

2025 Final Report for the Saskatchewan Pulse Crop Development Board

Project Title: When should rapidly maturing soybean varieties be planted in Saskatchewan?
(Project # AP2408a-SERF)



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2. **Project Title:** When should rapidly maturing soybean varieties be planted in Saskatchewan?

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5. Abstract/Summary

Small plot trials were conducted across Saskatchewan during 2024 and 2025 to evaluate the effect of seeding date on various early maturing cultivars of Soybean. These locations were located near Redvers, Swift Current, Scott, Indian Head, Yorkton, Melfort, Outlook and Prince Albert. The objective was to evaluate the regional adaptation of soybeans with a range of maturity ratings in northern and southern locations in Saskatchewan. The trial was set up in Split plot design with two seeding times (Early 12-19 May and Late 20-30 May) as the main plot factor and five soybean varieties belonging to different maturity groups (000.5, 000.7, 000.8, 000.9 and 00.2) as subplot factor. Data were collected for plant density, height, days to flowering, days to maturity, yield, TKW and protein.

In 2024, the Swift Current trial was discontinued, due to drought and poor emergence resulting in missing data for all parameters except plant density. In 2025, trends varied due to environmental differences, including reduced precipitation at some sites. Early frost at Scott adversely affected soybean development, leading to missing maturity data. At Prince Albert, the variety Early Soy 3: (000.8) exhibited poor emergence in 5 of 8 plots and was excluded from the analysis due to unrepresentative performance.

In 2024, seeding date significantly affected plant density at Outlook, with late seeding resulting in higher density; similar trends were observed at most sites, except the southern two locations where early seeding increased density. In 2025, late seeding generally produced higher plant density across sites, except at Indian Head, where early seeding resulted in significantly greater density. Plant height responses were inconsistent. Early seeding significantly increased days to flowering and maturity compared to late seeding, while Early Soy 3: (000.8) consistently reached flowering and maturity earlier in both years. Yield responses varied by site: late seeding increased yield at Yorkton in 2024, whereas early seeding increased yield at six sites in 2025, with four showing significant differences. Thousand kernel weight and protein content varied by site and environmental conditions, with mixed significance across seeding dates and varieties.

6. Introduction

Soybeans are not widely adopted in Saskatchewan compared to other pulses, but recurring issues with pea root rot could increase interest in planting this crop across various growing regions of the province. Seeding date studies have shown moderate advantages to early planting (1). Tkachuk (2017) identified a yield decline of 16 kg/ha for each 1-day delay in seeding from 27 April to 22 June at Carman, MB, and Carrington, ND, concluding that calendar date was more influential to soybean yield than soil temperature (2). The yield advantage to earlier seeding, however, appears to be greater in the U.S. Midwest where the growing season is longer and warmer. In Wisconsin, for example, a 21.2 kg/ha yield reduction was observed for each day of delayed seeding from early May to mid-June (Gaspar & Conley, 2015). In an ADF project at ICDC (3), the optimal seeding date was reported to be May 21 - May 28 based on a wide range of dates from early May to mid-June. This project did not determine whether the optimal seeding date may vary with newer early maturing types that have been developed for the prairies since 2014 as opposed to later maturing varieties (4). The ADOPT project at NARF found that while seeding soybean in mid May caused a significant delay in germination with lower plant populations, it resulted in higher yield than later May seeding. A study conducted in Manitoba (5) from 2015 to 2017 to evaluate the performance of three soybean cultivars at three seeding dates from 24 May to 24 June show that very late seeding reduced yield, seed weight, and oil but did not affect protein. A US study (6) found that planting date and cultivar maturity effects on seed protein concentration were not always consistent, but meal protein concentration generally decreased with lower temperatures during seed fill. More research is needed across Saskatchewan to improve seeding date recommendations.

1. Tkachuk, C. (2017). Evaluation of soybean (*Glycine max*) planting dates and plant densities in northern growing regions of the Northern Great Plains. M.Sc. thesis. Winnipeg, MB: University of Manitoba.
2. Gaspar, A. P., & Conley, S. P. (2015). Responses of canopy reflectance, light interception, and soybean seed yield to replanting suboptimal stands. *Crop Science*, 55, 377–385.
3. ADF20130055 AGRONOMIC INVESTIGATIONS OF IRRIGATED SOYBEAN. Irrigation Crop Diversification Corporation.
4. ADOPT20160479 Seeding Dates for Soybean in NE Saskatchewan, Northeast Agriculture Research Foundation.
5. MacMillan KP, Gulden RH. Effect of seeding date, environment and cultivar on soybean seed yield, yield components and seed quality in the Northern Great Plains. *Agronomy Journal*. 2020;112:1666–1678.

6. Salmerón M, Bourland FM, Buehring NW, Earnest L, Fritschi FB, Gbur EE, Golden BR, Hathcoat D, Lofton J, McClure AT, Miller TD, Neely C, Shannon G, Udeigwe TK, Verbree DA, Vories ED, Wiebold WJ and Purcell LC (2022) Regional analysis of planting date and cultivar maturity recommendations that improve soybean oil yield and meal protein concentration. *Front. Plant Sci.* 13:954111.

7. Objectives of the project

To evaluate the effect of seeding date on various early maturing cultivars of soybean.	Done
To evaluate the regional adaptation of soybeans with a range of maturity ratings in northern and southern locations in Saskatchewan.	Further Research needed
To compare soybean yield and plant establishment at early versus later seeding dates.	Done
To compare the effect of variety and seeding date on protein content in soybean.	Done

8. Materials and Methods

Trials were conducted at eight locations across Saskatchewan: SERF (Redvers), WCA (Swift Current), WARC (Scott), IHARF (Indian Head), ECRF (Yorkton), NARF (Melfort), ICDC (Outlook) and CLC (near Prince Albert). The treatments were arranged in a four-replicate split-plot design with seeding dates as the main plot and variety as the sub plot.

Main Plot Factor: Seeding Date –

Early: May 12-19

Normal: May 20-30

Sub Plot Factor: Varieties of soybean of varying lengths of maturation:

Early Soy 1: Amirani R2 - 000.5 maturity

Early Soy 2: Wolf R2X - 000.7 maturity

Early Soy 3: NSC Watson - 000.8 maturity

Early Soy 4: S0009-F2X - 000.9 maturity

Normal Soy: PV 22s002 - 00.2 maturity

Earlier, above mentioned five varieties were proposed for the trial but later the varieties were changed to the following due to seed availability.

Early Soy 1: BY Nebo - 000.5 maturity

Early Soy 2: Wolf R2X - 000.7 maturity

Early Soy 3: NSC Dauphin - 000.8 maturity

Early Soy 4: S0009-x84 - 000.9 maturity

Normal Soy: PV 22s002 RR2X - 00.2 maturity

Plant counts were conducted by measuring four-meter rows per plot and later converting the data into plants per square meter. Likewise, plant height was recorded as the average measurement of two randomly selected plants per plot. Additionally, data on flowering initiation dates, days to maturity (defined as when 90% of pods had changed color), yield, and seed protein content were also collected.

