

HOW TO IRRIGATE PEACHES IN FLORIDA

Carlos Zambrano-Vaca, Lincoln Zotarelli, Kelly T. Morgan, Kati W. Migliaccio, Richard C. Beeson Jr., and José X. Chaparro

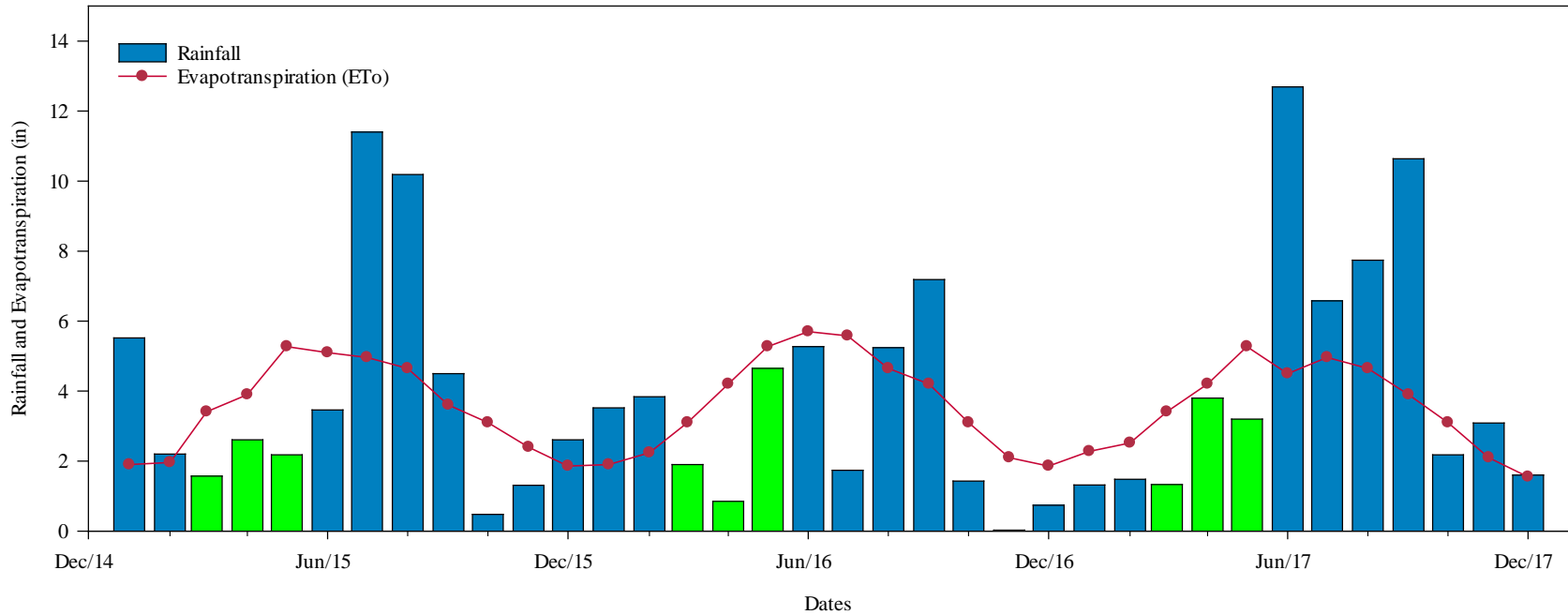


HOW IMPORTANT IS IRRIGATION?

- 40-year study found that in the U.S. crop losses
 - 7.2% diseases and insects
 - 16.2% excess water
 - 40.8% draught

