Climate Action Initiative
BC AGRICULTURE & FOOD

FARM ADAPTATION INNOVATOR PROGRAM | PROJECT SUMMARY

Helping Farmers Get a Jump on Growing Season with Crop Protection

WORKING WITH TWO INNOVATIVE producers, a research team from the University of British Columbia is testing protective crop covers that may extend the growing seasons and potentially help to avoid some of the adverse effects of climate change.

Climate projections indicate that average annual temperatures will increase throughout the province, but an increase in the number of growing degree-days does not automatically translate into a longer growing season. More variability and extremes in precipitation (particularly in the spring and fall) combined with hotter and drier summers, will increase the complexity of crop management.

"With climate change and possible drought conditions in the late growing season, taking advantage of the early part of the growing season becomes even more important. Ensuring that farmers can get on the land as early as possible can have big benefits to agriculture," says Dr. Andy Black, professor of biometeorology and soil physics at UBC.

PROJECT	*Adapting BC Horticulture through Protected-Crop Research & Demonstration*
LOCATION	*Lower Mainland, Central Interior*
COMPLETION	*February 2018*
PROJECT LEAD	*UBC Faculty of Land & Food Systems*
FUNDING PARTNERS	*Agriculture and Agri-Food Canada, BC Ministry of Agriculture, Centre for Sustainable Food Systems at UBC Farm, Natural Sciences & Engineering Research Council of Canada, UBC Faculty of Land & Food Systems*
OTHER PARTNERS	*AT Films Inc, Cropthorne Farm Ltd, Dubois Agrinovation, Mackin Creek Farm, Osborne Seed Company*

Plastic mulch and low tunnels are used widely in the United States, Spain and China to modify microclimates. Their ability to protect crops from frost, conserve moisture, and warm the soil, have also made them increasingly popular with farmers in BC, but there is very little data available about the products and their efficacy to help farmers make the best decision for their situation.

Last year, Black and his colleague, Dr. Hughie Jones established research plots at the UBC Farm, and with farmer collaborators at Mackin Creek Farm near Williams Lake, and at Cropthorne Farm Ltd in Delta. With data gathered from these plots, they will evaluate the effectiveness of a range of plastic film mulches and low tunnels in modifying soil and horticultural crop environments to support adaptation to anticipated changes in climate in BC.

"Because we farm in a relatively arid area, dealing with limited water supplies has always been a factor for us," explains Rob Borsato of Mackin Creek Farm. "Over the 30 years that we've been here, we have noticed an increase in the amount and velocity of wind and less summer precipitation, so finding tools and techniques that help retain soil moisture are important to us."

The project will assess the properties of different plastic mulches and tunnel technologies for their ability to protect against early spring and fall frosts, raise average air and soil temperatures, maximize photosynthesis, prevent condensation droplets (to decrease incidence of plant disease), and produce early and/or late season produce.

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"There are ways to accurately predict the changes you can induce. The power behind our research is that it can provide precise indications of the kinds of things growers would like to achieve, and predict with some level of accuracy what they can accomplish," says Dr. Hughie Jones.

One of the priorities of this project will be to get the information into the hands of producers through field tours, presentations and articles in producer journals and magazines. Project findings will also be integrated into the curriculum for the Centre for Sustainable Food Systems' Practicum in Sustainable Agriculture, and shared online at: *www.bcagclimateaction.ca/farm-level/adaptation-innovator-program*

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