

Canada: Helping Icewine Growers in Ontario

Automatic Weather Stations for Climate Services in Viticulture



Intro

While the connoisseur associates icewine with a very sweet taste, balanced by high acidity, and a hefty price tag, the producers rather think of the enormous challenges this type of wine poses. Icewine is made from grapes that have been frozen while still on the vine. To produce quality icewine it is of the essence to keep the grapes clear of botrytis, to permanently monitor the temperature in order to pick the grapes at the right time, and, once this time has come, to pick all the grapes quickly, often within hours. Therefore icewine production in North America is limited to very few suitable areas. Approximately 75% of Canadian icewine comes from Ontario, in particular from Niagara, Lake Erie North Shore and Prince Edward County.

Task

Several years ago the Grape Growers of Ontario launched the "Environmental Information Monitoring Program". To quote from their annual report 2009, the "project objective was to create a new environmental information monitoring program to improve the technical understanding and monitoring of microclimate zones within sub-appellations. Enhanced expert advisories and public access to weather based services via a dedicated website module would deliver site specific weather forecast, dewpoint forecast, near real time temperature inversion monitoring, daily evapotranspiration rates, daily disease risk indexes, as well as heat unit accumulation, solar radiation accumulation and raw weather data."

Solution

60 ADCON weather stations in 3 grape growing appellations, Niagara, Lake Erie North Shore and Prince Edward County, were installed. These weather stations are incorporated into the Vine and Tree Fruit Innovations website, www.vineinnovations.com. The stations deliver raw weather data, which is subsequently converted into ice wine hours calculations, Bud hardiness, temperature inversion maps,

Case Study

Application
Monitoring

Location
Ontario, Ca

Products deployed
A850 Teler
A753 addW
ADCON TR
ADCON WE

Participants
Grape Growers of Ontario
Ontario Grape Growers
(OGWR)

Parameters
Air temperature
Precipitation
Leaf Wetness
Solar radiation
Wind speed

Participants
Weather IN

rainfall, GDD (Growing Degree Days) and DSV (Disease Severity Value) models for grape growers, agronomists, organizations and researchers for free access to monitor the current season crop.

During the 2016 season, Weather INnovations Consulting LP operated and maintained the network and performed regular maintenance throughout the OGWRI Weather Monitoring Network, including calibration of the rain gauges in the spring, temperature validation of temperature sensors in the fall before the ice wine harvest, system upgrades where applicable and repair work for damaged and/or delayed stations during the season.

Summary

The ADCON weather network has allowed growers to capture the extreme drought that occurred in the summer of 2016 and the following warm winter in the Niagara region. The most popular models accessed are ice wine hours, temperature inversion maps and overnight low maps through the winter months by wineries to monitor if they need to implement protective measures for the vines. Having the weather data online has also allowed growers to make timely irrigation decisions. The tool has proven vital to the growers, is universally accepted and will certainly be extended.

ADCON Products deployed in this project:

[A850 Telemetry Gateway](#)

[A753 addWAVE GPRS](#)

[540mA Solar Panel](#)

[Adcon TR-1](#)

[Adcon WET](#)