

Project Title: 2021 Barley Malt Intrastate

Objective: To evaluate the performance of selected malt barley varieties in northwestern Montana

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Summary:

Forty nine malt barley varieties were planted on April 21st, 2021 and harvested on August 16th, 2021 (Table 1). They were managed under rainfed conditions and received 7.61” of rainfall throughout their growing period.

The average yield of all varieties was 145.5 bu/A, ranging from 167.5 bu/A for MT17M01906 to 115.6 bu/A for MT17M05808. The average protein content was 12.1% ranging from 13.6% for MT18M10205 to 10.9% for MT18M09602. All varieties had a high percent plump rate, with an average of 96.2%. The variety with the highest percent plump was MT18M10207 at 99%, while the lowest was MT17M05808 at 88.4% (Table 2).

Many lines evaluated had considerable amounts of lodging at harvest. Only ten varieties had lodging scores under 10%. Many varieties lodged 40% to 50% with the highest scoring of 62% for MT17M05508, however this variety still had a high yield. The average height was 94.1 cm, ranging from 82.8 cm from MT18M09301 to 107.4 from MT16M00709 which also had a significantly high lodging rate. Average test weight was 52.5 lb/bu with the lowest weight at 49.8 lb/bu for the variety Odyssey to the highest at 53.9 lb/bu for MT18M11004.

Table 1. Management information

Seeding date: 4/21/2021	Field Location: Y2
Julian date: 111	Harvest date: 8/16/2021
Seeding rate: NA	Julian date: 228
Previous crop: Winter Wheat Axial Bold /	Soil type: Silty Clay Loam
Herbicide: CleansweepM 5/27/2021	Tillage: Conventional
Insecticide: None	Soil residual nutrient (NO₃⁻¹, P, K lb/A): 110-14-404
Fungicide: None	Nutrient fertilizer applied (N, P₂O₅, K₂O lb/A): Spring 2021, 50-30-50-10S

Table 2. Agronomic performance of malt barley varieties

Variety	HT (cm)	YLD (bu/A)	PRO %	LOD (%)	TWT (lb/bu)	Plump %
MT17M01906	93.7	167.5	12.3	7.0	52.4	95.6
MT18M10106	93.5	167.1	11.2	45.0	53.6	97.8
MT18M09804	101.0	165.8	12.6	18.0	53.4	98.6
MT17M00302	99.9	164.9	11.5	23.0	53.3	97.4
MT18M09902	98.7	164.8	12.4	28.0	52.8	97.6
MT17M04801	95.4	161.0	11.4	23.0	53.6	96.9
MT17M05508	95.7	160.9	12.4	62.0	52.1	93.8
MT16M01801	98.0	158.9	11.6	23.0	52.5	97.7
MT16M01902	88.8	158.6	12.2	18.0	51.3	95.9
MT18M10207	100.9	158.4	13.1	0.0	53.0	99.0
MT17M01908	91.8	156.9	12.0	2.0	53.4	98.9
MT18M10107	97.6	156.8	12.3	14.0	53.0	98.2
MT18M11006	97.2	155.9	12.2	30.0	53.0	96.8
MT18M11103	97.4	153.4	11.9	21.0	51.4	94.7
MT16M05403	94.1	153.0	12.0	40.0	53.8	96.1
Merit 57	92.4	150.9	12.5	38.0	51.8	92.1
MT18M10401	92.3	150.8	12.0	19.0	53.8	98.9
MT18M09403	89.1	148.1	12.4	15.0	51.5	97.8
MT18M09602	96.0	147.7	10.9	25.0	53.4	97.1
MT16M02201	99.4	147.6	12.0	27.0	51.7	97.2
MT18M09301	82.8	147.4	12.4	18.0	50.3	95.4
MT17M02507	94.4	146.6	11.0	50.0	52.5	97.9
MT18M09802	96.5	145.7	12.2	40.0	52.3	95.4
MT18M09904	94.0	145.2	12.0	43.0	51.5	93.0
MT18M11101	84.4	145.0	11.7	6.0	53.3	94.9
MT18M10204	88.8	144.7	12.2	31.0	52.0	95.2
MT18M11004	97.0	144.5	13.3	34.0	53.9	94.6
MT18M11105	92.7	143.1	12.0	29.0	53.3	96.8
MT16M05610	91.3	142.6	11.9	31.0	51.3	95.9
MT18M11002	100.8	141.9	13.1	50.0	53.8	95.3
Odyssey	74.1	140.8	11.4	23.0	49.8	96.5
MT18M06008	94.0	140.0	12.2	35.0	52.9	93.9
MT16M00709	107.4	138.8	11.5	36.0	53.1	97.3
MT17M06305	102.9	138.6	12.0	37.0	53.2	98.3
MT18M06009	85.6	137.8	11.6	13.0	52.6	95.7
MT18M09901	101.1	137.3	12.5	44.0	51.8	97.7
MT18M06011	86.7	137.2	12.1	3.0	53.1	94.1
MT16M00707	100.6	136.6	12.4	13.0	53.3	98.4
Hockett	91.8	136.6	12.7	26.0	52.9	92.3
MT17M01711	87.7	136.4	11.7	24.0	51.1	93.4
MT18M09205	98.1	136.0	11.4	29.0	51.0	97.6
MT18M06012	84.7	134.3	11.6	2.0	53.1	97.8

Variety	HT (cm)	YLD (bu/A)	PRO %	LOD (%)	TWT (lb/bu)	Plump %
MT16M09602	87.5	132.2	11.9	15.0	53.1	97.4
MT17M05502	105.0	131.3	12.6	58.0	53.0	94.7
MT18M11106	91.8	128.2	12.5	33.0	51.4	96.5
MT18M10208	96.2	126.9	12.8	14.0	52.3	97.7
MT18M10205	85.5	126.6	13.6	10.0	51.9	97.6
MT17M05416	94.1	124.0	12.1	34.0	51.4	94.8
MT17M05808	98.3	115.6	13.3	51.0	50.5	88.4
Mean	94.1	145.5	12.1	26.6	52.5	96.2
CV	5.0	9.2	4.2	57.4	1.3	1.8
LSD	8.4	25.2	0.9	27.7	1.3	3.3

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

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