



# Surface Renewal: A New Tool to Help Growers Manage Water to Meet Their Production Goals

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# **Brief Technology Background**

## **How Growers Use the Technology**

**What is the water status of my field?**

**What is the water status of my field?**

**What do I do about it?**

# **Tule's Three Building Blocks**

**1. Water Stress**

**2. Actual Evapotranspiration**

**3. Irrigation Application Amounts**

**What is the water status of my field?**

**1. Water Stress Level**

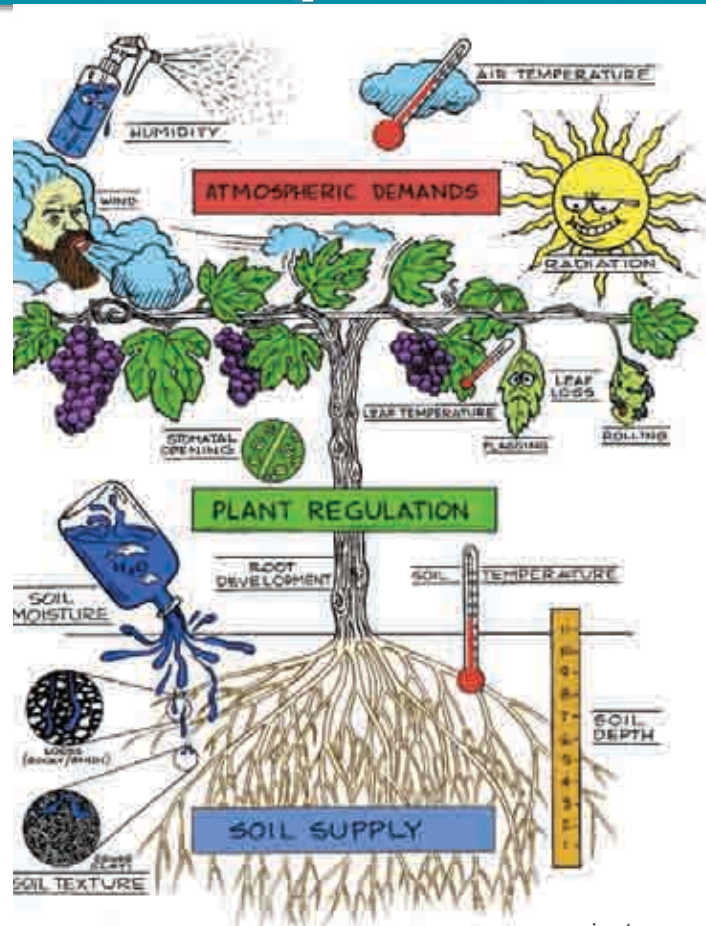
**What do I do about it?**

**2. Actual Evapotranspiration**

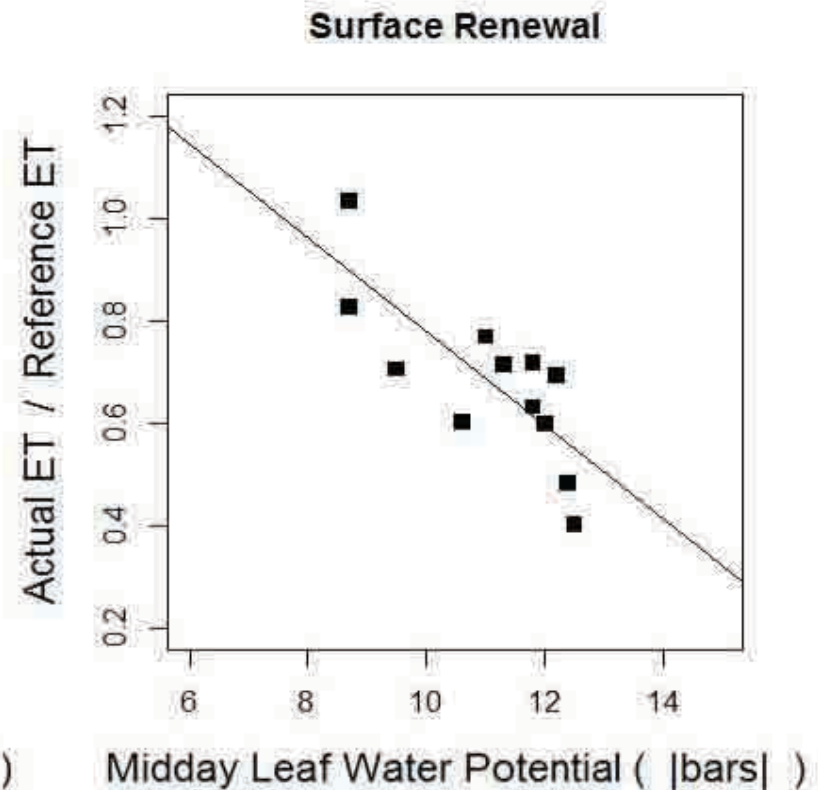
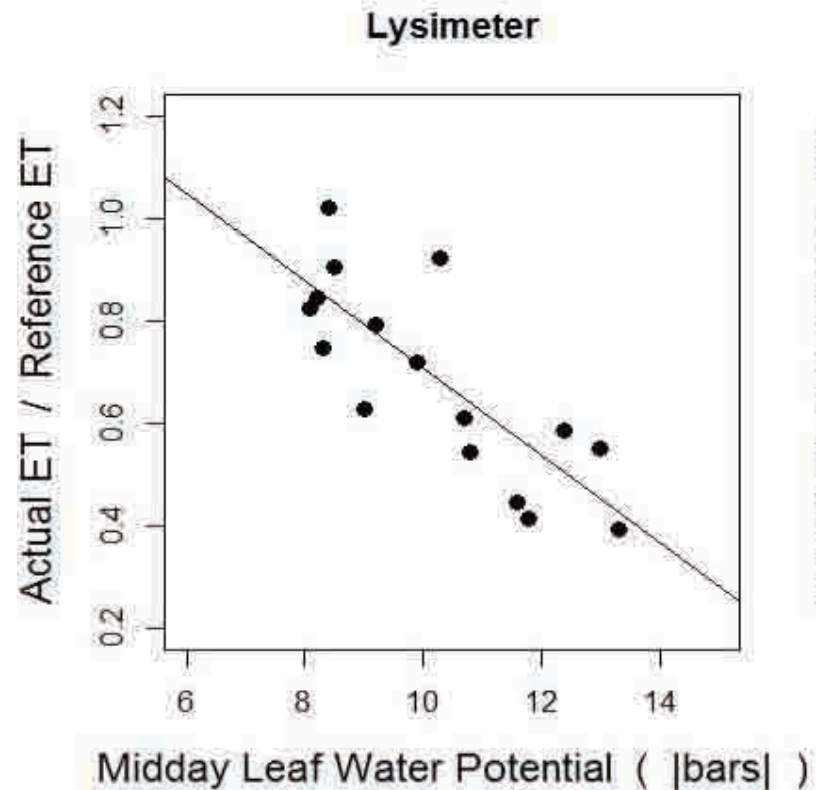
**3. Irrigation Application Amounts**