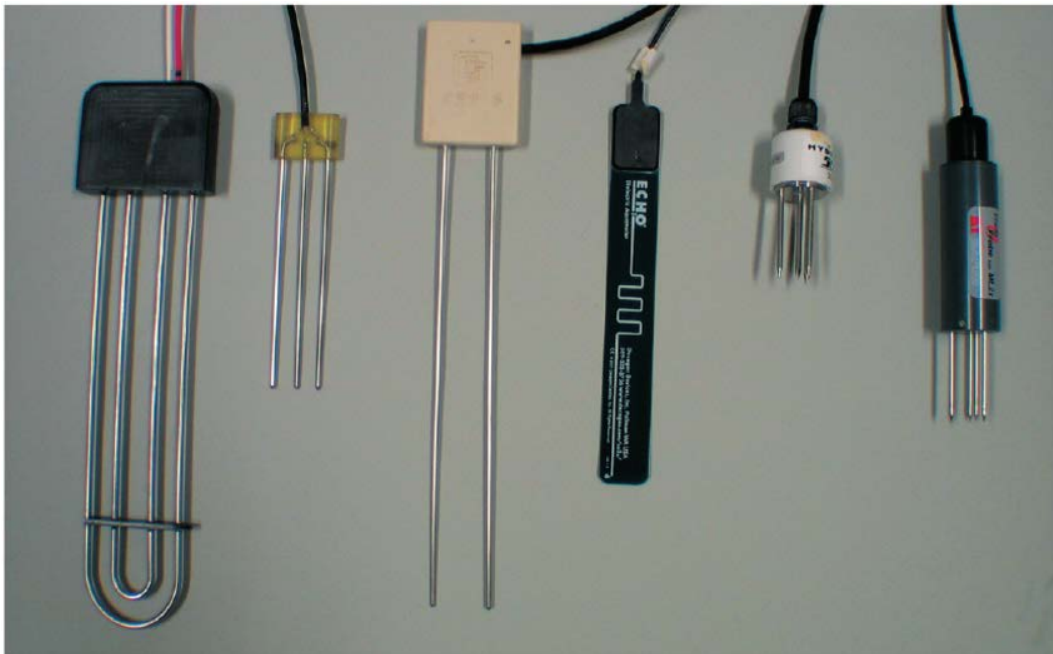


FLORIDA CONDITIONS

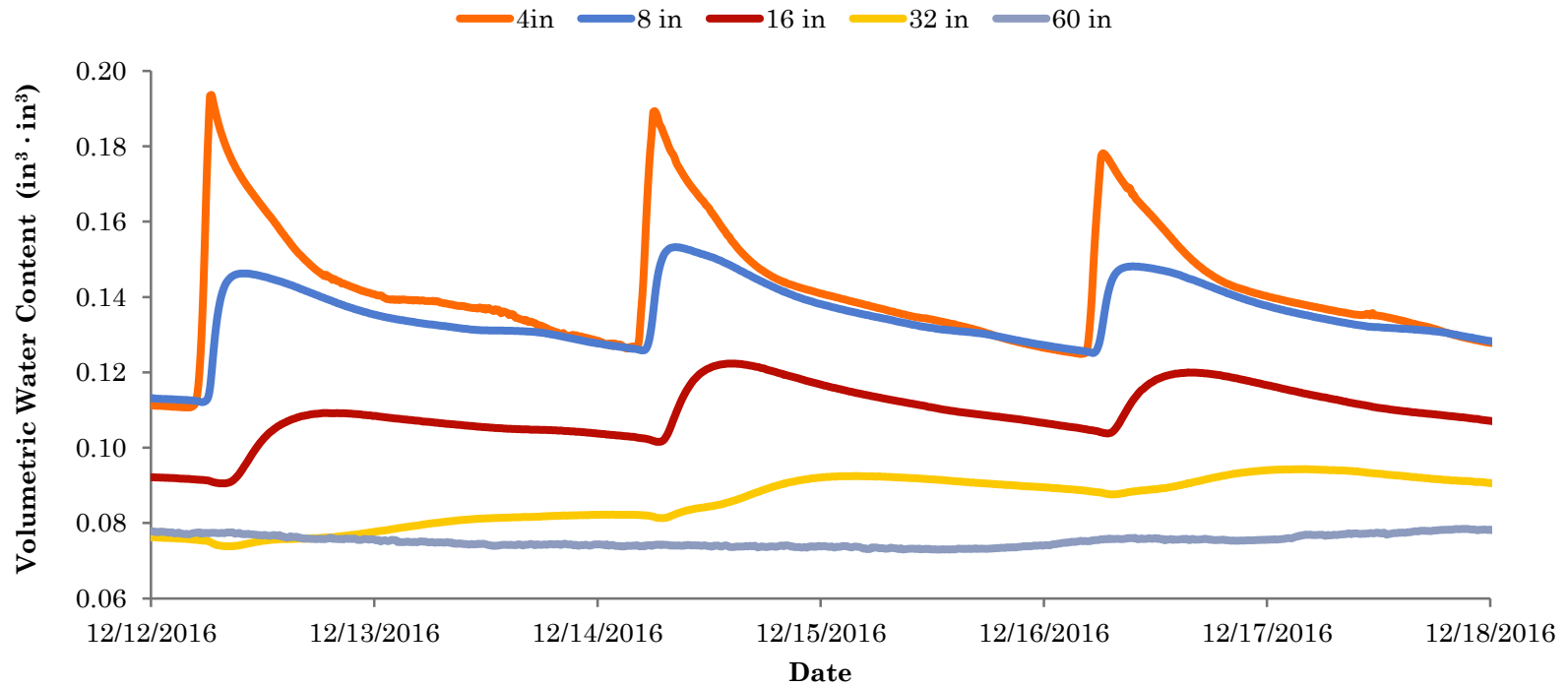


WHAT CAN WE DO?