Yield data was collected by harvesting the soybean plots using a plot combine harvester, ensuring a uniform and precise collection process. After harvesting, the total weight of the soybean produced was measured, and its moisture content was recorded. The recorded yield was adjusted to a standardized moisture content of 13% before being converted into kilograms per hectare (kg/ha).

9. Results

Plant density:

In 2024, no statistically significant differences in plant density between seeding dates were observed at RD and SC; however, early seeding consistently resulted in relatively higher plant density than late seeding. Significant variation among varieties indicated a strong influence of varietal selection at these sites.

At Indian head, Yorkton, Melfort, Scott and Prince Albert, plant density differences were generally non-significant across seeding dates and varieties, except at Yorkton, where significant differences among varieties were detected. At Outlook, the only irrigated site, both seeding date and variety had a significant effect on plant density. The detailed results of plant density assessments across different sites are presented in Tables 1 and 1A.

Table :1 Plant density (Seed Date) 2024 (plants /m²)

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Seeding	45.4	60.9	50.7	27.4	58.2	43.7	34.7	28.1 ^B
Late Seeding	38.2	64.0	53.3	24.1	60.6	45.9	35.6	44.0 ^A
P- value	0.058	0.163	0.561	0.245	0.436	0.115	0.672	0.009

Table :1A Plant density 2024 (plants /m²)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Soy 1: (000.5)	36.3 ^B	60.6	52.4	26.1 ^A	62.3 ^{AB}	42.7	33.2	35.6 ^B
Early Soy 2: (000.7)	44.6 ^{AB}	65.0	50.6	24.5 ^{AB}	59.1 ^{AB}	45.0	35.8	47.6 ^A
Early Soy 3: (000.8)	47.8 ^A	64.9	53.0	29.6 ^A	58.7 ^{AB}	45.2	36.7	34.4 ^B
Early Soy 4: (000.9)	43.3 ^{AB}	61.0	56.1	29.1 ^A	65.0 ^A	47.6	38.9	32.4 ^B
Normal Soy: (00.2)	37.2 ^B	60.6	47.9	19.5 ^B	52.1 ^B	43.6	31.4	30.1 ^B
P- value	0.014	0.108	0.173	0.0003	0.041	0.608	0.269	0.0001

During 2025, a different trend was seen for plant density between seeding dates. The later seeding date had a higher plant density at all sites except Indian head, where early seeding resulted in significantly higher plant density. Like 2024, plant density differed between varieties for each location in 2025.

However, plant density differences remained statistically non-significant across both seeding dates and varieties for all locations except Swift current. Due to negligible germination in most of the plots at Prince Albert, Early Soy 3: (000.8) variety was left out of the analysis.

In 2025, plant density showed a different response to seeding date, with late seeding resulting in higher density at most sites, except at Indian head where early seeding produced significantly higher plant density. Varietal responses followed a pattern like 2024, with significant but uneven differences in plant

density among varieties, indicating strong site-specific effects. Overall, plant density differences were statistically non-significant across seeding dates and varieties at most locations, except at Swift current. Due to poor germination in most plots at Prince Albert, the variety Early Soy 3: (000.8) was excluded from the analysis.

Table :1 B Plant density (Seed Date) 2025 (plants /m²)

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
Plant density (plants/sqm)								
Early Seeding	37.2	48.2 ^A	65.9	27.6 ^B	41.6	31.5	46.2	55.1
Late Seeding	39.3	43.6 ^B	57.4	46.6 ^A	42.9	31.6	46.9	63.7
P- value	0.469	0.044	0.097	0.0001	0.576	0.994	0.679	0.175

Table :1 C Plant density (Varieties) 2025 (plants /m²)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
Plant density (plants/sqm)								
Early Soy 1: (000.5)	28.4 ^B	36.7 ^B	60.3 ^B	29.2 ^C	31.4 ^C	21.1 ^B	37.4 ^B	62.4
Early Soy 2: (000.7)	39.4 ^A	45.6 ^A	57.0 ^B	48.6 ^A	43.7 ^B	32.5 ^A	48.2 ^A	60.2
Early Soy 3: (000.8)	42.1 ^A	51.7 ^A	-----	41.0 ^B	53.9 ^A	37.5 ^A	49.6 ^A	59.6
Early Soy 4: (000.9)	41.8 ^A	50.4 ^A	59.8 ^B	34.7 ^{BC}	42.7 ^B	34.7 ^A	52.3 ^A	56.3
Normal Soy: (00.2)	39.6 ^A	45.1 ^A	69.6 ^A	31.9 ^C	39.8 ^{BC}	31.9 ^{AB}	45.2 ^{AB}	58.4
P- value	0.003	0.0001	0.0007	0	0	0.003	0.0005	0.967

Plant height (cm):

Plant heights were recorded at all locations except Swift Current and Redvers in 2024.

At Indian Head, Yorkton and Scott, plant height differences between the two seeding dates were not statistically significant. In contrast, at Prince Albert, Melfort and Outlook, plant height differences between seeding dates were statistically significant. Here, the later seeding date resulted in a significantly greater plant height compared to the early seeding date.

Significant differences in plant height were observed among varieties, suggesting that plant height was driven more by genetic factors than by seeding date. The variety Normal Soy: (00.2) exhibited greater plant height at four of the sites where data were collected. A detailed presentation of plant height data across different sites can be found in Tables 2 and 2A.

Table :2 Plant Height 2024 (cm)

Seeding Date	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
Plant Height (cm)						
Early Seeding	52.7	54.7 ^B	45.0	70.1 ^B	38.0	57.8 ^B
Late Seeding	52.9	64.6 ^A	53.6	77.0 ^A	37.7	72.4 ^A
P- value	0.781	0.037	0.057	0.021	0.758	0.005

Table :2A Plant Height 2024 (cm)

Variety (Maturity)	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	Plant Height (cm)					
Early Soy 1: (000.5)	54.3 ^A	58.4 ^B	45.1 ^B	70.9 ^B	37.8 ^{AB}	64.6 ^B
Early Soy 2: (000.7)	48.5 ^B	57.1 ^B	44.0 ^B	68.6 ^B	34.2 ^B	63.5 ^B
Early Soy 3: (000.8)	55.9 ^A	56.4 ^B	54.5 ^A	78.1 ^A	41.1 ^A	53.5 ^C
Early Soy 4: (000.9)	50.5 ^B	53.9 ^B	44.8 ^B	69.3 ^B	38.4 ^{AB}	65.2 ^B
Normal Soy: (00.2)	54.8 ^A	72.4 ^A	58.1 ^A	80.9 ^A	37.5 ^{AB}	78.8 ^A
P- value	0.0	0.0	0.0	0.0	0.022	0.0

In 2025, seeding date had no significant effect on plant height at most sites, except at Melfort, where late seeding produced taller plants than early seeding. Plant height varied significantly among varieties across all sites, indicating a strong genetic influence. Like 2024, Normal Soy: (00.2) exhibited significantly greater plant height at seven of the eight sites; at the remaining site, Normal Soy: (00.2) was taller than three varieties but statistically comparable to Early Soy 4: (000.9). The interaction between seeding date and Varieties remained statistically nonsignificant.

