

Greenhouse Innovations for Cariboo Market Garden Season Extension

Project Lead: College of New Caledonia, Applied Research & Innovation Program

Applied adaptation research will demonstrate innovative practices enabling regional market garden producers to extend their growing season in cost-effect, passively heated greenhouses or high tunnels. Trials will be conducted in greenhouse facilities at the College of New Caledonia's Quesnel and Prince George campuses investigating the use of mini-domes within existing greenhouse and supplemental LED lighting, alone and in combination, on fall-seeded vegetable crops. Greenhouse preparation will be initiated in July 2020, with full implementation by the end of August 2020. Fall-seeded salad vegetable crops (lettuce, scallions) and environmental conditions will be monitored. Extension activities will include an open house for growers at the Quesnel greenhouse, a project fact sheet, and updates through the Cariboo Agricultural Research Alliance.

Project Objectives:

1. Evaluate the effectiveness of cost-effective season extension practices (passive greenhouses, greenhouse-within-greenhouse concept, supplemental LED lighting) on regional vegetable productivity (harvestable yield). Local information on appropriate season extension methods for horticultural crops has been identified in the regional adaptation strategies as key factor for allowing agricultural producers adapt to a changing climate. Relay cropping trials for an additional late summer / early fall salad vegetable crop could significantly improve the overall productivity and profitability for market garden operations facing climate-change driven production uncertainties.
2. Evaluate the effectiveness of controlled-environment season extension practices (bed domes, supplemental LED lighting) on energy demands / carbon 'footprint' of local horticultural practices. Local information on the benefits of additional thermal capture or supplemental lighting in passively heated, controlled environments are largely undocumented. Information from this trial can be used to calculate the supplemental energy costs / carbon footprint relative to changes in vegetable yield for fall seeded crops.

The project is supported by a Project Working Group, including a CNC research team (Sorin Pascas, Jennifer Catherall and Steven Storch), regional producers and CARA. Interested in receiving periodic information about this project, and other CARA projects? Join the CARA e-mail list by contacting the coordinator: info@cariboo-agricultural-research-alliance.ca.

Funding for this project was been provided in part by the governments of Canada and British Columbia, and the Investment Agriculture Foundation of BC, under the Canadian Agricultural Partnership, a federal-provincial-territorial initiative. The Farm Adaptation Innovator Program is delivered by the BC Agriculture & Food Climate Action Initiative.