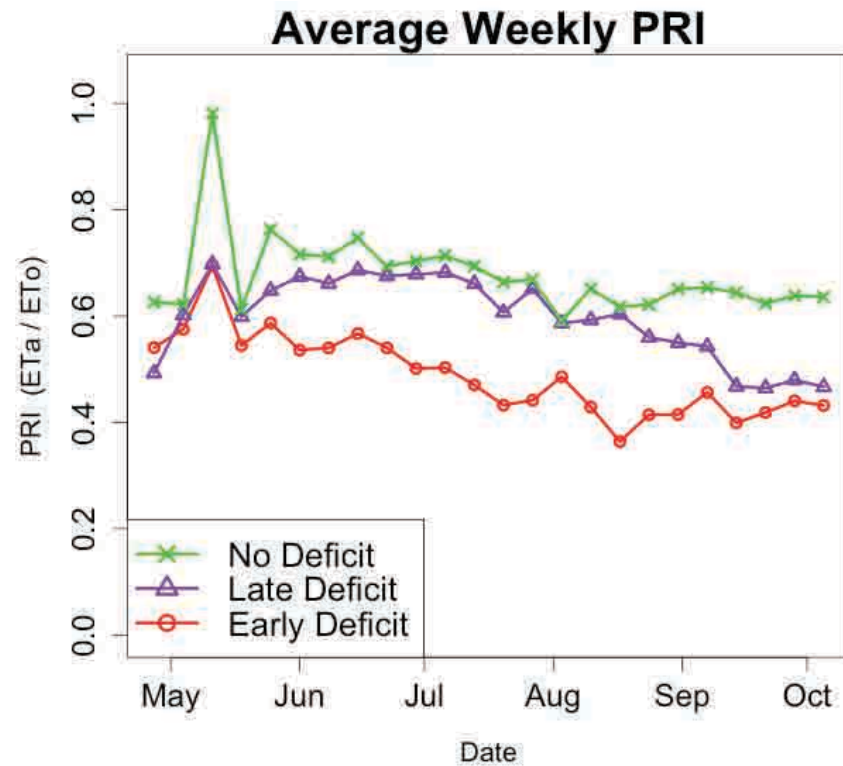
# Soil Plant Atmosphere Continuum



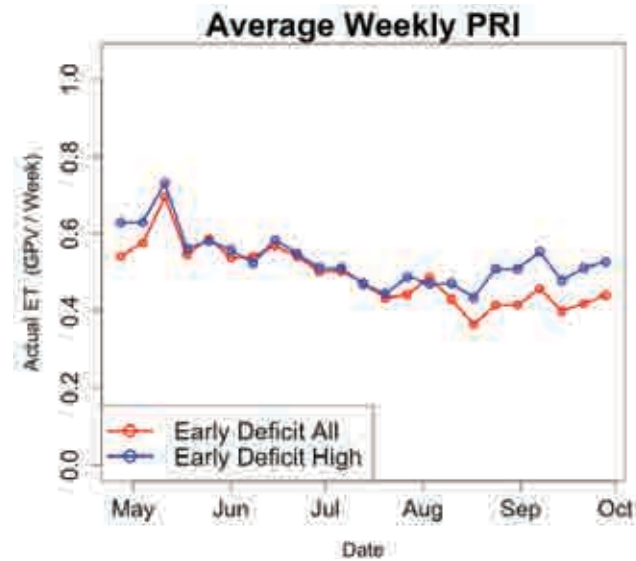
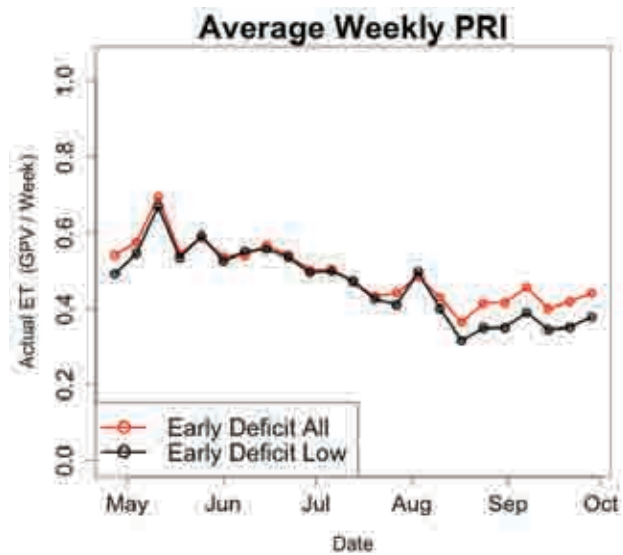
# 1. Plant Response Index: Water Stress Level



# 2014 Season Summary



# 2014 Season Summary



## 2. Actual Evapotranspiration



- Irrigate to replace what was lost to ET
- Not CIMIS
- 1 - 10 acres
- Wind eddies transport water vapor