Table :2 B Plant height (Seed Date) 2025 (plants /m²)

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Seeding	55.3	62.7	65.9	56.9	55.6	73.1 ^B	55.2	67.3
Late Seeding	61.3	61.9	57.4	59.8	61.8	79.6 ^A	55.6	74.7
P- value	0.081	0.283	0.097	0.414	0.131	0.003	0.755	0.087

Table :2 C Plant height (Varieties) 2025 (plants /m²)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Soy 1: (000.5)	53.2 ^C	64.1 ^B	60.3 ^B	59.6 ^B	56.8 ^C	76.0 ^B	52.7 ^C	63.6 ^B
Early Soy 2: (000.7)	52.6 ^C	60.9 ^B	57.0 ^B	54.3 ^{CD}	52.6 ^D	72.6 ^B	50.8 ^C	67.0 ^B
Early Soy 3: (000.8)	51.5 ^C	56.3 ^C	----	52.3 ^D	60.3 ^B	70.6 ^B	57.6 ^B	65.7 ^B
Early Soy 4: (000.9)	60.5 ^B	62.4 ^B	59.8 ^B	58.1 ^{BC}	58.7 ^{BC}	73.1 ^B	52.6 ^C	75.7 ^A
Normal Soy: (00.2)	73.8 ^A	67.9 ^A	69.6 ^A	67.7 ^A	65.5 ^A	89.4 ^A	63.1 ^A	82.8 ^A
P- value	0	0	0.0007	0	0	0	0	0

Days to flowering:

In 2024, days to flowering differed significantly between seeding dates, with early-sown soybean taking longer to reach flowering than late-sown plants. Significant variation was also observed among varieties at all sites with recorded data, highlighting the influence of genetic factors on flowering time. Data for this parameter were unavailable at Prince Albert, Outlook and Swift Current. The variety Early Soy 3: (000.8) consistently flowered earlier, showing significantly fewer days to flowering at Redvers, Indian Head, Yorkton and Melfort, and numerically fewer days at Scott despite non-significant differences. A detailed breakdown of the days to flowering across different seeding dates and varieties is presented in Tables 3 and 3A.

Table :3 (2024) Days to flowering (Seed Date)

Seeding Date	Redvers	Indian Head	Yorkton	Melfort	Scott
	Days to flowering				
Early Seeding	61.4 ^A	60.8 ^A	56.7 ^A	65.8 ^A	65.7 ^A
Late Seeding	53.0 ^B	50.6 ^B	49.6 ^B	54.6 ^B	53.8 ^B
P- value	0.0	0.0	0.0001	0.0	0.0003

Table :3A (2024) Days to flowering (Varieties)

Variety (Maturity)	Redvers	Indian Head	Yorkton	Melfort	Scott
	Days to flowering				
Early Soy 1: (000.5)	57.0 ^{BC}	56.5 ^A	54.1 ^A	61.4 ^A	59.8
Early Soy 2: (000.7)	57.3 ^{AB}	55.7 ^B	53.9 ^A	59.9 ^B	59.3
Early Soy 3: (000.8)	56.6 ^C	54.4 ^C	51.4 ^C	58.4 ^C	58.8
Early Soy 4: (000.9)	57.6 ^A	56.5 ^A	52.8 ^B	61.9 ^A	60.1
Normal Soy: (00.2)	57.4 ^{AB}	55.4 ^B	53.4 ^{AB}	59.4 ^{BC}	60.6
P- value	0.0003	0.0	0.0	0.0	0.621

The data for the seeding date by variety interaction are presented in the table 3B. Early seeding resulted in significantly more days to flowering than late seeding, whereas data remained non-significant between varieties for early seeding except at Indian head where Early Soy 3 took significantly less days to flower than all other varieties.

Table 3B. Days to Flowering (Seed date x Varieties) (2024)

Seed date	Varieties	Redvers	Indian Head	Melfort
Early	Early Soy 1: (000.5)	61 ^A	61 ^A	67 ^A
Early	Early Soy 2: (000.7)	62 ^A	61 ^A	65 ^A
Early	Early Soy 3: (000.8)	61 ^A	60 ^B	66 ^A
Early	Early Soy 4: (000.9)	62 ^A	61 ^A	66 ^A
Early	Normal Soy: (00.2)	62 ^A	61 ^A	66 ^A
Late	Early Soy 1: (000.5)	53 ^{BC}	52 ^C	56 ^{BC}
Late	Early Soy 2: (000.7)	53 ^C	50 ^D	55 ^{CD}
Late	Early Soy 3: (000.8)	52 ^C	49 ^F	51 ^E
Late	Early Soy 4: (000.9)	54 ^B	52 ^C	58 ^B
Late	Normal Soy: (00.2)	53 ^{BC}	50 ^E	53 ^{DE}
p-value		0.0108	0.0	0.0

In 2025, early-sown soybean required significantly more days to reach flowering than late-sown plants at all sites, with data unavailable for Prince Albert and Outlook. Variety had a strong effect on flowering time, showing significant differences at all sites except Yorkton, where no differences were detected. The variety Early Soy 3 consistently flowered earlier, requiring fewer days to reach flowering at most sites.

The data for interaction between varieties and seed date remained statistically nonsignificant at all data available sites except Swift Current.

Table :3C (2025) Days to flowering (Seed Date)

Seeding Date	Redvers	Indian Head	Swift Current	Yorkton	Melfort	Scott
	Plant density (plants/sqm)					
Early Seeding	64.9 ^A	60.6 ^A	58.6 ^A	62.2 ^A	58.4 ^A	64.6 ^A
Late Seeding	56.4 ^B	49.1 ^B	54.1 ^B	53.7 ^B	51.9 ^B	56.8 ^B
P- value	0.001	0	0.003	0.003	0.006	0.0002

Table :3D (2025) Days to flowering (Varieties)

Variety	Redvers	Indian Head	Swift Current	Yorkton	Melfort	Scott
	Plant density (plants/sqm)					
Early Soy 1: (000.5)	61.2 ^A	56.9 ^A	57.7 ^A	58.5	57.8 ^A	64.0 ^B
Early Soy 2: (000.7)	60.3 ^{AB}	55.4 ^B	56.3 ^A	57.8	54.7 ^{BC}	60.7 ^C
Early Soy 3: (000.8)	59.1 ^B	52.1 ^D	54.3 ^B	58.0	52.6 ^D	54.2 ^E
Early Soy 4: (000.9)	62.0 ^A	56.1 ^{AB}	56.2 ^A	56.8	56.5 ^{AB}	66.6 ^A
Normal Soy: (00.2)	60.6 ^{AB}	54.7 ^C	57.0 ^A	58.5	54.1 ^{CD}	57.8 ^D
P- value	0.002	0	0	0.254	0	0

Days to maturity:

Days to maturity, defined as the stage when 90% of the pods had changed color, significantly differed between seeding dates. During 2024, at all sites where data was available, soybean plants sown earlier required a significantly greater number of days to reach maturity compared to those sown later. This suggests that early-seeded soybeans experienced prolonged growth periods. Data for days to maturity was unavailable for Outlook and Swift Current. In addition to seeding date, variety type also had a statistically significant effect on the number of days to maturity. Among all the tested varieties, the Normal Soy: (00.2) took significantly longer to reach maturity compared to all other varieties.

