Hemp Seeding Date Demonstration for Grain Production

Hemp is a newer crop in Saskatchewan and is a high value crop with good yield potential. Discovering optimum seeding dates for this high value crop will encourage local growth in the conventional hemp industry and help ensure that new growers have access to information that will contribute to their success. Having regional seeding dates and variety recommendations would increase acres of this crop in Saskatchewan and provide economic benefits to the producers. The primary aim of this project was to identify the optimal seeding date for conventional hemp in Saskatchewan. Three hemp varieties: X59, Picolo, and Kantani were planted at three distinct times: late May, mid-June, and early July. Field trials were set up at Outlook, Scott, Melfort, and Indian Head from 2021-2023. Outlook was the only irrigated site, whereas the other three sites were non-irrigated.

The target plant population was 100-125 plants/m^2, but some sites experienced lower densities due to drier soil conditions. Throughout the study, all sites faced drier conditions with temperatures exceeding the long-term averages, impacting the yield potential of dryland sites. In the irrigated trial at Outlook, mid-June seeding date exhibited a yield advantage (Figure 1) and better plant emergence compared to early and late seeding dates. This trend was consistent across all dryland sites (Figure 2), demonstrating promising yields when seeded in mid-June. 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. Among the three tested varieties, X59 consistently outperformed the other varieties at all sites, showcasing higher yield potential in Saskatchewan's growing conditions. Hemp height was influenced by water availability at each site, with the irrigated site displaying almost double the height of dryland sites. Assessing maturity proved challenging but was also impacted by the seeding date. Expressed as days from seeding, early seeded hemp took longer to reach physiological maturity than later seeding dates tested in this study. In conclusion, producers should consider site-specific seeding dates and varieties based on local conditions for optimal hemp cultivation.

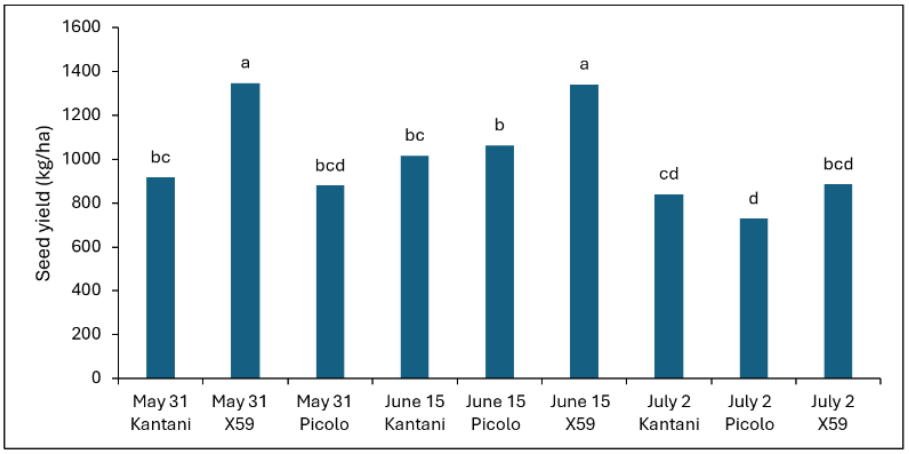

Figure 1. Hemp seed yield as Influenced by seeding date and varieties at Outlook (combined 2021, 2022, and 2023).

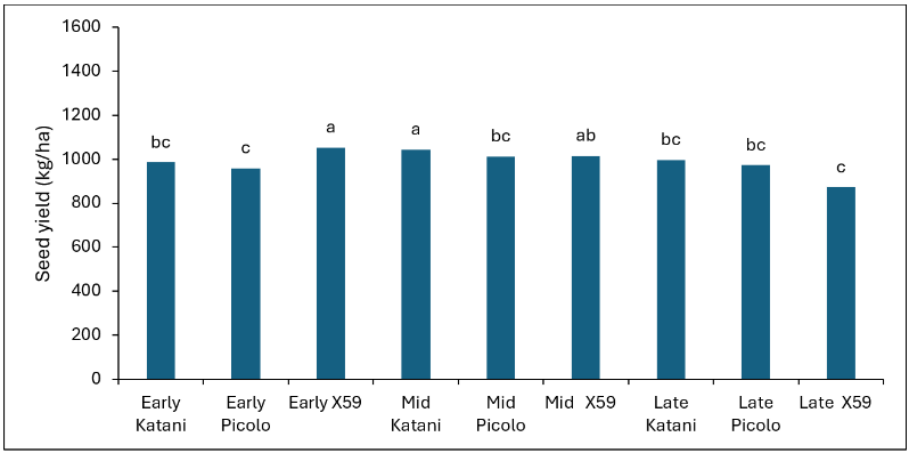

Figure 2. Hemp seed yield as Influenced by seeding date and varieties at Indian Head (combined 2021, 2022, and 2023).

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