METER
ENVIRONMENT

WHAT ARE INACCURATE PREDICTIONS COSTING YOU?

REDUCE DISEASE AND PEST PRESSURE FOR HIGHER YIELDS

CASE STUDY: WASHINGTON STATE AGWEATHERNET

Washington State University runs the Washington State AgWeatherNet. Each green dot in Figure 1 is the location of an Ag weather Net tier-1 weather station. These stations are concentrated primarily in the agricultural regions of Washington State in apple orchards and other high-dollar crops that (along with California) feed much of the United States.
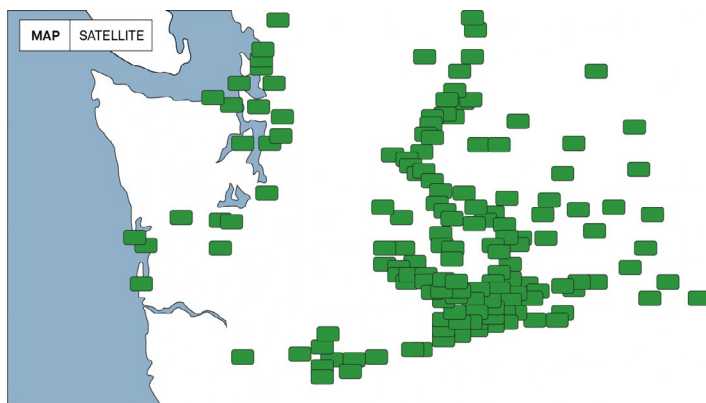
BETTER DATA. BETTER PREDICTIONS. BETTER YIELD.

The only way to get accurate GDD predictions is to measure temp in your field. We made the ATMOS 41 so you can afford to install a dependable, research-grade weather station in every field for more accurate predictions.

Figure 1. Locations of tier-1 AgWeatherNet stations
(Original map found at: weather.wsu.edu)

AgWeatherNet tier-1 weather stations have a measurement suite tailor made for the growers in this particular region. The AgWeatherNet ingests data from these stations and outputs a number of modeled parameters like disease models, pest models, frost prediction, and frost monitoring. These models are extremely valuable for the producers in the region, who actually pay for the system.

What's interesting about AgWeatherNet is that even though it looks like a dense spatial network, these stations are many kilometers apart. So an accurate tier-1 station sitting in a valley might measure 2 °C different than those at an orchard at the top of the hill. This means if they continuously monitor temperature and humidity in the valley and give a prediction for a fungal disease, that prediction will be different from the reality at the top of the hill.

To solve this problem, the AgWeatherNet allows individual growers to purchase and install tier-2 systems.
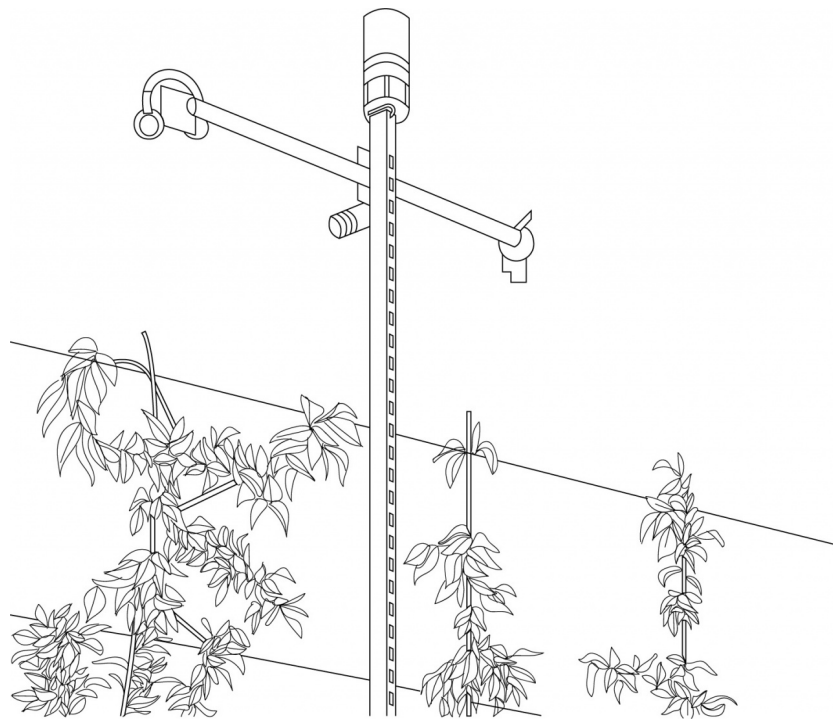

Figure 2. Simplified outline of an ATMOS 41 tier-2 weather station setup used in AgWeatherNet

Figure 2 shows an ATMOS 41 all in one weather station used in the AgWeatherNet. It doesn't have the accuracy specs of the tier-1 stations, but the lack of accuracy at the point scale is almost inconsequential compared to the spatial difference in the weather parameters as you move away from the tier-1 sites. These tier-2 stations fill the gaps in tier-1 observations and AWN can then use artificial intelligence along with these observations to perform hyper-local predictions for the growers who put these stations in. This strategy has been successful at helping to predict mold, pest

outbreaks, or frost events at a particular grower's location. It is easy to see how each weather station type plays a key role in providing stakeholders with critical data for decision making.

HOW TO NAIL YOUR ESTIMATES AND ACT AT THE RIGHT TIME

When you use inaccurate data, the further you are into the growing season, the greater the estimate will differ from reality. For longer season crops, the difference could be quite significant, which is a problem because plant maturity, flowering, and pest/disease GDD targets often have tight windows.

In this 20-minute webinar, Dr. Colin Campbell discusses what you need to know for more accurate models, so you can be confident in your management decisions.

ATMOS 41: ACCURACY—WITHOUT ALL THE COMPLEXITY

The accurate, affordable ATMOS 41 weather station was designed for continuous deployment in harsh climates, such as Africa, which means there are no moving parts to fail. Setup is incredibly easy, and maintenance has been simplified to the maximum because there's never any mechanical wear. No oiling or replacing bearings. Just reliability you can continue to count on.

VIEW ATMOS 41 WEATHER STATION