

Project Title: Investigation of yield component traits and yield under two seeding densities

Objective: To investigate the interactions between yield component traits and the resulting yield responses in relation to seeding density.

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Summary:

This study used several breeder's lines (near-isogenic lines) planted at 20 plants/ft² and seven plants/ft² under rainfed condition in Creston, MT. Specific management information is shown in Table 1.

Yield component traits evaluated were productive tiller number, spikelet per spike, kernel weight, yield, and grain protein. Overall, there was no significant yield difference between wheat lines in question (except the lines for photoperiod sensitivity) under two contrasting seeding populations. This was due to the significant interactions between yield component traits (sometimes referred to as trait compensation). The yield component interactions thus limit the use of a particular yield component attribute for yield improvement.

In this report, no agronomic and yield data are provided.

Table 1. Management information

Seeding date:	4/22/2019	Field Location:	R4
Julian date:	111	Harvest date:	8/30/19
Seeding rate:	Per treatment	Julian date:	242
Previous crop:	Alfalfa	Soil type:	Fine sandy loam
Herbicide:	Huskie/Axial: 5/23 Stinger: 6/10	Tillage:	Conventional
Insecticide:	None	Soil residual nutrient (NO ₃ ⁻¹ , P, K lb/A):	26-6-146
Fungicide:	None	Nutrient fertilizer applied (N, P ₂ O ₅ , K ₂ O lb/A):	84-45-100