Project Title: 2021 Hulless Barley Variety Trial

Objective: To evaluate the agronomic performance of hulless barley varieties grown in northwestern Montana.

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Summary:

Sixteen hulless barley lines were planted on April 28, 2021 and harvested on August 30, 2021 (Table 1). They were managed under rainfed conditions, and received 7.8" of rainfall throughout the growing period.

Average yield for the study was 109.4 bu/A, with the highest yield at 135.6 bu/A for Havener to the lowest at 86.0 bu/A for MT18H01901. The highest protein content was 14.3% for MT18H03101 while the lowest was 10.9% for Havener. The average protein content across the trial was 12.9%. Six lines showed significant lodging at 23% or greater, and included: MT18H02801, MT19_H11_07, MT19_H14_05, MT19_H11_04, MT19_H14_10, and MT18H03101. Average test weight of all lines was 53.9 lb/bu. The highest test weight was MT18H02901 at 58.4 lb/bu and the lowest was MT19_H11_07 at 49.8 lb/bu. The average height was 82 cm, with the tallest variety at 91.4 cm for MT19_H11_04 and the shortest at 67.8 cm for MT19_H08_15 (Table 2).

Table 1. Management information

Seeding date:	4/28/2021	**Field Location:**	Y1
Julian date:	118	**Harvest date:**	8/30/2021
Seeding rate:	NA	**Julian date:**	242
Previous crop:	Winter Wheat	**Soil type:**	Silty Clay Loam
Herbicide:	Axial Bold / CleansweepM 5/27/2021	**Tillage:**	Conventional
Insecticide:	None	**Soil residual nutrient (NO_3^{-1}, P, K lb/A):**	92-20-292
Fungicide:	None	**Nutrient fertilizer applied (N, P_2O_5, K_2O lb/A):**	Spring 2021, 50-30-50-10S

Table 2. Agronomic performance of hulless barley

Variety/Line	HT (cm)	LOD %	YLD (bu/A)	PRO %	TWT (lb/bu)
Havener	77.1	2.0	**135.6**	10.9	56.0
MT18H02702	**81.7**	0.0	**126.7**	11.5	52.5
MT18H02901	**85.3**	0.0	121.2	12.3	**58.4**
MT19_H11_13	**82.9**	0.0	120.1	12.2	55.9
MT18H02801	**86.0**	**25.0**	119.3	11.8	**57.1**
MT19_H11_07	77.3	**27.0**	114.8	12.5	49.8
MT16H09302	79.2	0.0	112.7	12.3	51.6
MT19_H14_05	**81.8**	**35.0**	110.9	13.4	52.4
MT16H09308	77.6	0.0	110.0	12.8	55.2
MT19_H11_05	**88.0**	5.0	109.1	**13.7**	55.5
MT19_H11_04	**91.4**	**28.0**	101.9	**13.8**	53.9
MT18H03003	**82.9**	3.0	101.7	**14.1**	54.8
MT19_H14_10	**87.9**	**30.0**	97.0	**14.0**	50.8
MT18H03101	**81.6**	**23.0**	95.3	**14.3**	51.0
MT19_H08_15	67.8	0.0	88.2	13.5	54.7
MT18H01901	**84.1**	5.0	86.0	**13.8**	52.2
Mean	82.0	11.5	109.4	12.9	53.9
CV	7.3	131.2	5.4	3.1	1.9
LSD	10.1	25.1	9.9	0.7	1.7

Bolding denotes equal value to highest or earliest value within a column based on LSD(0.05)

HT = height, LOD = lodging, YLD = yield, PRO = protein, TWT = test weight