



## Smart Farm Collaborations

# Enhancing Climate Change Resiliency & Environmental Sustainability in the Livestock Industry

**The Technology Access Centre for Livestock Production (TACLP) at Olds College is enhancing climate change resiliency and environmental sustainability in the livestock industry through the use of innovative technology and rotational grazing practices on the Smart Farm — specifically the 308 acres at Pitstra Farm west of Carstairs, Alta. — over the next two years.**

The TACLP received \$440,000 in funding from the Natural Sciences and Engineering Research Council of Canada (NSERC) earlier this year through the Applied Research and Technology Partnership (ARTP) grants for this applied research project. The main research themes are: (1) improving productivity and environmental sustainability in tame and native pastures in Western Canada, and (2) developing and validating remote carbon monitoring technologies with the potential to increase rancher access to carbon credit programs.

“Thanks to this ARTP grant, Olds College Centre for Innovation will execute a series of industry-driven, college-led, applied research projects that will build on the sustainability focus of our livestock production applied research,” comments Dr. Joy Agnew, Associate Vice President, Applied Research at Olds College. “Our goal is to provide research that will support small to medium enterprises, and help technology developers commercialize products that ranchers will use and gain value from.”

With the ARTP funding, the TACLP at Olds College is using its facilities and expertise to test products and technologies for improving environmental sustainability and climate change resiliency in Western Canada. The TACLP's applied research activities will also support multiple small to medium-sized industry partners — Wyvern, Carbon Asset Solutions, Union Forage and AdvancedAg — with plans to involve more partners over the next two years.



“The TACLP at Olds College is addressing the critically important issues of environmental sustainability and climate change resiliency,” says Sean Thompson, Manager of the Olds College TACLP. “We’ve been conducting great research on the Smart Farm with rotational grazing and regenerative agriculture practices in the last few years, and look forward to continuing the research in Pitstra with this ARTP grant and industry partners.”

The TACLP's applied research at Pitstra Farm will help validate the efficacy of Union Forage and AdvancedAg's products in improving productivity and environmental sustainability in tame and native pastures in Western Canada. It will also help Wyvern and Carbon Asset Solutions develop and validate remote carbon monitoring technologies with the potential to increase rancher access to carbon credit programs. To learn more, visit [oldscollege.ca/smartfarm](http://oldscollege.ca/smartfarm).

## Industry Partners



Union Forage is a family-owned company based in Alberta that develops annual and perennial forage seeds in Western Canada for enhanced forage production, and supports grazing practises to increase profitability and improve soil health. This applied research project with TACLP will validate Union Forage's seeds, and see how specific forage blends can improve soil health and increase soil carbon content. The project results will improve the company's breeding program and product marketing.



AdvancedAg is a family-owned Canadian company that provides soil additives containing growth-promoting bacteria, ACF-SR, which promises to increase forage production and improve soil health, forage quality, and soil organic carbon. This applied research project with TACLP will enable AdvancedAg to test ACF-SR in a commercial agricultural setting, and help future product development and marketing. The livestock industry would benefit greatly from the success of this product which could help their land, cattle and bottom line.



Carbon Asset Solutions has a proprietary technology that can quickly and accurately measure and map soil organic carbon in croplands. This technology has been studied and validated in cropland settings, but not native and tame pasturelands. Working alongside TACLP will provide the ground-truthing data needed for Carbon Asset Solutions to further develop and bring its technology to market. Ranchers in Western Canada could benefit from increased compensation for adopting grazing practises that sequester carbon in soils.



Wyvern is an Edmonton-based space data company offering imagery using novel optical technology and satellites to enable precision agriculture and in-season crop monitoring. Over the two-year project with the TACLP, Wyvern will fly a satellite over the pastures at Pitstra Farm during the growing season, gather and process the data, and work with ground-truthing personnel at Olds College. Wyvern will use the data to develop an algorithm for the remote verification of rotational grazing practises for carbon credit protocols, and increase the number of Canadian ranchers that can access carbon credits.