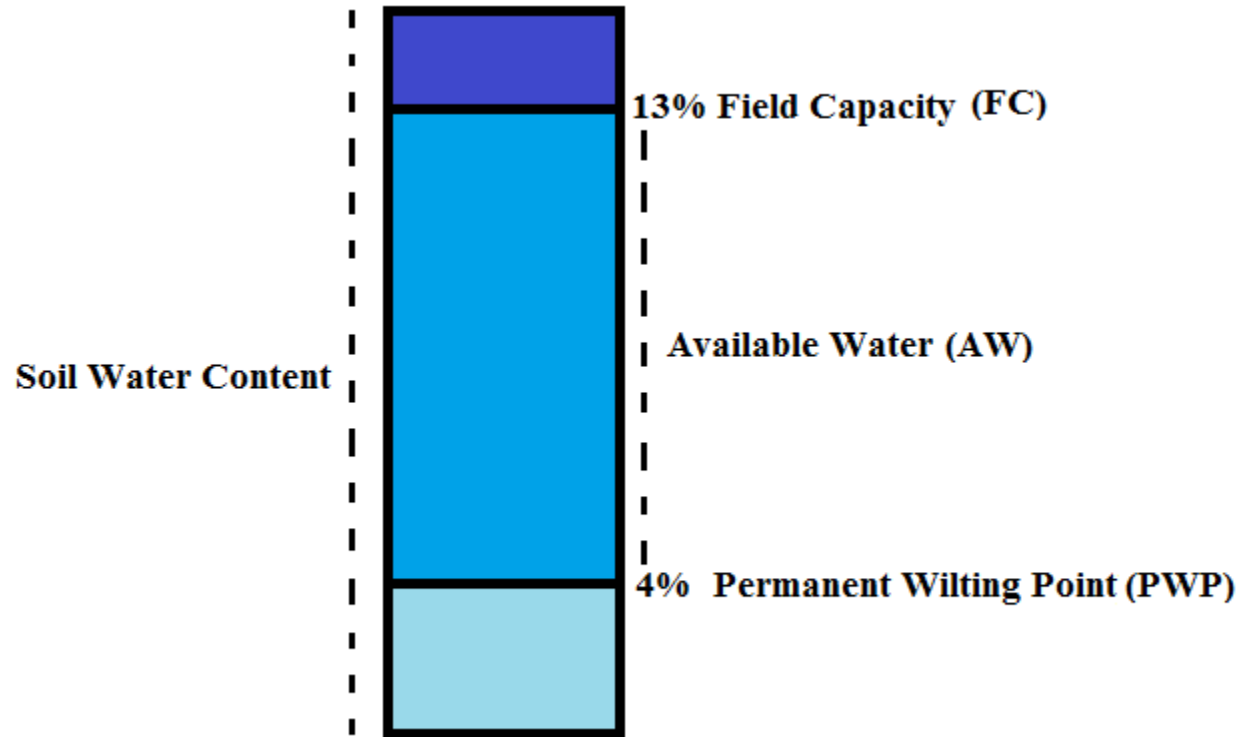
- Use Reference Evapotranspiration (ET_o).
 - <https://fawn.ifas.ufl.edu/>
- Use Soil moisture sensors.



