



EFFECT OF PLANTING DATE, RATE, AND PRODUCT ON WHEAT YIELD

TRIAL OVERVIEW

- There can be advantages to adjusting the planting density when changing planting dates for wheat.
- Increased seeding rate had a yield benefit for fields planted later than the optimal seeding date according to Kansas research.¹
- Seeding rate did not affect yield with the earliest planting date in the four-year study. Plants from the early planting date had adequate time to tiller.¹
- There is less time for tillering with later planting dates. Tillers can account for 70 percent of grain yield in a normal year.²
- Planting date should allow for sufficient, but not excessive tillers. Increased planting density may also increase number of wheat heads per acre.

RESEARCH OBJECTIVE

- Increased planting density is another way to increase the number of wheat heads per acre. This study was conducted in attempt to better understand planting date and population for different wheat products. Specifically, the study set out to find the best timing and planting rate for different wheat products grown in western Nebraska.

Location	Soil	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield/Acre	Planting Rate/Acre
Gothenbourg, NE	Silt loam	Wheat	No-till		07/22/2016	100	800,000; 1,400,000; and 2,000,000 seeds/acre

SITE NOTES:

- Wheat products used in this study included Early Maturity, Medium-Early Maturity, Medium Maturity, and Medium-Late Maturity. Wheat was no-till planted into wheat residue on four different dates: September 28, October 13, October 28, and November 24. Three seeding rates were used: 800,000; 1,400,000; and 2,000,000 seeds/acre.
- The study was located in a dryland field with adequate moisture. The field was no-till and in a winter wheat rotation.
- Study design was a randomized complete block with a factorial design with factors: (1) planting date, (2) wheat product, and (3) seeding rate and had four replications.

UNDERSTANDING THE RESULTS

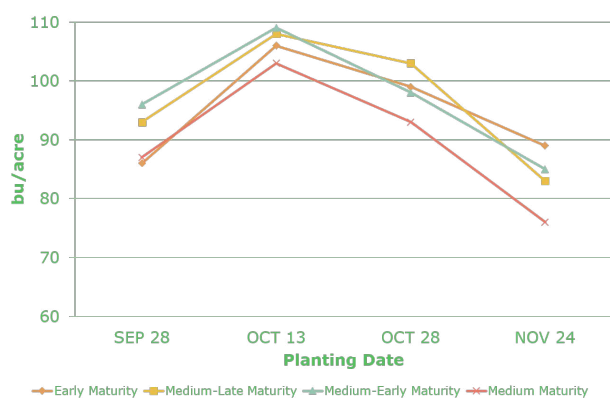


Figure 1. Effect of Planting Date and Maturity on Wheat Yield.

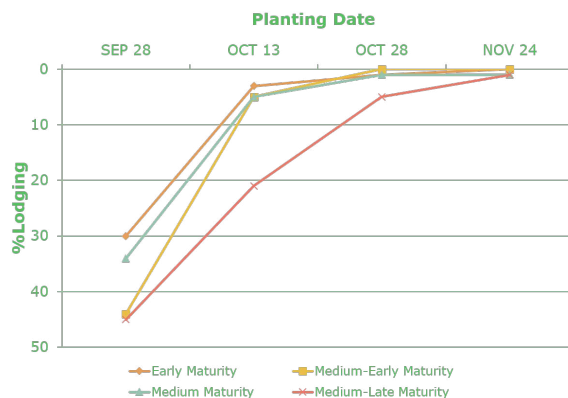


Figure 2. Effect of Planting Date and Wheat Product on Lodging.

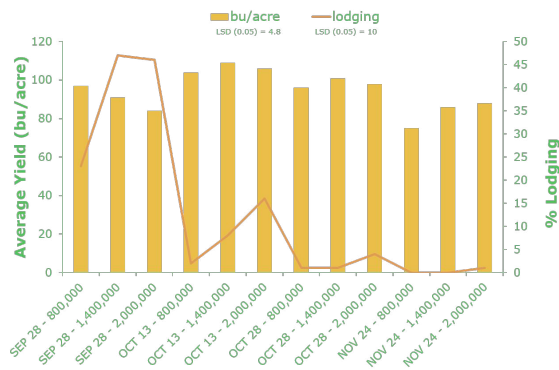


Figure 3. Effect of Planting Date and Rate on Wheat Yield and Lodging.

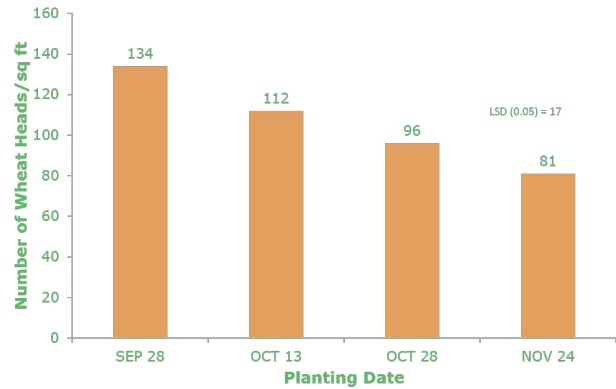


Figure 4. Effect of Planting Date on Number of Wheat Heads.

- With earlier planting comes a greater risk of lodging at harvest. Yield potential diminished with later planting dates.
- The October 13 planting date provided the best timing to limit lodging, while still capturing yield potential for the growing conditions observed in the fall of 2015.
- While a normal planting date is optimum, reducing the planting population may help reduce lodging at earlier planting dates.
- Increasing the planting population at later planting dates may help increase yield potential to compensate for fewer tillers.

SOURCES

¹ Olson, B. and Aiken, R. 2015. Wheat planting date and seeding rate research in northwest Kansas. Kansas State University.

² Klein, R. Winter wheat seeding date can have major effect on yields. UNL CropWatch. University of Nebraska, Lincoln.

LEGAL STATEMENT

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