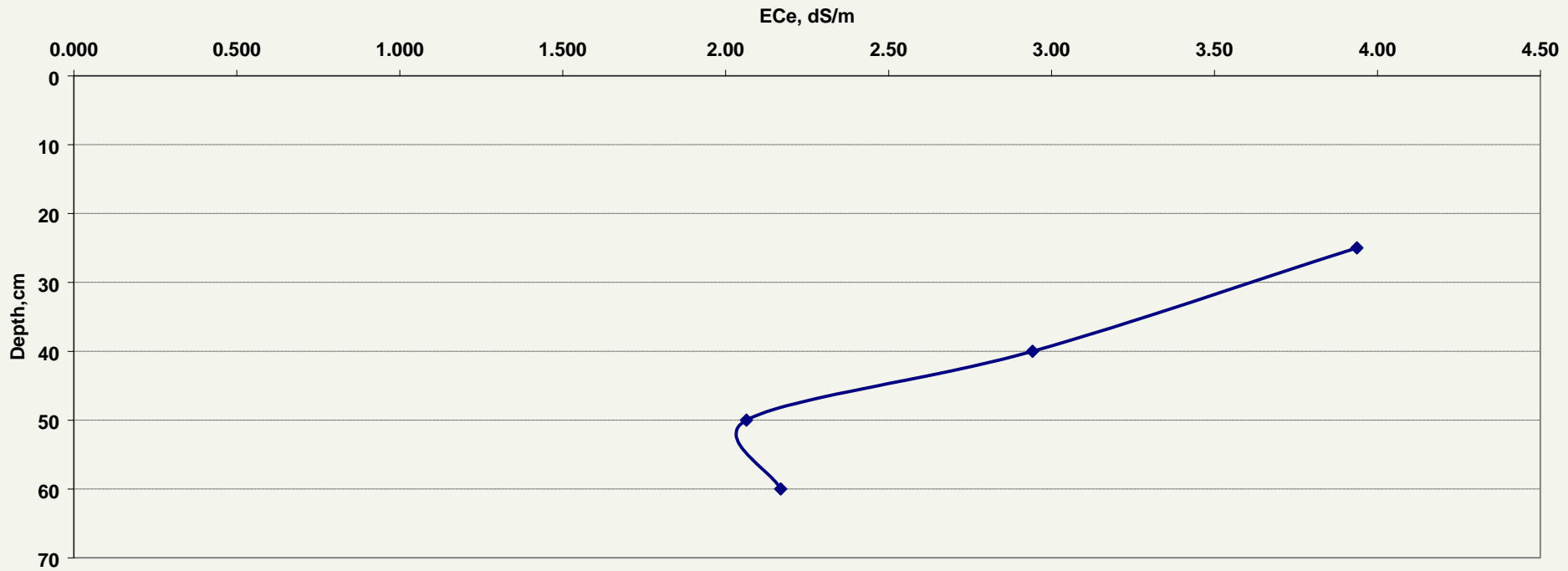
Soil Salinity : Citrus, under canopy sprinkler