### 3. Irrigation Application Amounts



# Surface Renewal

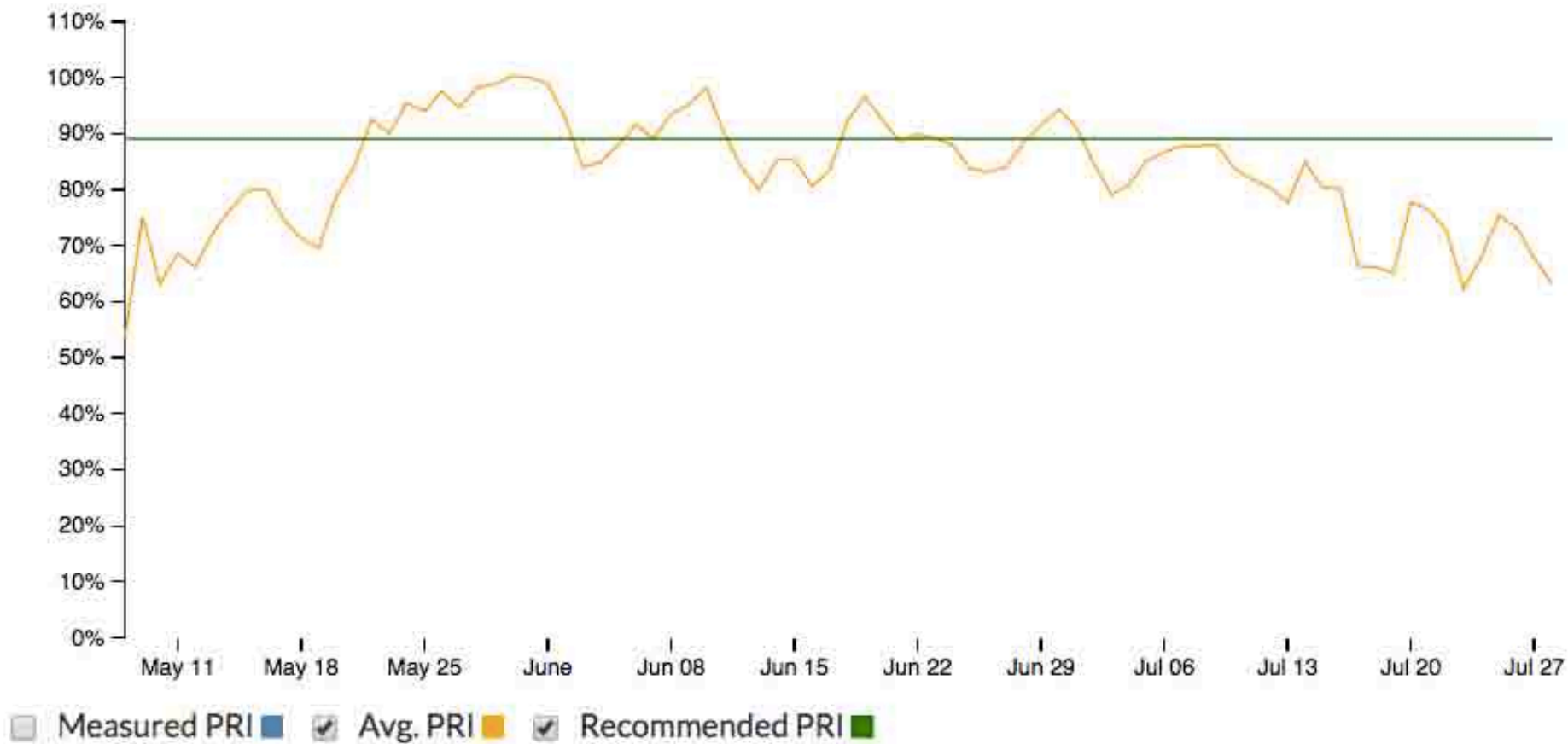


- UC Davis, USDA-ARS
- Paw U, Snyder, McElrone, and Shapland

# **Brief Technology Background**

## **How Growers Use the Technology**

## Plant Response Index (Actual ET / Reference ET)

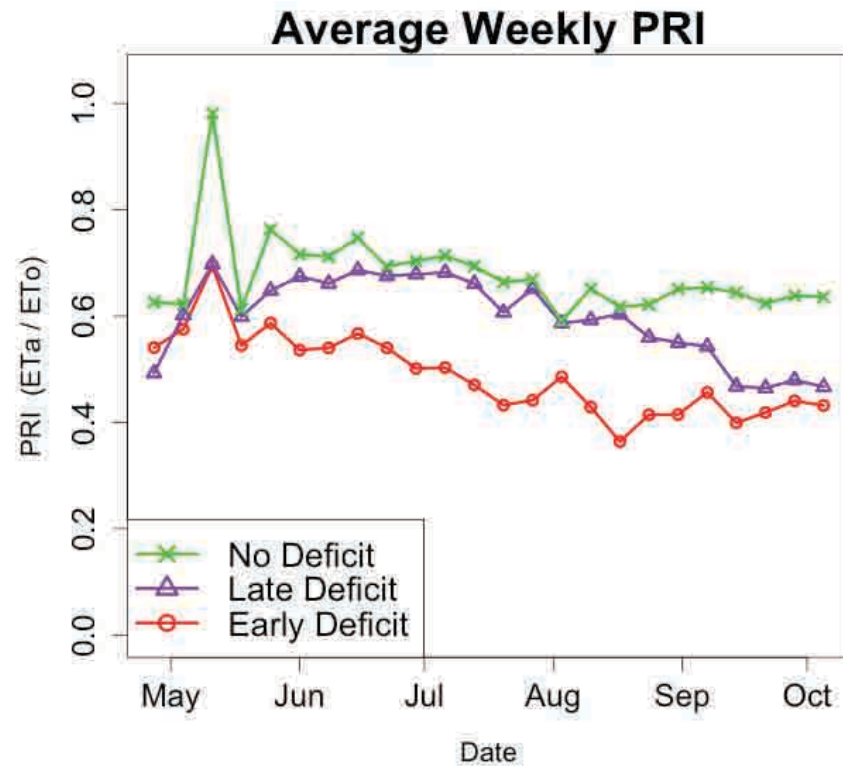


## Quantity of Water (gallons per vine) to Apply As Percentage Last Week's Actual ET

\*The highlighted column below is Tule's irrigation recommendation

Percentage of Actual ET (gallons per vine)		
0%	10%	20%
0.00	2.14	4.28

# 2014 Season Summary



# 2014 Season Summary

**1. Average Weekly Irrigation: 4 GPV**

**2. Early Deficit:**                      **< 6" TAW.**  
   **3 GPV (or 10 in Aug. & Sept.)**

**Late Deficit:**                        **6 - 12" TAW**  
   **4 GPV**

**No Deficit:**                         **> 12" TAW**  
   **6 GPV**

**3. Examples and Grower Experiences**



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