

Examining potential threats from Pea Seed Born Mosaic Virus and developing PSbMV-based tools to study legume seed development

Dr. Sean Prager

University of Saskatchewan – Dept. of Plant Sciences

SPG Contributions	Project Status	Duration/Timeline of Project (Year to Year)	Co-funders	Total Project Cost
\$86,825.00	Active	December 2022 – July 2028	Saskatchewan Ministry of Agriculture – Agriculture Development Fund (ADF)	\$313,325.00

Project Description

To examine PSbMV adaptation to important legumes of Saskatchewan upon repeated infection cycles; to determine the mechanisms and durability of resistance against PSbMV exhibited by legumes grown in Saskatchewan; to evaluate the disease severity caused by PSbMV lineages in pea and understand the pea defence response against PSbMV; to design efficient tools for the detection/prediction of severe PSbMV variants in the legumes of the Prairies; to develop a PSbMV based viral vector for studies of legume seeds and to express components of the CRISPR-Cas9 system.

Outcome

Research Objective

OBJECTIVE 1

To examine PSbMV adaptation to important legumes of Saskatchewan upon repeated infection cycles.

OBJECTIVE 4

To design efficient tools for the detection/prediction of severe PSbMV variants in the legumes of the Prairies.

OBJECTIVE 2

To determine the mechanisms and durability of resistance against PSbMV exhibited by legumes grown in Saskatchewan.

OBJECTIVE 5

To develop a PSbMV based viral vector for studies of legume seeds and to express components of the CRISPR-Cas9 system.

OBJECTIVE 3

To evaluate the disease severity caused by PSbMV lineages in pea and understand the pea defence response against PSbMV.