Citrus under canopy - June 2008: Depth vs ECe



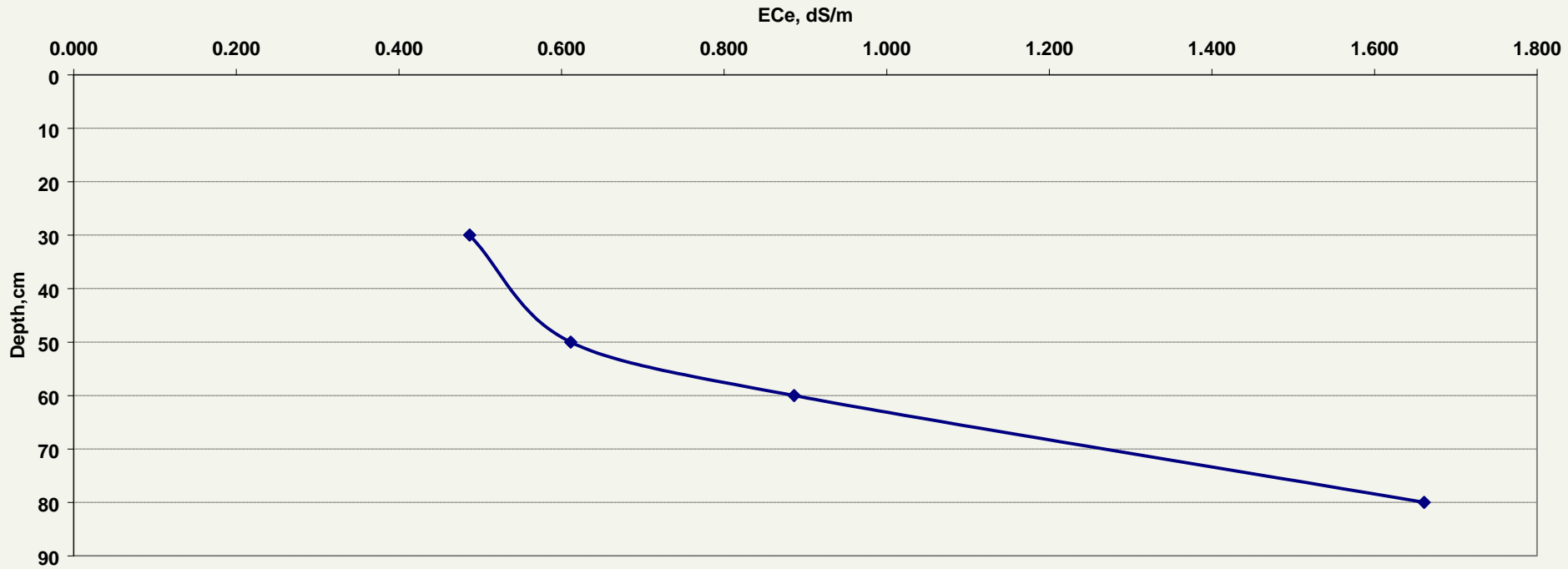
Soil Salinity : Citrus, drip

Citrus, drip - June 2008: Depth vs ECe



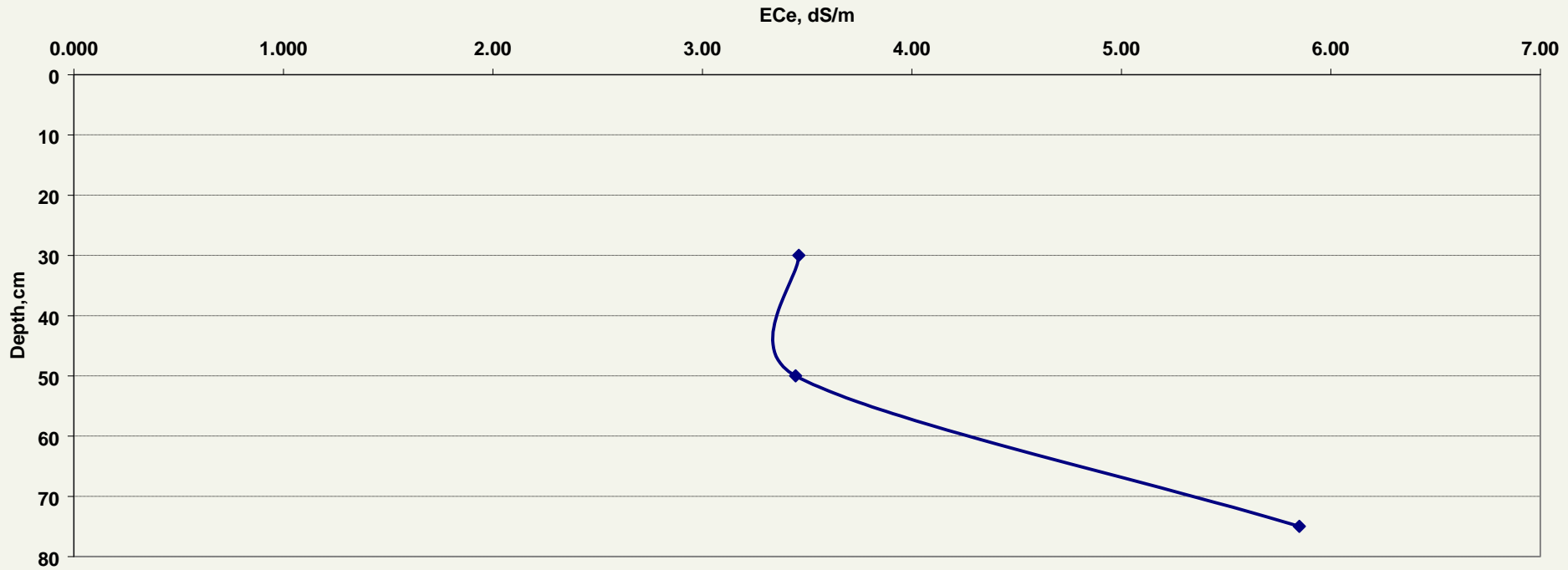
Soil Salinity : Stone fruit, canopy sprinkler

