

Plain Language Research Summary - AgriScience Grape & Wine Cluster - 2024-2025

Activity #7: Precision management of grapevine stress and development under the challenges of climate change

Principal Investigator(s): Dr. Ben-Min Chang (AAFC Summerland)

1. What is the overall focus of this research activity?

The frequency and magnitude of extreme weather events will increase due to climate change. In the Okanagan valley, drought and heatwaves are highly concerned weather events that could challenge the production of wine grapes. Better grapevine stress monitoring and mitigation strategies will be needed for stabilizing production and improving fruit quality. This research activity will integrate plant stress sensing technologies, geographic information systems, existing cultural practices, and automatic control technologies for drought and heat stress management.

2. What are the main progress updates/milestones in terms of work that was done on this research activity <u>this year</u>?

The Risk Management Funding supports part of this activity while the funding is not available during 2023-2024. New data transmission method (LoRa based technology) is tested. This new method will allow us to build a decentralized sensor or stress monitoring networks to represent a vineyard block better. Backlogged (since 2019) vineyard characteristics data had been entered into the GIS database. Due to funding restrain, many activities not fully completed. An experimental vineyard for rootstock and irrigation frequency trial had been planted. Trellis system is incomplete. Devices to measure light interception (El Paso scanner) for crop coefficient estimation is close to be full developed. The reference sensor is incomplete. Mini-Lysimeter (Poor's lysimeter) for reference grape evapotranspiration monitoring is close to be completed. The prototype will be tested in 2025. Potted vines for horticultural oil phytotoxicity had been prepared. The sensor and control systems for canopy cooling had been secured.



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3. What is this research activity's intended impact on the Canadian grape and wine industry? What benefits could/will the growers, wineries, consumers, etc. see as a result of this research?

This research activity will offer growers a new tool set for managing drought and heat stress. Growers can use the tool or knowledge for reasonable and optimum resource inputs to respond to the stresses.

4. Do you have any communications materials, publications, or other content related to this research activity that you would like CGCN-RCCV to share?

No associated communication materials, publications, or other content is available at this moment.



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