

August 10, 2018

Final report for Enviro-weather Station located at 3471 Resort Pike Rd., Petoskey MI.

On June 8th of this year the Petoskey Enviro-weather station became active for all of the wineries located in the Petoskey area completing the original goals of the project. This final report encompasses the time since activation.

SPECIFIC OBJECTIVES: The funds from the MGWIC grant would provide the initial installation of the Enviro-Weather Station, and well as 2 years of operational funds. After which, the annual operations expenses would be borne by the members of the Bay View Wine Trail.

PROJECT SCOPE/CONTEXT: This project will provide MSU extension better information of pest management and weather-related research in an area of the state not previously monitored. And will provide this important information to other organizations involved in the grape and wine industry currently engaged in our region such as P45, and the Straits Area Grape Growers Association.

PROJECT EXPENSES:

The MSU Weather Station invoice of \$10,000.00 included all materials and labor for the installation of the weather station. The \$10,000.00 also includes 3 years of maintenance fees and network charges.

TESTAMONIALS-

Mackinaw Trail Winery has used the data from the weather station on 3 occasions in adjusting their spray program based on temperature, wind, and humidity.

Mackinaw Trail Winery has used the soil moisture information for determining draught stress and irrigation decisions on vines planted in June of this year.

Mackinaw Trail Winery has begun using the accumulated GDD data for tracking veraison periods and sugar development for future year to year comparisons.

Crooked Vine Vineyard and Winery used the GDD data to get an idea of when spraying may be needed for rose chafers and in July for Japanese beetles.

Now comparing GDD with last years history (from our own records) to measure start and finish of grape veraison. Will use as an indicated for netting the vines to keep birds off.

Walloon Lake Winery has used the weather station's rain gauge and soil water balance information extensively when determining irrigate time during a drought period this summer.

They have also used the station's humidity, temperature, and wind speed readings to determine when to spray fungicides, etc. Walloon Lake Winery will continue to use the station frequently to maintain these vineyards and new ones being planted, as well as to correlate weather data with tasting room visits.

