

**Washington Grain Commission**  
**Wheat and Barley Research Annual Progress Reports and Final Reports**

**Project #:** 3019-3189  
**Progress Report Year:** *1 of 1*  
**Title:** Weather Stations to Support Variety Testing and Wheat Research  
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**Executive summary:** The purpose of this project was to obtain and install Tier 2 (Atmos 41) weather stations at all variety trial locations that were greater than 5 miles from the nearest WSU AgWeatherNet (AWN) station. Data collected includes air temperature, humidity, dewpoint, wind speed and direction, precipitation, solar radiation, soil temperature, soil moisture, and leaf wetness. The original locations identified included Creston (20 mi.), Bickleton (18 mi.), Connell (15 mi.), Lamont (12 mi.), Plaza (12 mi.), Fairfield (11 mi.), Colton (11 mi.), Mayview (10 mi.), Dusty (8mi.), Endicott (6 mi.), Palouse (6 mi.), Moses Lake (6 mi.), and Reardan (5 mi.) plus Walla Walla (4 mi.) because of the sharp rainfall gradient in the area. Stations have successfully been installed at all sites except Plaza because that location is transitioning to a new cooperator. It will be installed spring of 2021 once the new cooperator is identified. All newly installed stations are now within two miles of the trial and all but three locations are less than one mile. While these stations can be moved, they are meant to be stationary for consistent historical data. Weather data is updated every 15 minutes onto the WSU AgWeatherNet website (<https://weather.wsu.edu/>). Connectivity is limited by cell phone reception and so stations at Endicott and Lamont are currently unable to update regularly to the website, but are still collecting weather data that can be harvested by hand. Eventually a directional antennae will be connected to the stations to boost signal. The VTP already has or is currently coordinating with AWN program to move some preexisting stations closer to trials at Harrington, Farmington, Anatone, St. Andrews (complete), and St. John (complete).

**Impact:** Short term impacts include the ability for the VTP to more efficiently plan maintenance trips based on weather conditions for locations that require significant travel time. Cooperators and nearby growers also use these stations to plan field work. 2020 in-season rainfall totals were included in the final variety testing technical report for spring trials, but not winter trials since they were not installed until halfway through the growing season (will be included in subsequent years). This information will be useful in interpreting results of the trials and will provide a historical weather database moving forward for researchers to create growth models and disease prediction models. Dr. Camille Steber regularly uses AWN weather station data to compare with falling number data and better weather data will help with our understanding of late maturity alpha amylase (LMA) occurrence in wheat.

