Are fruit dendrometers reliable to schedule irrigation in olive trees?
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Introduction

- Fruit growth:
  - Influenced by water availability
  - Influenced by leaf gas exchange
- Fruit dendrometers could be potentially used to:
  - Assess plant water status
  - Schedule irrigation
  - Predict fruit yield

Objectives

I. To evaluate the usefulness to assess water stress
II. To evaluate which is the best stress index derived from the fruit diameter variations
III. To evaluate the use of fruit dendrometers to schedule RDI in olive orchards

Results

- MXFD, MXTD and $\Psi_{\text{md}}$ show responses to the irrigation events
- MXFD has good visual correspondence with $\Psi_{\text{md}}$ and $\theta_s,\text{max}$

Material and Methods

Two irrigation treatments were tested:
- WW - well watered (100% IN)
- WS - water stress (45% RDI)
Six fruit dendrometers per treatment

Material and Methods

- $\Psi_{\text{md}}$ and $\theta_s,\text{max}$

Conclusions

- MXFD → best option from the indexes derived from fruit dendrometers
- Further studies are needed to validate the performance of these indexes and schedule deficit irrigation from its results
- Advantages: related to fruit production, supply information on the water available for fruit growth
- Disadvantages: installation (cables), data processing, short period of time, does not consider decreases in vegetative growth

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