A detailed presentation of the days to maturity across different seeding dates and varieties is provided in tables 4 and 4a. There was no variation between replications at Prince Albert so means were used to present the data.

Table :4 (seeding Date) 2024 Days to maturity

Seeding Date	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott
	Days to Maturity					
Early Seeding	118.0 ^A	122.2 ^A	124.0	124.2 ^A	124.9 ^A	124.4 ^A
Late Seeding	111.5 ^B	110.4 ^B	109.0	113.9 ^B	114.1 ^B	114.8 ^B
P- value	0.002	0.0	----	0.0	0.0006	0.0005

Table :4A (Varieties) 2024 Days to maturity

Variety (Maturity)	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott
	Days to Maturity					
Early Soy 1: (000.5)	113.4 ^B	113.8 ^D	116.5	117.0 ^C	116.1 ^D	115.6 ^{CD}
Early Soy 2: (000.7)	115.0 ^B	115.9 ^C	116.5	118.4 ^{BC}	119.3 ^C	121.4 ^B
Early Soy 3: (000.8)	110.4 ^C	111.2 ^E	112.5	117.5 ^C	115.3 ^D	111.5 ^D
Early Soy 4: (000.9)	115.6 ^B	118.3 ^B	112.5	119.3 ^B	121.3 ^B	120.4 ^{BC}
Normal Soy: (00.2)	119.3 ^A	122.2 ^A	124.5	123.0 ^A	125.6 ^A	128.9 ^A
P- value	0.0	0.0	----	0.0	0.0	0.0

During 2025, the results followed the 2024 trend for effect of seeding date on days to maturity. Early seeded soybean took significantly more days to reach maturity than soybeans seeded late. Varieties had a strong influence on days to maturity. The Normal Soy: (00.2) required the longest time to mature, with statistically significant differences observed at Redvers, Indian Head, Prince Albert, Yorkton and Melfort. In contrast, Early Soy 3: (000.8) consistently reached maturity earlier in both 2024 and 2025.

Table :4 B (seed Date) 2025 Days to maturity

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Outlook
Plant density (plants/sqm)							
Early Seeding	124.7 ^A	123.6 ^A	127.5	119.8 ^A	121.7 ^A	125.5 ^A	118.1 ^A
Late Seeding	115.5 ^B	115.2 ^B	125.3	106.5 ^B	113.7 ^B	121.9 ^B	110.0 ^B
P- value	0.0088	0.0001	0.2898	0.0002	0.0002	0.0415	0.0009

Table :4 C (Varieties) 2025 Days to maturity)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Outlook
Plant density (plants/sqm)							
Early Soy 1: (000.5)	120.3 ^{BC}	118.8 ^D	122.5 ^B	113.7 ^B	117.1 ^{BC}	124.0 ^B	114.2 ^A
Early Soy 2: (000.7)	118.8 ^C	120.0 ^C	125.3 ^B	112.7 ^B	117.0 ^{BC}	122.8 ^B	113.6 ^{AB}
Early Soy 3: (000.8)	114.6 ^D	111.5 ^E	-----	107.5 ^C	116.5 ^C	115.6 ^C	110.8 ^B
Early Soy 4: (000.9)	121.5 ^B	121.1 ^B	126.0 ^B	115.1 ^{AB}	117.8 ^B	125.5 ^B	114.7 ^A
Normal Soy: (00.2)	125.3 ^A	125.6 ^A	131.7 ^A	116.7 ^A	120.4 ^A	130.5 ^A	116.8 ^A
P- value	0	0	0.0003	0	0	0	0.0004

The interaction results between seeding date and varieties are presented in table 4D for both 2024 and 2025:

Table 4D. Days to Maturity (Seed date x Varieties)

Seed date	Varieties	Indian Head	Indian Head	Prince Albert	Swift Current
	Year	2024	2025	2025	2025
Early	Early Soy 1: (000.5)	120 ^D	121.8 ^C	126.0 ^{AB}	121.0 ^{AB}
Early	Early Soy 2: (000.7)	122 ^C	124.2 ^B	126.5 ^{AB}	118.5 ^B
Early	Early Soy 3: (000.8)	116 ^E	117.1 ^D	----	113.2 ^C
Early	Early Soy 4: (000.9)	125 ^B	125.0 ^B	127.5 ^{AB}	123.2 ^A
Early	Normal Soy: (00.2)	128 ^A	130.0 ^A	130.0 ^{AB}	123.0 ^A
Late	Early Soy 1: (000.5)	107 ^H	115.8 ^D	119.0 ^B	106.5 ^D
Late	Early Soy 2: (000.7)	110 ^G	115.7 ^D	124.2 ^B	107.0 ^D
Late	Early Soy 3: (000.8)	106 ^I	106.0 ^E	----	101.7 ^E
Late	Early Soy 4: (000.9)	112 ^F	117.2 ^D	124.5 ^B	107.0 ^D
Late	Normal Soy: (00.2)	116 ^E	121.2 ^C	133.5 ^A	110.5 ^{CD}
p-value		0.0	0	0.0465	0.0313

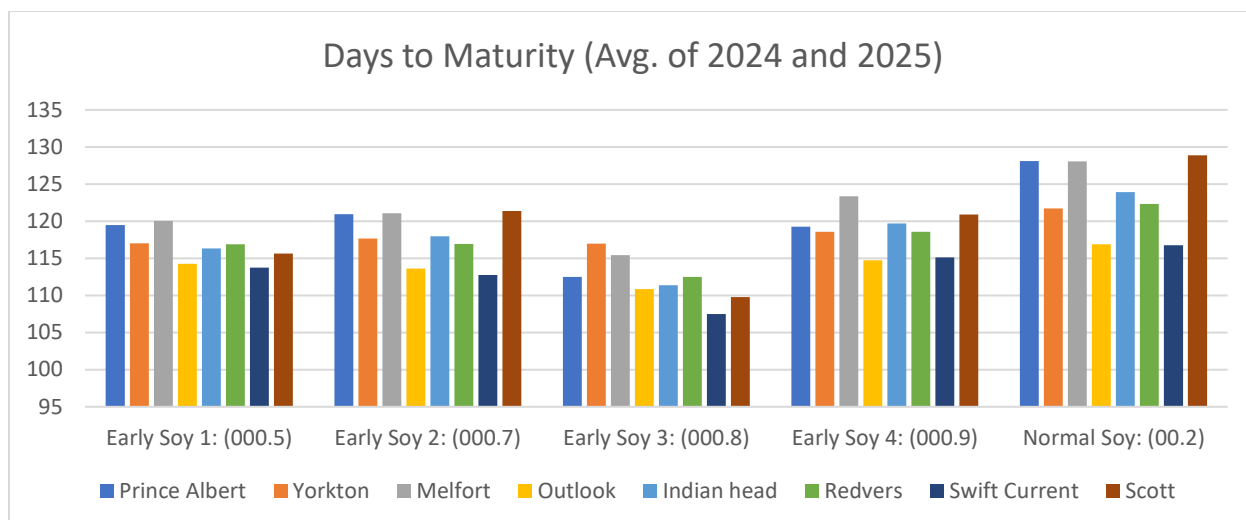


Figure A. Average days to maturity (varieties and sites). Only one year of data was included for Outlook, Swift Current and Scott.

