Faba Bean Seeding Rate

Faba beans are an excellent pulse option for producers looking to diversify their crop rotations. This project evaluated faba bean performance under both dryland and irrigated conditions to determine the optimal seeding rate for new varieties across Saskatchewan's diverse growing environments.

In Saskatchewan, two main types of faba beans are grown. Low-tannin varieties are primarily used for livestock feed, while higher-tannin types are used for human consumption due to their lower vicine content, which reduces the risk of favism in susceptible individuals. One of the main production challenges remains seed size: large-seeded varieties frequently plug air seeders, causing delays during seeding.

The project was conducted at three locations: irrigated land at the Canada Saskatchewan Irrigation Diversification Centre (CSIDC; Outlook) and dryland sites at the Northeast Agriculture Research Foundation (NARF; Melfort) and the Indian Head Agriculture Research Foundation (IHARF; Indian Head). Four new low-vicine/convicine varieties were evaluated. Two smaller-seeded (CDC 1142 and CDC 1089) and two larger-seeded (Fabelle and Allison), with Snowbird as a check variety.

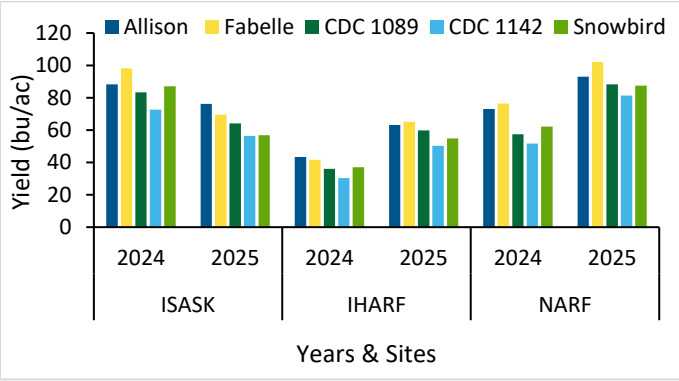

Figure 1: Yield of Low Vicine/Convicine varieties at all sites

Each variety was seeded at three rates: 30, 45, and 60 seeds/m², representing low, recommended, and high seeding rates. Data collection included plant density, height, disease presence, days to maturity, and yield, allowing assessment of variety, seeding rate, and site interactions.

Environmental conditions varied across sites and years, influencing plant height and yield. Crops at IHARF and NARF were consistently shorter than those at CSIDC in both 2024 and 2025. Yield rankings also shifted year-to-year. In 2024, CSIDC produced the highest yields under irrigation, followed by NARF and IHARF. In 2025, NARF out-yielded CSIDC and IHARF, likely due to higher rainfall in the Outlook region delaying maturity.
Across all sites, the larger-seeded varieties (Fabelle and Allison) performed best. They were taller, matured quicker, and consistently yielded higher than the smaller-seeded CDC 1142 and CDC 1089. Increasing seeding rates led to higher plant densities at all locations. However, there was no significant yield difference between the recommended rate (45 seeds/m²) and the higher rate (60 seeds/m²).

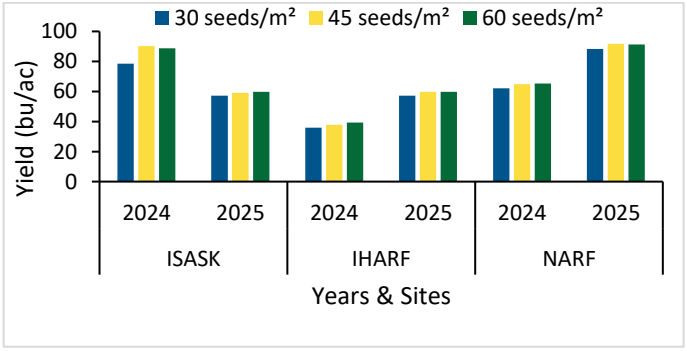

Figure 2: Yield average of all varieties at each site at different seeding rates

Based on these results, the most profitable approach for Saskatchewan producers is to seed larger-seeded varieties at 45 seeds/m². The full report for this project can be found in Irrigation Saskatchewan's 2025 Research and Demonstration report. This project was funded through the Sustainable Canadian Agricultural Partnership (SCAP) as a Strategic Field Program (SFP), with additional support from Saskatchewan Pulse Growers (SPG).