



## Apogee Instruments SI-111 Infrared Radiometer Crop Water Stress Index

Crop Water Stress Index is a means of irrigation scheduling and crop water stress quantification based on canopy temperature measurements and prevailing meteorological conditions. Plant temperature is an indicator of plant water status because stomata close in response to soil water depletion causing a decrease in water uptake and an increase in leaf temperature.

Precise measurements, particularly canopy temperature, are required. Apogee Infrared Radiometers have been used by Dr. Suat Irmak, of the University of Nebraska, in his CWSI research.

### Reference Article

Payero, J. O., S. Irmak. 2006. Variable upper and lower crop water stress index baselines for corn and soybean. *Irrigation Science*, 25 (1):21-32



Calibration of infrared thermometers in the laboratory using a "black body" calibration source.



Field setup used to install two infrared thermometers above the crop canopy. One sensor was pointing east and another was pointing west.

### Application Summary

#### Summary

Using infrared radiometers to determine water schedule for plants.

**Apogee Sensors Used**  
SI-111 Infrared Radiometer

**Organization**  
Dr. Suat Irmak of the University of Nebraska

**Location**  
Nebraska