Yield:

Statistical analysis of the yield data revealed that, during 2024, at most locations, there were no significant differences in yield between the different seeding dates. However, at Yorkton, a statistically significant difference was observed with the late seed date out-yielding the early seed date.

Among all sites, Outlook recorded the highest yield. This result is expected, as Outlook is the only irrigated location in the study. The availability of consistent and controlled moisture levels under irrigation likely contributed to higher productivity compared to rainfed sites.

A detailed presentation of the yield data across different seeding dates and sites is provided in the following tables.

Table :5 Yield (kg/ha) (2024)

Seeding Date	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	Yield (kg/ha)						
Early Seeding	3559.2	2427.3	2913.2	1488.8 ^B	1913.7	1137	5022.4
Late Seeding	3160.5	2453.7	3203.9	2179.1 ^A	2007.7	1135	5914.3
P- value	0.363	0.445	0.127	0.013	0.492	0.962	0.121

Table :5A Yield (kg/ha) (2024)

Variety (Maturity)	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	Yield (kg/ha)						
Early Soy 1: (000.5)	3606.2 ^A	2584.8 ^A	3231.2	1800.5 ^{AB}	1975.9	1311.3 ^A	5532.9 ^A
Early Soy 2: (000.7)	3103.2 ^B	2370.9 ^{CD}	3122.6	1598.9 ^B	1933.2	1092.9 ^{AB}	5741.1 ^A
Early Soy 3: (000.8)	3202.4 ^B	2272.5 ^D	2775.2	2022.7 ^A	1999.3	1013.4 ^B	4700.9 ^B
Early Soy 4: (000.9)	3761.4 ^A	2551.9 ^{AB}	3206.2	1828.6 ^{AB}	2006.8	1133.7 ^{AB}	5778.8 ^A
Normal Soy: (00.2)	3125.7 ^B	2422.4 ^{BC}	2957.5	1919.2 ^{AB}	1888.5	1128.8 ^{AB}	5588.1 ^A
P- value	0.0	0.0	0.143	0.039	0.774	0.052	0.0

The interaction tables are presented below:

Table :5B Yield (kg/ha) (Seed date X Variety) Redvers (2024)

Time /Trt	Yield	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	3757.4									
Early x Early Soy 2	3153.8	603.6*								
Early x Early Soy 3	3349.5	408	195.6							
Early x Early Soy 4	3987.9	230.5	834.1*	638.4*						
Early x Normal Soy	3547.2	210.2	393.4	197.8	440.7*					
Late x Early Soy 1	3455	302.4	301.2	105.6	532.9	92.2				
Late x Early Soy 2	3052.7	704.8	101.2	296.8	935.2	494.5	402.3			
Late x Early Soy 3	3055.4	702	98.4	294	932.4	491.8	399.6	2.8		
Late x Early Soy 4	3535	222.4	381.2	185.5	452.9	12.2	80	482.3*	479.5*	
Late x Normal Soy	2704.2	1053.2	449.6	645.2	1283.7	843	750.8*	348.4	351.2	830.8*

p-value=0.0032

Table :5C Yield (kg/ha) (Seed date X Variety) Outlook (2024)

Time /Trt	Yield	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	4862.3									
Early x Early Soy 2	5701.6	839.3*								
Early x Early Soy 3	3655.3	1207.0*	2046.4*							
Early x Early Soy 4	5527.1	664.8	174.5	1871.9*						
Early x Normal Soy	5365.8	503.5	335.9	1710.5*	161.4					
Late x Early Soy 1	6203.5	1341.2	501.9	2548.3	676.4	837.8				
Late x Early Soy 2	5780.5	918.2	78.9	2125.2	253.4	414.7	423			
Late x Early Soy 3	5746.5	884.2	44.9	2091.3	219.4	380.8	457	34		
Late x Early Soy 4	6030.5	1168.2	328.9	2375.3	503.4	664.8	173	250	284	
Late x Normal Soy	5810.5	948.2	108.8	2155.2	283.3	444.7	393.1	30	64	220.1

p-value=0.0

The 2025 yield data showed a site-specific response to seeding date. At six sites, early seeding produced higher yields than late seeding, with four of these sites showing statistically significant differences. At Redvers and Yorkton, late seeding resulted in higher yields, but these differences were not statistically significant. Yield also varied among varieties, with some sites showing statistically significant differences while others did not. The irrigated Outlook site produced higher yields compared to other locations, while weather conditions, particularly reduced rainfall during critical periods of flowering and pod filling in July and August at four sites, played an important role in influencing yield (Fig. B). During analysis the first replication was removed from Swift Current as a few plots were damaged, creating variability.

Table: 5D Yield 2025 (kg/ha)

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Seeding	2513.0	1590.1 ^A	2102.7 ^A	1797.5	2192.8	2301.7	957.4 ^A	4333.4 ^A
Late Seeding	2609.3	1248.8 ^B	1614.9 ^B	1560.0	2439.4	2122.8	765.9 ^B	4083.9 ^B
P- value	0.298	0.027	0.001	0.167	0.207	0.209	0.040	0.049

Table : 5E Yield 2025 (kg/ha)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Plant density (plants/sqm)							
Early Soy 1: (000.5)	2432.0 ^B	1441.8	1930.4 ^A	1746.0	2372.8	2152.4	1040.6 ^A	4327.4 ^A
Early Soy 2: (000.7)	2527.6 ^{AB}	1407.8	1915.6 ^A	1645.4	2320.7	2199.6	722.3 ^B	3855.3 ^B
Early Soy 3: (000.8)	2612.8 ^{AB}	1499.6	----	1722.9	2239.5	2315.3	1169.8 ^A	4188.4 ^A
Early Soy 4: (000.9)	2763.0 ^A	1456.4	2085.3 ^A	1737.0	2407.3	2180.1	711.9 ^B	4326.4 ^A
Normal Soy: (00.2)	2470.4 ^{AB}	1291.5	1504.0 ^B	1542.7	2240.2	2213.8	663.8 ^B	4345.8 ^A
P- value	0.021	0.095	0.0007	0.286	0.276	0.494	0	0

Thousand Kernel Weight (TKW) (g):

Thousand kernel weight (TKW) was measured on cleaned samples. In 2024, TKW varied across sites, highlighting the influence of local environmental factors. Varieties also showed significant differences, as detailed in the tables below. Overall, Prince Albert recorded the lowest TKW, likely due to frost events occurring between seeding and harvest, which may have reduced seed weight. The data was unavailable for Redvers and Swift Current.

