

New Project: Understanding Environmental Conditions in Polytunnels in Ventura County

We are initiating a study of environmental conditions in polytunnels in Ventura County. The overall goal is to investigate the effectiveness of *Wet Bulb Globe Temperature* (WBGT) sensors for monitoring and predicting the probability of heat stress to help growers manage this risk in workers inside and outside polytunnels.

Why is this study needed?

- High temperatures, humidity, and limited air movement inside polytunnels increase the risk of heat stress in agricultural workers and reduce worker productivity
- Accurate and real-time measurements are needed to help growers make informed management decisions
- WBGT is recommended by OSHA as the most accurate measure of heat stress risk but is not widely known or utilized yet
- Weather stations or handheld instruments with special sensors can measure WBGT but need to be tested for accuracy and user-friendliness



How does this study measure heat stress risk?

The *University of California Cooperative Extension, Ventura County* will conduct a 1-year study to measure environmental conditions inside and outside polytunnels.

- Simple and portable **solar-powered weather stations** (5-6 ft high) by Perry Weather, Inc. will be installed to collect temperature, relative humidity (RH), wind speed and direction, solar radiation, and WBGT. There will be two per location, one inside a polytunnel and one outside.
- Data will be analyzed to determine how well conditions inside polytunnels can be predicted based on outside conditions
- Hand-held instruments will be tested and validated for use by growers.

What are we looking for?

Two polytunnel sites (1 coastal & 1 inland) with relatively new cladding and, ideally, similar crops.

How will you benefit by participating?

- You will have 24/7 access to weather data updated every 15 minutes on computer screens or mobile apps for one full year (data will be kept anonymous).
- You will receive alerts via text or push notification when heat stress risk thresholds are reached, allowing you to take action to protect workers and crops.
- You will have the opportunity to test and evaluate hand-held devices for assessing heat stress risk.
- You will have access to reports and educational materials developed by the University of California research team.



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