

Title: Planting Date and Rate Study with Spring Wheat and Barley.
Year: 2010
Location: Western Triangle Research Center, Conrad, MT
Personnel: John H. Miller and Grant Jackson, Western Triangle Ag. Research Center, Conrad, MT.

Introduction: The optimum window of April 7 to May 7 for planting small grains at Conrad was determined from planting date studies conducted nearly 30 years ago¹. A planting date study for spring grains was initiated in 2007 and continued in 2008, by Dr. Greg Kushnak, the study was not planted in 2009 and was resumed in 2010 to determine whether previous planting-date recommendations are still applicable.

Methods: In 2010, spring wheat 'Choteau' was planted on three dates: April 5, April 20, and May 13. The plan to plant every two weeks from the first date of planting was followed as closely as weather would allow. Being able to start planting in early April allowed for a mid and late planting season date. Within each date, three rates of seeding were applied: 15, 23 and 30 seeds/ft². 120-20-20 pounds per acre of fertilizer was applied to the spring wheat.

Results, Spring Wheat Dates: The early April date was planted in cold and dry conditions and the second date was planted when the plot area was dry enough to plant after a significant rainfall event. The second date was followed by more rainfall events and cool temperatures, keeping the soil temperatures cool, delaying germination and emergence of both early planting dates. Essentially, the spring wheat for the early and mid planting season dates stayed at the same growth stages for the entire growing season. The May planting date was about two weeks behind the early planting dates throughout the 2010 growing season. Unusually cold temperatures and wet conditions delayed all plant maturity in 2010. In 2010, yield and test weight, while protein increased for the May 13 planting date (Table 1). These plots also received significant hail events on July 19 and September 5.

Yield for the April plantings were 12 or more bu/a greater than for the May 13 planting. Test weight declined with later planting dates, but was still above 60 lbs/bu. Protein was highest for the May 13 planting. In 2007, protein also increased with delayed planting (Table 2)¹.

Protein decreased slightly with the 30 seeds/ft² seeding rate when compared to the 15 seeds/ft². Yields were almost 5 bu/a higher for the two higher seeding rates, although, the higher seeding rates were not different from each other with respect to yield. Test weights were slightly higher for the higher seeding rates, whereas, protein was higher for the lowest seeding rate (Table 1).

Results, Barley Dates: **The barley plot was lost due to hail on July 19 and again on September 5.**

Future Plans: The study needs to be redesigned to include four seeding rates between 15 and 21 seeds/ft², and to include both day-length sensitive and insensitive varieties¹ of spring wheat and barley.

¹ Dr. Gregory D. Kushnak, Western Triangle Ag. Research Center 2008 Annual Report.