Table:6 TKW (g) 2024

Seeding Date	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	TKW (g)					
Early Seeding	139.6 ^A	60.5	147.7 ^A	118.7	131.8	162.2
Late Seeding	134.6 ^B	60.5	135.0 ^B	118.3	131.5	164.7
P- value	0.008	0.946	0.042	0.627	0.779	0.100

Table : 6A TKW (g) 2024

Variety	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	TKW (g)					
Early Soy 1: (000.5)	127.4 ^C	54.9 ^B	131.6 ^B	110.8 ^B	118.7 ^C	157.8 ^{BC}
Early Soy 2: (000.7)	141.5 ^A	63.0 ^A	139.6 ^B	120.2 ^A	133.8 ^B	165.1 ^B
Early Soy 3: (000.8)	141.5 ^A	62.3 ^A	137.1 ^B	121.6 ^A	124.3 ^C	152.7 ^C
Early Soy 4: (000.9)	133.4 ^B	62.8 ^A	147.9 ^A	117.1 ^{AB}	134.9 ^B	162.7 ^B
Normal Soy: (00.2)	141.7 ^A	59.7 ^A	150.6 ^A	122.7 ^A	146.7 ^A	178.9 ^A
P- value	0	0	0	0.0005	0	0

In 2025, seed weight followed a pattern similar to 2024; however, Indian Head and Scott recorded the lowest thousand kernel weight, likely due to very low rainfall during the pod-filling stage at Indian Head and early frost at Scott. It was observed that early seeding date resulted in little higher TKW and this

difference was statistically significant at four sites (Prince Albert, Swift Current, Scott and Outlook). The data was unavailable for Redvers. The 2025 data are presented in the tables 6B and 6C.

Table:6B TKW (g) 2025

Seeding Date	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	TKW (g)						
Early Seeding	98.6	124.9 ^A	129.2 ^A	147.1	133.8	99.5 ^A	168.2 ^A
Late Seeding	96.1	114.8 ^B	108.5 ^B	143.3	133.5	91.8 ^B	159.3 ^B
P- value	0.2889	0.0245	0.0001	0.3075	0.9157	0.0155	0.0105

Table :6C TKW (g) 2025

Variety	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	TKW (g)						
Early Soy 1: (000.5)	89.5 ^B	110.2 ^B	125.8 ^A	135.8 ^B	129.8 ^C	92.5 ^{BC}	158.3 ^{BC}
Early Soy 2: (000.7)	100.8 ^A	127.4 ^A	117.1 ^B	151.9 ^A	139.3 ^B	99.9 ^A	171.2 ^A
Early Soy 3: (000.8)	104.1 ^A	----	120.1 ^{AB}	149.8 ^A	129.1 ^C	101.0 ^A	156.1 ^C
Early Soy 4: (000.9)	91.7 ^B	115.3 ^B	115.8 ^B	143.1 ^{AB}	122.4 ^D	88.6 ^C	165.8 ^{AB}
Normal Soy: (00.2)	100.8 ^A	126.5 ^A	115.5 ^B	145.6 ^A	147.8 ^A	96.5 ^{AB}	167.5 ^A
P- value	0	0	0.0006	0.0003	0	0	0.0002

Seed Protein (%): The seed protein data, as presented in the following tables, reveals a mix of statistically significant and non-significant results across different sites. A detailed breakdown of the statistical significance of seed protein content across different sites, seeding dates, and varieties is provided in tables 7 and 7A.

Table :7 Seed Protein (%) (2024)

Seeding Date	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	Protein (%)						
Early Seeding	38.5	33.6	35.4 ^B	35.2	31.7	37.2	39.7
Late Seeding	39.5	33.3	37.2 ^A	35.9	31.9	37.2	40.2
P- value	0.450	0.202	0.010	0.083	0.460	0.889	0.238

Table :7A Seed Protein (%) (2024)

Variety (Maturity)	Redvers	Indian Head	Prince Albert	Yorkton	Melfort	Scott	Outlook
	Protein (%)						
Early Soy 1: (000.5)	37.1 ^B	32.0 ^B	35.4 ^B	33.8 ^D	30.2 ^C	34.1 ^C	38.6 ^D
Early Soy 2: (000.7)	39.8 ^A	34.1 ^A	37.0 ^A	37.4 ^A	33.4 ^A	37.8 ^{AB}	41.2 ^A
Early Soy 3: (000.8)	39.8 ^A	33.4 ^A	36.5 ^{AB}	36.1 ^B	33.1 ^A	37.7 ^{AB}	40.2 ^B
Early Soy 4: (000.9)	39.3 ^A	33.8 ^A	36.4 ^{AB}	35.2 ^C	31.0 ^B	37.4 ^B	40.3 ^B
Normal Soy: (00.2)	39.1 ^A	33.9 ^A	36.4 ^{AB}	35.2 ^C	31.5 ^B	39.1 ^A	39.6 ^C
P- value	0.0	0.0	0.019	0.0	0.0	0.0	0.0

There were some significant results seen at Prince Albert, Yorkton and Outlook for the interaction between seeding date and variety. Data are presented in the tables below:

Table :7B Seed Protein (%) (Seed date X Variety) Prince Albert (2024)

Time /Trt	Protein	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	34.653									
Early x Early Soy 2	36.863	2.210*								
Early x Early Soy 3	35.393	0.74	1.47							
Early x Early Soy 4	35.405	0.752	1.457	0.013						
Early x Normal Soy	34.917	0.265	1.945	0.475	0.488					
Late x Early Soy 1	36.22	1.567	0.643	0.827	0.815	1.303				
Late x Early Soy 2	37.11	2.457	0.248	1.718	1.705	2.193	0.89			
Late x Early Soy 3	37.64	2.987*	0.778	2.248	2.235	2.723*	1.42	0.53		
Late x Early Soy 4	37.337	2.685*	0.475	1.945	1.932	2.42	1.117	0.227	0.303	
Late x Normal Soy	37.928	3.275*	1.065	2.535	2.523	3.010*	1.708	0.818	0.288	0.59

p-value=0.042

Table :7C Seed Protein (%) (Seed date X Variety) Yorkton (2024)

Time /Trt	Protein	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	33.8									
Early x Early Soy 2	36.813	3.013*								
Early x Early Soy 3	35.562	1.762*	1.250*							
Early x Early Soy 4	35.025	1.225*	1.788*	0.537						
Early x Normal Soy	34.588	0.788	2.225*	0.975	0.438					
Late x Early Soy 1	33.712	0.088	3.100*	1.85	1.313	0.875				
Late x Early Soy 2	38.037	4.237*	1.225	2.475*	3.012*	3.450*	4.325*			
Late x Early Soy 3	36.613	2.813*	0.2	1.05	1.587	2.025	2.900*	1.425*		
Late x Early Soy 4	35.287	1.487	1.525	0.275	0.262	0.7	1.575*	2.750*	1.325*	
Late x Normal Soy	35.8	2	1.013	0.238	0.775	1.212	2.088*	2.237*	0.813	0.513

p-value=0.015

Table :7D Seed Protein (%) (Seed date X Variety) Outlook (2024)

Time /Trt	Protein	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	38.725									
Early x Early Soy 2	41.275	2.550*								
Early x Early Soy 3	39.525	0.8	1.750*							
Early x Early Soy 4	39.9	1.175*	1.375*	0.375						
Early x Normal Soy	39.3	0.575	1.975*	0.225	0.6					
Late x Early Soy 1	38.475	0.25	2.800*	1.05	1.425	0.825				
Late x Early Soy 2	41.15	2.425*	0.125	1.625	1.25	1.85	2.675*			
Late x Early Soy 3	40.775	2.05	0.5	1.25	0.875	1.475	2.300*	0.375		
Late x Early Soy 4	40.625	1.9	0.65	1.1	0.725	1.325	2.150*	0.525	0.15	
Late x Normal Soy	39.9	1.175	1.375	0.375	0	0.6	1.425*	1.250*	0.875*	0.725

p-value=0.0006

In the 2025 season, protein content was generally unaffected by seeding date, except at Prince Albert, where late seeding resulted in significantly higher protein levels than early seeding. Analysis among varieties showed variable results across sites, with six out of eight sites displaying statistically significant differences. Notably, Early Soy 1: (000.5) consistently exhibited lower protein content across both 2024 and 2025, indicating strong genetic influence.

