

For optimal flax yields, minimum plant populations of 300 plants/m are typically recommended in Saskatchewan. Past research utilizing early no-till equipment has shown that this minimum threshold was only achieved 60% and 73% of the time with early and late plantings, respectively. This suggests that producers must pay close attention to emergence with their seeding practices, adjusting rates as necessary.

Additionally, future flax agronomic research needs to focus on management effects on flax establishment. Flax is a poor competitor with weeds early in the season and experience has shown that this crop has difficulty recovering from a poor start; therefore, problems with plant establishment often result in sub-optimal yields. Postponing seeding until soils have warmed up can result in more rapid and complete emergence; however, flax requires a relatively long growing season and yields can be compromised if seeding is delayed too long. It is typically recommended that flax be seeded by mid-May.

Field trials were completed in 2013, 2014, and 2015 at Indian Head to demonstrate the effects of low (35-40 kg/ha), medium (55 kg/ha) and high (70-75 kg/ha) seeding rates at early and late seeding dates on establishment and seed yield of two flax varieties.

The overall performance of this crop was relatively insensitive to the specific seeding dates and rates that were evaluated. Early seeding resulted in lower plant populations in 2013, had no effect on emergence in 2015 and resulted in slightly, but significantly, higher plant populations in 2014. Overall yields were statistically similar regardless of whether flax was seeded as early as possible in May or at the end of the month; however, earlier seeding tended to be favorable in 2013 while later seeding was preferable in 2015 where the spring was extremely dry but moisture conditions improved for the latter half of the season. While later seeding consistently reduced days to maturity, early seeded flax was generally ready to harvest up to 14 days earlier and, as such, will be at a lower risk of yield or quality loss due to fall frost. While seeding early is usually recommended, this demonstration showed that postponing seeding to the end of May will not typically result in lower yields or maturity issues.

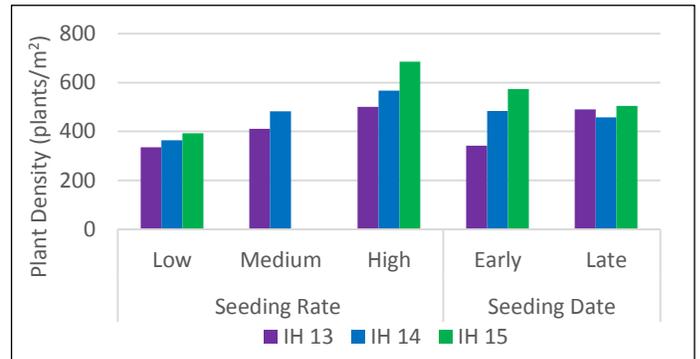


Figure 1: Effect of seeding rate and date on flax plant populations.

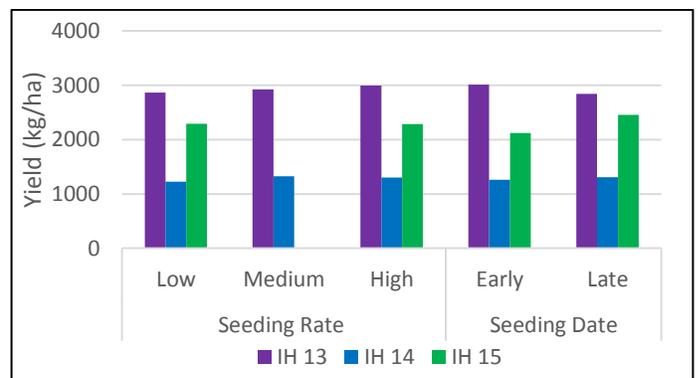


Figure 2: Effect of seeding rate and date on flax yield.

While significant in two of three years, the effect of seeding rate was relatively small at the rates evaluated and under the environmental conditions encountered. When significant in 2013 and 2014, increasing seeding rates from <40 kg/ha to >70 kg/ha only resulted in an additional 2-4 kg/ha yield for each additional kg/ha of seed used. In 2015, there was no observed benefit to higher seeding rates. While seeding rate effects on yield were small, excellent emergence was achieved, and higher seeding rates are more likely to be beneficial under less favorable environmental conditions. Higher seeding rates also tended to accelerate maturity which can be advantageous with delayed seeding or in more northern environments. Higher seeding rates can also promote more uniform fields in more variable landscapes.

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