



FARM ADAPTATION INNOVATOR PROGRAM | PROJECT SUMMARY

Evaluating Opportunities to Expand Cherry Production

CLIMATE CHANGE IS PROJECTED to bring warmer temperatures and a longer growing season to the BC interior, creating new opportunities for cherry growers to expand production northward and into higher elevations. Previous reports from Agriculture and Agri-Food Canada’s (AAFC) Summerland Research and Development Centre (SRDC) have identified climate and landscape limitations to that expansion, and the movement in production could be accompanied by challenges with soil quality and water demand management.

Cherries are a high value crop in the Okanagan where the industry has been working hard to expand market opportunities. The models for expansion of cherry production in the BC Interior have considered climate and the physical and chemical properties of soils, but soil health and microbial populations must also be evaluated when assessing the suitability of land for crop health.

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| PROJECT | <i>Expanding Cherry Production in British Columbia under Climate Change</i> |
| LOCATION | <i>Central Okanagan and North Okanagan</i> |
| COMPLETION | <i>2017</i> |
| PROJECT LEAD | <i>UBC Okanagan, Biology</i> |
| FUNDING PARTNERS | <i>Agriculture and Agri-Food Canada, BC Ministry of Agriculture, private foundation</i> |
| OTHER PARTNERS | <i>BC Cherry Association, BC Fruit Growers’ Association, BC Tree Fruits Cooperative, cherry producers, Summerland Research and Development Centre</i> |

“For over a decade we’ve been scouring around trying to find later ripening cherry sites that will help us hit that premium market window,” explains David Geen of Coral Beach Farms. “Further investigation of the viability of higher altitude sites will provide a scientific foundation for the investments that we are making. It helps us confirm decisions, obtain financing, and participate in government insurance programs.”



A multi-year research project, led by Louise Nelson and Melanie Jones at UBC Okanagan and working in collaboration with Denise Neilsen and Tom Forge at AAFC's SRDC, is looking at key production issues in mature orchards, in particular water availability and soil pathogen control. The project is evaluating practices that may help growers establishing new orchards to optimize their water use and biological resilience of the soil.

The project is also monitoring two new orchards in Coldstream and Lavington, and comparing them with established orchards in Kelowna and at the SRDC. With the cooperation of 13 growers, the research team has taken soil samples from 18 locations throughout the Okanagan Valley to test how the soils affect cherry seedling growth in a controlled greenhouse environment.

“By testing soils in newer and older orchards, we are able to compare how cherry seedlings grow in different soils, and identify if there are things we can do that are sustainable and economic for growers to keep that healthy fresh soil from developing the complex fungus and nematode pressures that result in replant issues in older orchards,” says Dr. Louise Nelson.

Gaining this knowledge at an early stage — prior to major expansion into new regions — will allow cherry growers to take appropriate steps to mitigate any problems with the soil, rather than risk a major investment in new trees without being aware of potential problems.

The project will also determine whether native soil microbes will enhance or restrict cherry production in the new areas, and whether soil amendments like compost and mulch treatments can maintain a high buffering capacity against pathogens in new, non-fumigated soils. While soil microbes are rarely considered when evaluating suitability of land for crop production, research shows that soil microbes are a major driver of above ground plant productivity.

“Applying compost or mulch can help with water retention in the soils and increases microbial activity in soil and soil health,” says Nelson. “We want to see if we can use these techniques to maintain healthier soil in new orchards, or if we can restore soil health by applying them to old orchards.”

The findings of this project will play an important role in helping cherry growers evaluate the opportunities created by warming in the Okanagan, while managing risks, and increasing the likelihood of success in these new areas by optimizing water use efficiency and soil health.

Projects like this are part of the work being delivered by the BC Agriculture & Food Climate Action Initiative (CAI). CAI develops tools and resources to assist BC farmers and ranchers with adapting to impacts of climate change. CAI's Farm Adaptation Innovator Program engages directly with producers and local partners, providing funding for piloting, demonstration and knowledge transfer around farm level adaptation.

www.BCAGClimateAction.ca

The BC Agriculture & Food Climate Action Initiative (CAI) was launched in 2008 by the BC Agriculture Council to enable a proactive and pan-agriculture approach to climate change issues. CAI is currently supported by the BC Agricultural Research & Development Corporation and the Investment Agriculture Foundation of BC, with funding provided by the Governments of Canada and British Columbia through Growing Forward 2, a federal-provincial-territorial initiative.

Photos in this handout are courtesy of Dr. Tanja Voegel.

