

## Northern latitude soybean – Physiology of yield formation and beating the cold

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SPG Contributions	Project Status	Duration/Timeline of Project (Year to Year)	Co-funders	Total Project Cost
\$182,684.00	Active	April 2018 – March 2023	Canadian Field Crop Research Alliance	\$608,946.00

### Project Description

To identify flowering pattern (days to flowering, duration, maturity, yield, node number) of varieties in the regional variety test in Saskatchewan. Varieties cover MG 00, 000, conventional, specialty food market classes under normal seeding dates; to measure growth, development, and yield components (yield, nodes, pods per node, seeds per pod, seed size) of elite cold-selected varieties in field plots in Saskatchewan; to measure effects of cold temperature using very late seeded soybean so flowers and pods set in August and early September in cool regions of Saskatchewan; to determine best physiological strategies to stabilize and increase yield from a range of varieties and environments: flowering time & duration, number of reproductive nodes, flower set or flower retention response to cool nights; to assess the range and performance of seed and pod filling in later reproductive growth to low temperatures, such as seed and pod growth rate, filling duration, final seed and pod size, and rate of seed protein acquisition.

### Outcome

#### Research Objective

##### OBJECTIVE 1

To identify flowering pattern (days to flowering, duration, maturity, yield, node number) of varieties in the regional variety test in Saskatchewan. Varieties cover MG 00, 000, conventional, specialty food market classes under normal seeding dates.

##### OBJECTIVE 4

To determine best physiological strategies to stabilize and increase yield from a range of varieties and environments: flowering time & duration, number of reproductive nodes, flower set or flower retention response to cool nights.

##### OBJECTIVE 2

To measure growth, development, and yield components (yield, nodes, pods per node, seeds per pod, seed size) of elite cold-selected varieties in field plots in Saskatchewan.

##### OBJECTIVE 5

To assess the range and performance of seed and pod filling in later reproductive growth to low temperatures, such as seed and pod growth rate, filling duration, final seed and pod size, and rate of seed protein acquisition.

##### OBJECTIVE 3

To measure effects of cold temperature using very late seeded soybean so flowers and pods set in August and early September in cool regions of Saskatchewan.