SOIL MOISTURE



SOIL WATER AVAILABILITY

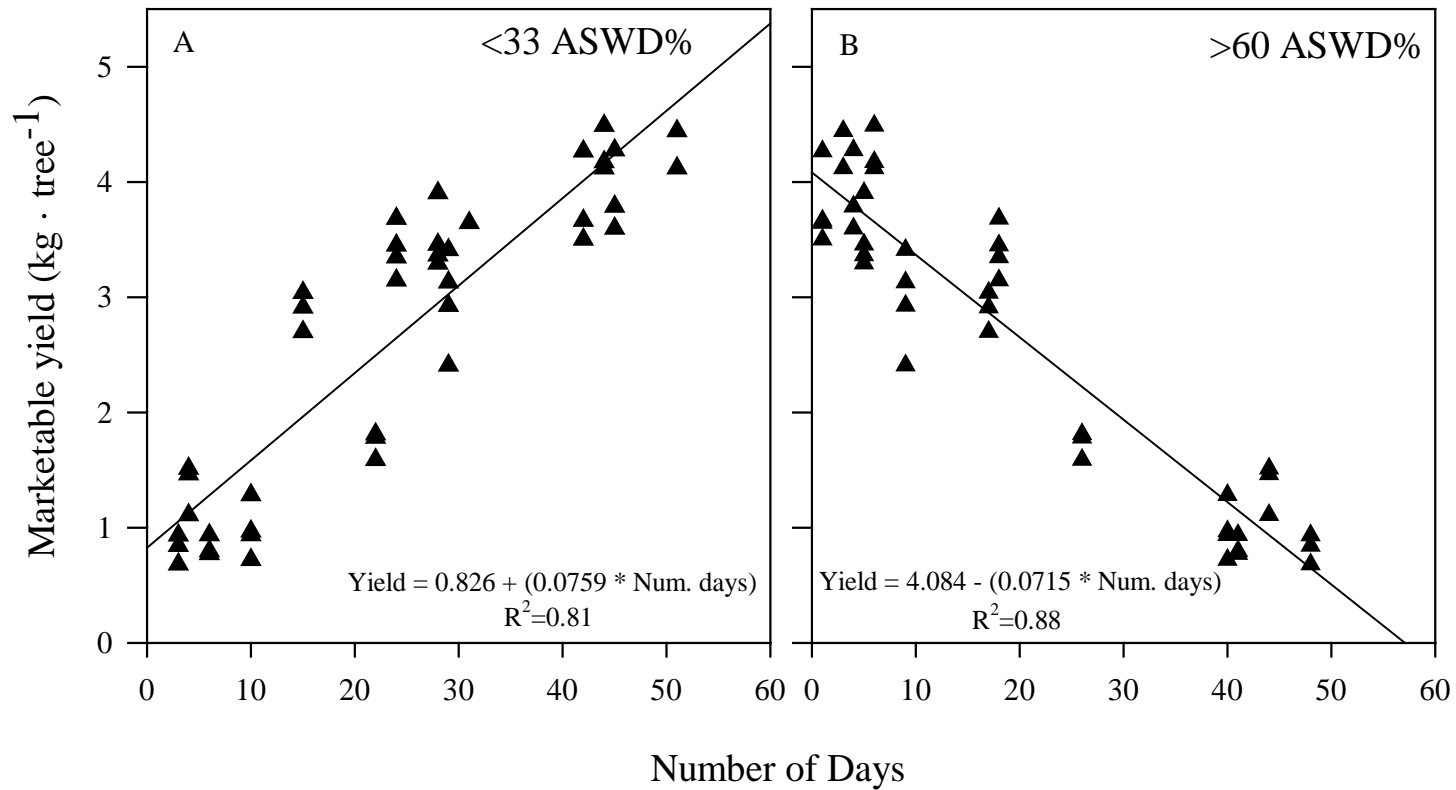


SOIL WATER AVAILABILITY

- FC =0.13 PWP=0.04 AW=0.09
- ASWD%= Available soil water depletion
- $ASWD\% = 1 - ((SWC - WP) / AW)$
- $ASWD\% = 1 - ((0.10 - 0.04) / 0.09) = 0.33$ or 33%



SOIL WATER AVAILABILITY



SOIL INFORMATION

- Soil survey

- <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Field capacity and permanent wilting point can be obtained from this website.



IMPORTANCE OF SOIL WATER AVAILABILITY

- Not all soil water content is available for the plant.
- Water stress can occur before permanent wilting point.
- Sandy soil have low water retention and Field capacity is relatively low
- Every orchard should be managed individually



USING ETO FOR IRRIGATION

- 1 in of water = 0.62 g/ft²
- ETo = 0.25 in
- Rate: 16 gph
- Emitter area: 154 ft²
- Gallons of water need:

$$\text{Water} = (\text{Emitter area} * 0.62 * \text{ETo}) = 23.87 \text{ gallons}$$

$$\text{Pulse time} = (\text{Volume} / \text{rate})$$

$$\text{Pulse } 23.87/16 = 1.5 \text{ Hours}$$

$$K_c = 0.55$$

$$K_c = 0.9$$

$$K_c = 0.65$$



Thanks

czambrano@ufl.edu

813-360-9917