Stonefruit, canopy sprinkler - June 2008: Depth vs ECe



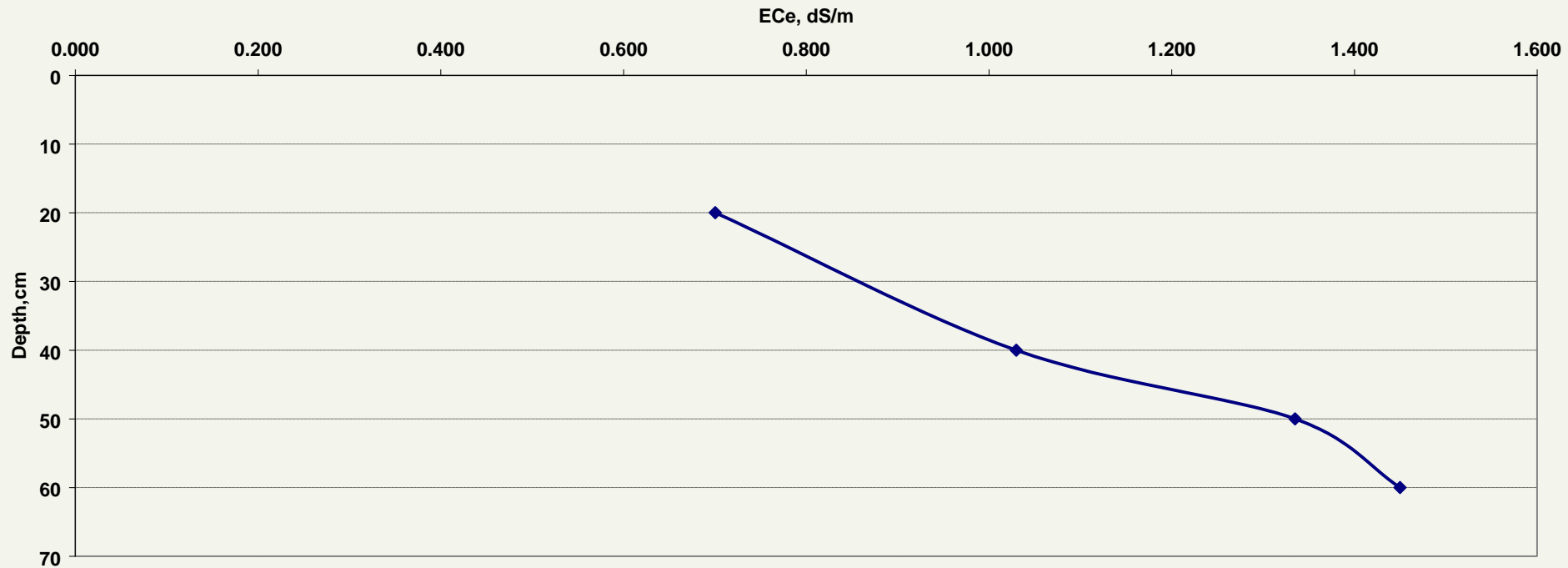
Soil Salinity : Stone fruit, drip

Stonefruit, drip (Pike) - June 2008: Depth vs ECe



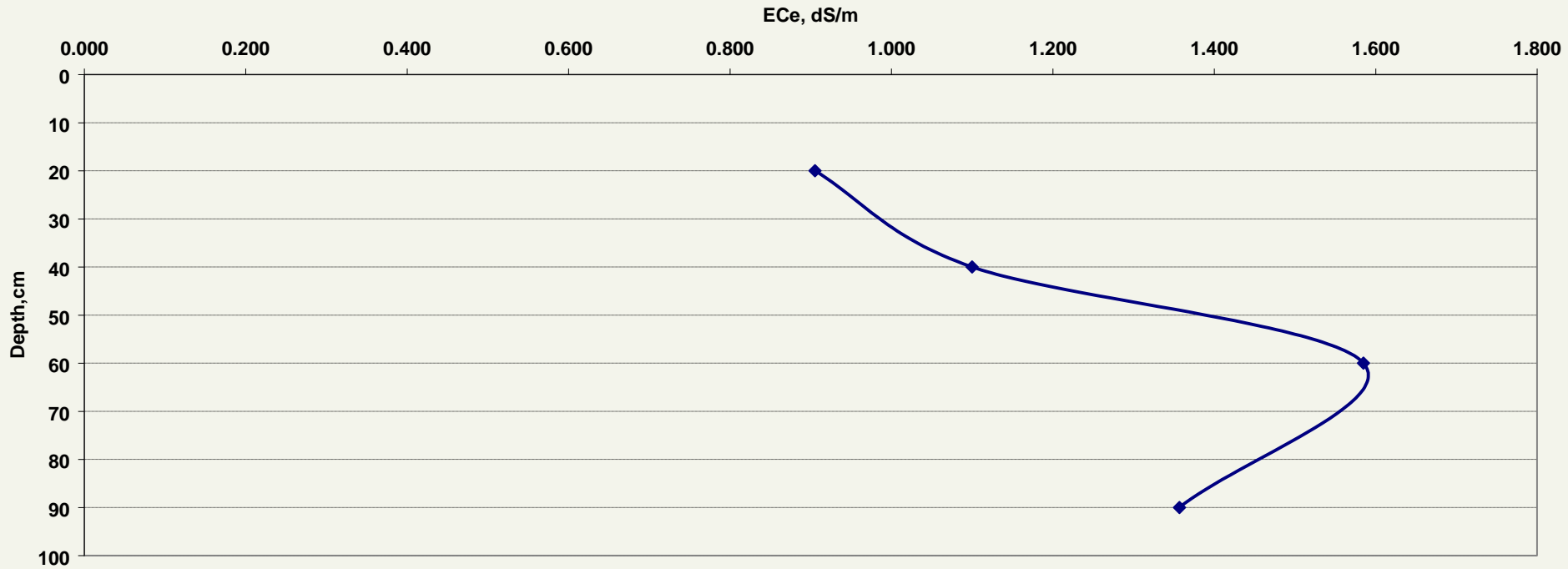
Soil Salinity : Wine grapes, drip (Paringa)

Winegrape, drip (Paringa) - June 2008: Depth vs ECe



Soil Salinity : Wine grapes, drip

Winegrape, drip (Lyrup) - June 2008: Depth vs ECe



Soil Water Monitoring by GBug (kPa)

Almonds, subsurface drip irrigation

