

Hemp Seeding Date Demonstration for Grain Production



Objectives:

- Demonstrate different seeding dates of three varieties of conventional hemp for ideal seed timing at various locations throughout Saskatchewan.

Trial Design:

- Sites included Scott, Outlook, Melfort and Indian Head, SK in three years from 2021 to 2023.
- Outlook's site was irrigated, as opposed to the three other dryland sites.
- Treatments of three high-yielding dwarf varieties suitable for the Saskatchewan Climate were grown, X95, Picolo and Kantani. Each variety was seeded three times, end of May, middle of June and beginning of July.

Results:

- Melfort encountered extremely poor germination in 2021 and 2023 resulting in the loss of some plots.
- Plant densities were consistently higher in 2023 across all sites – densities ranged between 5.5 to 13 pl/ft² depending on the location, with Scott having the lowest plant densities.
- The highest plant densities were found in X95 at all sites.
- The hemp height of the irrigated site was almost double that of the dryland sites.
- Indian Head had the highest average yields of the dryland sites (19 bu/ac) followed by Scott (15 bu/ac) and Melfort (12 bu/ac).
- X95 had the highest average yield over all three years at Outlook (24 bu/ac), Scott (15 bu/ac) and Melfort (12 bu/ac, 2022 and 2023 only). While Katani in



Figure 2. May seeding date X95 on June 30th, 2022 and July 19th, 2022, respectively at Scott, SK.

Indian Head had the highest average yield over the study (20 bu/ac).

- May seeding date and X95 in all sites had the longest days to maturity. The indeterminate growth habit of hemp could account for this.

Conclusions:

Weather conditions and results varied among locations and years, emphasizing the importance of tailored recommendations for each site. **Among the three seeding dates investigated, the mid-June seeding date consistently delivered the best results, leading to enhanced yield and plant densities.** While late May seeding generally performed reasonably well, late June / early July seeding often resulted in lower yields and, in some cases, the plants failed to reach maturity when seeded this late. **The variety X59 consistently outperformed the other varieties tested, establishing itself as the preferred choice for achieving higher yields.** Producers should consider site-specific seeding dates and varieties based on local conditions for optimal

hemp cultivation. When harvesting hemp, it is important to pay attention to crop moisture. As combining too early often resulted in dirty grain samples with high moisture and dockage, while delayed harvest resulted in straw wrapping and hanging up inside the combine. As there are still considerations before the full integration of hemp into Saskatchewan agriculture, it is important to restate that the optimal seeding date differed with the region of cropping.



Figure 1. Physiological maturity of July seeded X95 treatment in (left to right) 2021, 2022, and 2023. Pictures were taken (left to right) on October 6, 2021, October 13, 2022 and October 10, 2023 at Scott, SK.

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