

## Chronic wasting disease (CWD) contamination of vegetation

This project will examine the potential for chronic wasting disease (CWD) prions to contaminate deer forage and Alberta crops. CWD is a contagious prion disease present in Alberta deer, elk and moose. CWD infectivity is shed through saliva, urine and feces of infected cervids and is known to persist in the environment. Prions are notoriously sticky; however, the ability of CWD prions to be retained upon vegetation is not known. We will determine: i) the binding of CWD prions to a variety of deer forage and Alberta crops, ii) the impact of rainwater washes on CWD removal from plant surfaces, iii) the impact of freezing and drying to release CWD bound to plants, and iv) if significant amounts of CWD can be taken up from soil by plants.



Deer feeding on natural vegetation.



#### RECIPIENT:

University of  
Alberta

PI: Dr. Judd Aiken



#### PARTNERS:

Results Driven  
Agriculture  
Research



#### TOTAL BUDGET:

\$703,000



#### AI FUNDING:

\$248,000



#### PROJECT DATES:

Jan 2022 –  
Dec 2023

## APPLICATION

The project aims to identify plants species that have an affinity for binding CWD prions and increasing the spread of CWD. Outcomes from this project may impact agriculture and agri-food sector policies relating to the possible transmission of CWD from crops. These studies will define the levels of CWD infectivity bound to Alberta crops (biochemical studies) as well as determine whether sufficient CWD infectivity is present to result in disease transmission. Mitigation strategies will be transferred to producers for testing.



# Clean Resources

Smart Agriculture and Food

## PROJECT GOALS

- To assess the potential for CWD-contaminated vegetation, especially those plants commonly used as browse by deer, elk and caribou, to be a CWD transmission source.
- To enhance Alberta’s scientific capacity for mitigation of the hazard or perception of hazard regarding CWD contamination of agricultural products.
- Determine the ability of CWD prions to bind to Alberta crops.
- Identification of factors and processes that reduce CWD binding to vegetation.
- Determine if CWD infectivity in soil is taken up by plant roots.
- Provide hands-on training of HQP in prion diseases and plant biology.

## BENEFITS TO ALBERTA

- The project will define the interaction of CWD prions with aerial vegetation and roots.
- The project will improve ecological modelling of CWD transmission.
- The project will inform the Alberta agriculture industry about the ability of crops to interact and retain CWD infectivity.
- Work will also aid in identifying and controlling risk and perceived risk to agricultural land and products.



2-3 publications



2-5 students



3-5 scientists



2-4 new products



>10 future jobs

## CURRENT STATUS

The research team includes researchers from the University of Alberta and Agriculture & Agri-foods in Saskatchewan. Preliminary data has demonstrated the recovery of CWD prions from plant leaves using a detergent extraction buffer.