Table :7E Protein 2025 (%)

Seeding Date	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Protein (%)							
Early Seeding	38.8	29.4	34.2 ^B	34.6	35.8	37.6	31.4	35.2
Late Seeding	38.8	28.9	35.6 ^A	34.1	36.3	38.6	30.7	34.9
P- value	0.943	0.577	0.01	0.333	0.774	0.197	0.097	0.346

Table :7F Protein 2025 (%)

Variety	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
	Protein (%)							
Early Soy 1: (000.5)	37.4 ^B	28.1	33.6 ^B	33.4 ^B	34.1 ^C	36.6 ^C	28.8 ^C	34.6
Early Soy 2: (000.7)	39.5 ^A	30.1	35.1 ^A	35.5 ^A	37.9 ^{AB}	39.5 ^A	32.2 ^A	35.4
Early Soy 3: (000.8)	38.7 ^A	28.8	----	33.6 ^{AB}	39.1 ^A	37.9 ^B	32.2 ^A	35.2
Early Soy 4: (000.9)	39.2 ^A	28.9	35.4 ^A	34.3 ^{AB}	34.9 ^{BC}	38.1 ^B	31.4 ^{AB}	35.5
Normal Soy: (00.2)	39.3 ^A	29.8	35.6 ^A	34.6 ^{AB}	34.2 ^C	38.6 ^{AB}	30.8 ^B	34.6
P- value	0	0.168	0	0.025	0.0001	0	0	0.050

The interactions remained statistically non- significant among seed date X variety at all sites except at Yorkton, which is presented in the table 7G.

Table :7G Seed Protein (%) (Seed date X Variety) Yorkton (2025)

Time /Trt	Protein	Early,1	Early,2	Early,3	Early,4	Early,5	Late,1	Late,2	Late,3	Late,4
Early x Early Soy 1	36.005									
Early x Early Soy 2	38.685	2.68								
Early x Early Soy 3	38.332	2.327	0.353							
Early x Early Soy 4	33.245	2.76	5.440*	5.087						
Early x Normal Soy	32.94	3.065	5.745*	5.392*	0.305					
Late x Early Soy 1	32.262	3.743	6.423	6.07	0.983	0.678				
Late x Early Soy 2	37.168	1.163	1.517	1.165	3.923	4.228	4.905			
Late x Early Soy 3	40.018	4.012	1.332	1.685	6.773	7.078	7.755*	2.85		
Late x Early Soy 4	36.683	0.678	2.002	1.65	3.438	3.743	4.42	0.485	3.335	
Late x Normal Soy	35.578	0.428	3.108	2.755	2.333	2.638	3.315	1.59	4.44	1.105

P value-0.012

10. Conclusions

The data indicates that seeding date has a clear impact on key parameters such as days to flowering and days to maturity for all maturities of soybean tested. The observed variations suggest that earlier or later planting times can significantly influence the crop's developmental timeline according to the location of the site, likely due to differences in temperature, daylight duration, and other environmental factors experienced during the growing season.

The effects of seeding date on plant density varied across locations. In 2024, early seeding produced higher plant density at the two southern sites, while late seeding resulted in higher density at all other locations. In 2025, this pattern shifted, with the highest plant density observed at Indian Head and Prince Albert. These variations indicate that environmental factors, such as temperature and local conditions, likely influenced seedling establishment differently across sites.

Environmental conditions are key determinants of crop performance, and their influence on soybean was particularly evident in 2025, when variations in rainfall during critical periods of flowering and pod development affected yields at Indian Head, Scott and Prince Albert. Another important factor was early fall frost, as observed at Scott on 5 September 2025, which significantly impacted the crop and resulted in missing maturity data. Protein content showed mixed responses, indicating that seeding date did not consistently affect all sites; however, Early Soy 1: (000.5) consistently exhibited lower protein levels in both 2024 and 2025.

Maturity assessment also requires further investigation, as current maturity groups do not provide sufficient guidance for farmers in variety selection. Notably, Early Soy 3: (000.8) consistently reached maturity faster than other varieties. Overall, further research is needed to develop more concrete recommendations for optimal seeding strategies across different soybean maturity groups.

11. Technology transfer activities

This project was showcased during the growing season at the annual field days for all locations, except Swift Current. Anmoldeep Matharu highlighted the project at ECRF field day at Yorkton on 23 July 2024. This project was presented at the CLC field day in Prince Albert to 67 producers on 23 July 2024. Lana Shaw presented on the trial at NARF and AAFC Joint Field Day on July 18, 2024 with 97 attendees. Chris Holzapfel presented results from Indian Head at the IHARF Soil and Crop Management Seminar on Feb. 5, 2025 in Melville in the presence of 100 people. This trial was also highlighted at Indian Head field day in the presence of Megan Reed from SPG with the attendance of 145 people.

During 2025, the project was toured at the CLC field day on July 29, 2025, with 85 attendees. The project was showcased and presented by Anmoldeep Matharu at South East Research Farm's field day on 10 July 2025 with the attendee of 80. Ishita Patel talked briefly about this project at the Northern Plains Program Field Day on June 20th, 2025 with 28 producers and agronomists in attendance. The trial was marked with signage and passed by at NARF and AAFC Joint Field Days on July 23 and July 24, 2025 with 126 attendees on July 23rd and 36 attendees on July 24th.

12. Funding contributions & Acknowledgements

Financial support was provided by the Saskatchewan Pulse Growers; Sustainable Canadian Agricultural Partnership was recognized by all locations.

13. Appendix

Table: A Mean Temperature (°C)

Location	Year	May	June	July	August	September	Avg.
		-----Mean Temperature (°C)-----					
Redvers	2024	10.9	14.7	20.0	17.7	15.8	15.8
	2025	13.2	16.2	17.5	17.9	14.9	15.9
	Long term	11.1	16.2	18.7	18	12.5	15.3
Indian Head	2024	10.6	13.6	19.5	17.9	15.9	15.5
	2025	12.7	15.3	17.0	17.8	15.3	15.6
	Long term	10.8	15.8	18.2	17.4	11.5	14.7
Prince Albert	2024	8.4	11.3	18.1	15.2	12.7	13.1
	2025	11.2	12.7	14.9	17.1	13.9	13.9
	Long term	11.2	16.0	18.3	16.7	11.6	14.8
Swift Current	2024	10.6	14.3	21.3	19.4	16.7	16.5
	2025	13.1	15.9	18.0	19.0	16.7	16.5
	Long term	11.5	16.3	19.0	18.6	13.5	15.8
Yorkton	2024	10.5	14.2	20.3	17.7	-----	15.7
	2025	12.4	15.7	17.5	18.3	-----	15.9
	Long term	10.4	15.5	17.9	17.1	-----	15.2
Melfort	2024	10.1	13.2	19.4	17.4	15.6	15.1
	2025	13.8	15.0	17.0	18.0	15.0	15.7
	Long term	10.1	15.2	17.8	16.7	11.7	14.3
Scott	2024	9.8	13.3	18.9	17.4	14.7	14.8
	2025	12.9	14.6	15.8	17.4	17.5	15.6
	Long term	10.8	15.3	17.1	16.5	10.4	14.0
Outlook	2024	10.9	14.2	20.4	18.3	16.2	16.0
	2025	13.6	16.2	17.4	19.0	16.0	16.4
	Long term	11.3	16.2	18.7	17.8	12.9	15.4

