Factsheet: Evaluating Yield Potentials Through Seeding Dates

Objective:

The objective of this project is to demonstrate the advantages and disadvantages to various seeding dates for mustard production.

Methodology:

The demonstration was arranged as a randomized complete block design with four replicates at Scott 2017. The treatments consisted of two varieties (yellow and oriental mustard) and six seeding dates, spaced approximately 10 days apart beginning from end of April to mid-June. Actual seeding dates started early May rather than late April due to late frost, snowfall and excessive moisture. The plots were direct-seeded into wheat stubble using an R-Tech plot drill on ten-inch row spacing. Weeds and diseases where be controlled using registered herbicide and foliar fungicide applications. Soil temperature and soil moisture were collected at time of seeding.

Table 1: Treatment list representing treatment numbers, variety and seeding date.

Treatment #	Variety	Seeding Date	Actual Seeding Date
1	Yellow: AC Pennant	End of April	May 4th
2	AC Pennant	Begin of May	May 12th
3	AC Pennant	Mid- May	May 24th
4	AC Pennant	End of May	June 2nd
5	AC Pennant	Begin of June	June 12th
6	AC Pennant	Mid- June	June 23rd
7	Oriental: Cutlass	End of April	May 4th
8	Cutlass	Begin of May	May 12th
9	Cutlass	Mid- May	May 24th
10	Cutlass	End of May	June 2nd
11	Cutlass	Begin of June	June 12th
12	Cutlass	Mid- June	June 23rd

The full report is available at www.warc.ca. Project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward 2 bi-lateral agreement
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Key Findings:

- For both mustard classes, seeding in May was beneficial as it allowed for utilization of soil moisture and avoidance of flowering during high temperatures
- Yellow mustard was less affected by early seeding compared to oriental mustard, however, both exhibited a severe yield decline when seeding was delayed until June.
- The implications of this study coincide with current recommendations in which mustard should be seeded in early to mid-May in order to maximize yields, regardless of reduced plant populations.
- Delayed seeding resulted in both yellow and oriental mustard in shorter days to maturity (DTM) by 9 and 15 days, respectively. A shortened DTM reduced the days required for greater seed production and seed size.
- Although DTM was shortened, the length of time to reach harvest maturity declined, resulting a greater risk of frost of delayed seeded mustard.
- Overall, this demonstration indicates to producers that seeding dates plays a very large role in yield and should be considered when planting.

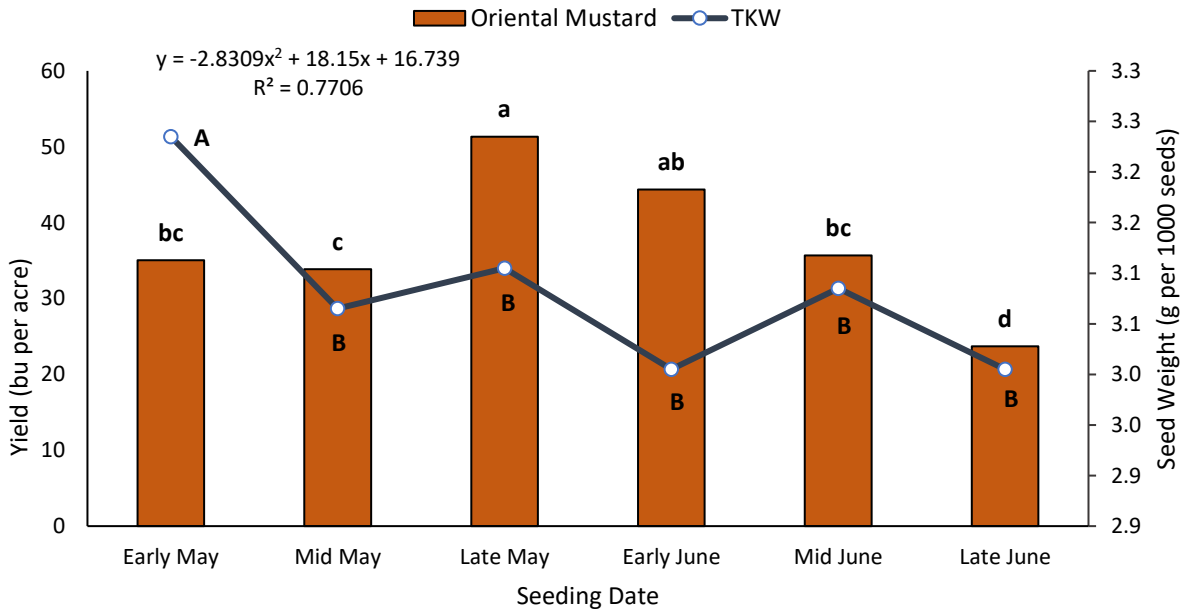

Figure 4. Seeding date had a significant linear and quadratic effect (P= <0.0001; <0.0001) on yield (bu per acre) and a significant effect (P= 0.0093) on seed size (g per 1000 seeds) of oriental mustard (Cutlass). Different letters indicate a significant difference (P < 0.05).

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