Weather information used by the wineries in the Petoskey area-

Day	Date (2018)	Max Air Temp (degrees F)	Min Air Temp	Max Soil Temp at 2 inches	Min Soil Temp at 2	Max Soil Temp at 4	Min Soil Temp at 4	Rainfall (in)	Rainfall (in)	Max Soil moisture	Min Soil moisture	Max Soil moisture	Min Soil m
Sun	6/10/2018	77.4	54.3	78.8	64.7	82	63.8	0	0	0.047	0.046	0.081	0.08
Mon	6/11/2018	81.3	49	80.8	64	84.3	62.8	0	0	0.047	0.045	0.081	0.081
Tue	6/12/2018	78.9	50.6	82.3	66.6	85.7	65.7	0	0	0.046	0.044	0.082	0.081
Wed	6/13/2018	74	52.8	79.5	70.4	82.5	70.3	0.08	0.08	0.047	0.045	0.082	0.081
Thu	6/14/2018	76.9	46.3	82.3	65	85.9	63.7	0	0.08	0.046	0.045	0.082	0.081
Fri	6/15/2018	77	48.8	76.2	67.1	76.2	65.9	0	0.08	0.045	0.044	0.082	0.081
Sat	6/16/2018	72	61.9	72.1	68.1	72	67.7	0	0.08	0.045	0.044	0.082	0.081
Sun	6/17/2018	90.4	64.2	81.6	67.6	85.2	67.6	0.32	0.4	0.057	0.044	0.082	0.081
Mon	6/18/2018	72	59.1	77.4	70.4	77.6	69.6	0.41	0.81	0.073	0.053	0.083	0.082
Tue	6/19/2018	77	51.9	77.5	64.2	80.4	63.1	0	0.81	0.063	0.057	0.082	0.081
Wed	6/20/2018	76.3	51.6	81.1	65	84.9	64	0	0.81	0.058	0.055	0.083	0.081
Thu	6/21/2018	74.8	55.1	81.8	66.7	85.4	65.7	0	0.81	0.056	0.054	0.083	0.082
Fri	6/22/2018	78	49.4	79	65.9	81.8	64.5	0	0.81	0.055	0.053	0.083	0.082
Sat	6/23/2018	66.4	53.9	74.2	66.8	73.2	66.2	0.64	1.45	0.087	0.052	0.083	0.082
Sun	6/24/2018	68.8	53.9	71.9	64.4	73.4	63.9	0	1.45	0.084	0.076	0.083	0.083
Mon	6/25/2018	74.1	49.1	77.6	61.8	81.2	60.3	0	1.45	0.076	0.072	0.084	0.083
Tue	6/26/2018	80	45.8	77.6	62.5	81.6	60.8	0	1.45	0.072	0.07	0.085	0.084
Wed	6/27/2018	78.9	58.4	81.1	67.5	84.2	67	0	1.45	0.07	0.067	0.087	0.085
Thu	6/28/2018	84.5	54.1	86	69.9	89.9	69.3	0	1.45	0.068	0.066	0.088	0.086
Fri	6/29/2018	93	58.3	87.9	72.5	91.8	71.7	0	1.45	0.066	0.065	0.088	0.087
Sat	6/30/2018	95.6	75.6	90.8	78.2	94.3	78.4	0	1.45	0.065	0.063	0.089	0.088
Sun	7/1/2018	95.9	71	90.5	79.8	93.8	79.7	0.14	1.59	0.067	0.062	0.09	0.088
Mon	7/2/2018	83.2	61.2	87.6	74.8	91	73.7	0	1.59	0.065	0.062	0.09	0.089
Tue	7/3/2018	93	63.2	90.6	75.1	94.2	74.2	0	1.59	0.062	0.06	0.09	0.089
Wed	7/4/2018	91.2	66.5	92.4	78.4	96	78	0	1.59	0.06	0.059	0.09	0.089
Thu	7/5/2018	83.7	65	89.5	80.3	92.6	80	0	1.59	0.059	0.057	0.09	0.089
Fri	7/6/2018	74.9	53.6	87.6	74.6	90.6	73.3	0	1.59	0.058	0.055	0.09	0.089
Sat	7/7/2018	80.1	49.6	87.2	73	90.3	71.5	0	1.59	0.056	0.054	0.089	0.088
Sun	7/8/2018	86.3	60	87.6	74	90.8	72.8	0	1.59	0.055	0.053	0.089	0.088
Mon	7/9/2018	85.5	64.3	87.4	76.2	90.6	75.5	0	1.59	0.053	0.051	0.089	0.088
Tue	7/10/2018	83	52.1	87.7	74.3	90.9	73	0	1.59	0.052	0.049	0.089	0.088
Wed	7/11/2018	82.2	50.8	87.3	74	90.3	72.7	0	1.59	0.05	0.048	0.088	0.087
Thu	7/12/2018	80.9	60.9	82.6	75.3	81.8	74.5	0	1.59	0.048	0.047	0.088	0.087
Fri	7/13/2018	82.1	66.2	80.7	73.2	82.7	72.6	0.28	1.87	0.066	0.047	0.087	0.086
Sat	7/14/2018	84.5	65.2	86.8	73.3	90.3	72.8	0.04	1.91	0.055	0.052	0.087	0.086
Sun	7/15/2018	84.4	62.7	89.3	75.1	92.9	74.6	0	1.91	0.053	0.05	0.088	0.087
Mon	7/16/2018	82.1	64.5	88.7	77.1	91.9	76.5	0	1.91	0.051	0.048	0.088	0.087
Tue	7/17/2018	71.3	57.8	86.1	74.8	88.9	73.7	0	1.91	0.049	0.046	0.088	0.086
Wed	7/18/2018	72.9	43.1	85.3	71	88.4	69.1	0	1.91	0.047	0.044	0.087	0.085
Thu	7/19/2018	84.1	46.4	85.9	71.1	89.1	69.5	0	1.91	0.045	0.043	0.086	0.085
Fri	7/20/2018	84.1	60.9	82.3	74.9	84.4	74.1	0.22	2.13	0.05	0.042	0.085	0.084
Sat	7/21/2018	71.5	65.4	77.1	71.8	76	71	0.32	2.45	0.072	0.048	0.085	0.084
Sun	7/22/2018	81.4	65.3	76.8	69.7	78.5	69.2	0.23	2.68	0.085	0.064	0.085	0.083
Mon	7/23/2018	76.2	64.3	74.8	70.2	75.8	69.6	0.01	2.69	0.066	0.063	0.084	0.083