Table: B Precipitation (mm)

Location	Year	May	June	July	August	September	Total
		----- Precipitation (mm) -----					
Redvers	2024	92	156.2	13.4	39	70.6	371.2
	2025	65	27	80	40	48	260
	Long term	60	95.2	65.5	46.6	32.7	300
Indian Head	2024	63.7	74.9	37.4	71.8	44.4	292.2
	2025	42.6	39.4	27.1	26.9	43.1	179.1
	Long term	51.7	77.4	63.8	51.2	35.3	279.4
Prince Albert	2024	69.6	118.8	31.4	42.0	27.4	289.2
	2025	2.2	137.6	8.6	51.2	3.8	203.4
	Long term	36.5	66.8	61.3	43.6	30.7	238.9
Swift Current	2024	73.6	52.1	18.6	18.2	47.8	210.3
	2025	34.2	31.3	78.2	92.6	0.8	237.1
	Long term	43.4	60.5	56.4	40.4	37.3	238
Yorkton	2024	56	120.4	22.9	42.3	-----	241.6
	2025	23.6	63.4	36.8	71.2	-----	195

	Long term	51	80	78	62	-----	271
Melfort	2024	73	84	36.1	31.9	33.8	258.8
	2025	4.8	93.2	25.9	113.5	20.3	257.7
	Long term	33.4	79.5	69.6	45.9	36	264.4
Scott	2024	74.2	112.0	26.7	42.8	39.5	295.2
	2025	11.8	103.7	28.7	64.5	64.5	273.2
	Long term	36.3	61.8	72.1	45.7	36.0	251.9
Outlook	2024	62.6	122	19.1	3.8	52.7	260.2
	2025	6.2	83.1	59.4	60.9	3.9	213.5
	Long term	41.1	62.7	54.7	43.2	30.8	232.5

Table. C Agronomic information (2024):

Operations	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
Seed date 1	13 May	11 May	May 15	13 May	15 May	10 May	14 May	10 May
Seed date 2	23 May	27 May	May 30	28 May	27 May	27 May	26 May	24 May
Previous crop	Canola	Wheat	Barley	Durum	---	Wheat	Wheat	Peas
Weed control	Glyphosate @0.67 lt/ac on 19 May	Glyphosate @0.67 lt/ac on 12 May and 2 June	Roundup Transorb HC @ 0.67/ac on May 28	Glyphosate @0.5 lt per ac on May 12	Transorb 0.66 l/ac On 12 May	Glyphosate @ 1 lt /ac on 12 May	Glyphosate 540 @ 1L/ac & AIM @ 35 ml/ac	N/A
In-crop (Agrochemical)	Viper 0.4 lt + UAN 28-0-0 @0.8 lt /ac on 20 June	@0.67 lt/ac on 20 June, 11 July for early seeding and 26 June and 18 July for late seeding	Assure 2 herbicide @ 0.5 L/ac on 26 June Priaxor @ 0.45 L/ha on 30 July	Assurell @ 220 ml/ac on 18 June	Weatherman 0.666 on 20 June	Viper ADV @ 400 ml/ac on June 20, ,Centurion @ 150 ml/ac on Jun 21; Glyphosate 540 @ 670 ml/ac on July 4 Cygon @ 700 L/ha on Aug 10, 2024	Solo Ultra Q: Solo ADV II @ 325mL/ac & Caziva Ultra Q @ 154mL/ac Cotegra @ 280mL/ac	Round up 540 on 4 th July 2024
Harvesting date	8 Sep	1 Oct	9 Oct	N/A	4 Oct	8 Oct	27 Sep and 8 Oct	15 Oct

Table. D Agronomic information (2025):

Operations	Redvers	Indian Head	Prince Albert	Swift Current	Yorkton	Melfort	Scott	Outlook
Seed date 1	13 May	13 May	May 12	16 May	18 May	15 May	15 May	19 May
Seed date 2	23 May	28 May	May 21	29 May	27 May	27 May	29 May	30 May
Soil temp (seed date 1)	22 °C	15.5°C	10.5 °C	13.9°C	7.9°C	14.7°C	11.3°C	17.5 °C
Soil temp (seed date 2)	18 °C	18.4 °C	8.5 °C	18.6°C	17.0°C	29°C	27.5°C	15.4 °C
Previous crop	Oats	Oat	Wheat	Durum	---	Wheat	Wheat	Canola
Weed control	14 May RU 540 @ 0.67 L+ 40L water/Acre	Glyphosate @0.67 lt/ac on 4 May and 0.67 l/ac Roundup Weather max plus 0.5% Merge applied on May 24, 2025	Roundup Transorb @ 0.67L/ha on May 14	Roundup Transorb @1L/ac + Aim @47ml/ac + Merge @1L/100L vol Authority 480 SC @118ml/ ac	1 L Transorb /ac On 8 May	May 5, 2025 - Authority 480 @ 118 ml/ac and StartUp @ 1L/ac.	13 May Glyphosate 540 @ 1L/ac and AIM @ 35mL/ac	June 20 th Poast Ultra x Merge @ 450ml/ac,
In-crop (Agrochemical)	with Viper 0.4L, UAN 0.81L + water 40L / acre on 11 June	- 0.67 l/ac Roundup Transorb HC applied on June 5 and July 1, 2025 (early seeding date) and July 1 and July 18, 2025 (normal seeding date)	Poast Ultra 30 May, Roundup Transorb 11 June, Centurion 25-Jun, Roundup Transorb 11 jul	Solo ADV @325ml/ ac, Proline 480 SC @85ml/ac (20gal/ac water vol)	Transorb 700 ml/ac On 18 June, Transorb 666 ml/ac On 10 July	Python A @ 0.1 L/ac and B @ 0.36 L/ac on Jun 17, 2025; Centurion @ 75 ml/ac on Jun 9, 2025; Basagran Forte @ 910 ml/ac and Assure II @ 300 ml/ac on Jun 27, 2025. Cotegra @ 283 ml/ac on July 10, 2025.	27 June, glyphosate 540 @ 0.67 L/ac And Fungicide 28 July Cotegra @ 280mL/ac	June 26th Viper, July 3rd Centurion ADV and Oct 1st Reglone lon.

Harvesting date	1 and 2 Oct	1 Oct	9 Oct	11 Sep. 24 Sep and 1 Oct	2 Oct and 7 Oct	10 Oct	30 Sep	10 Oct
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Fig: B Total rainfall received in July and August 2025 as compared to long term average

