

**Project Title:** 2022 Forage Intrastate Advanced Yield Trial

**Objective:** To evaluate the performance of developmental forage barley lines in northwestern Montana

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**Summary:**

Forage barley varieties were seeded on April 29<sup>th</sup>, 2022 and harvest on August 17<sup>th</sup>, 2022 (Table 1). They were managed under rainfed conditions with a total of 8.1 inches of rainfall received during the growing period (April-Aug).

The highest yielding variety was MT17F02410 with an average yield of 110.2 bu/A. The lowest yielding variety was MT19\_F01\_03 with an average yield of 74.3 bu/A. The overall yield average was 88.08 bu/A. The average forage dry matter was 28.56% and ranged from 30.8% for MT19\_F04\_01 to 27% for MT18F00812. The average ADF was 37.65% and ranged from 39.9% for Haymaker to 35% for MT19\_F04\_02. The average NDF was 62.0%, with the highest being 65.6% for Haymaker and the lowest at 58.8% for MT19\_F04\_02.

**Table 1.** Management information

<b>Seeding date:</b>	4/29/2022	<b>Field Location:</b>	Y5
<b>Julian date:</b>	119	<b>Harvest date:</b>	8/17/2022
<b>Seeding rate:</b>	NA	<b>Julian date:</b>	229
<b>Previous crop:</b>	Spring Wheat CleansweepM	<b>Soil type:</b>	Silty Clay Loam
<b>Herbicide</b>	1pt/A + Axial Bold 15oz/A	<b>Tillage:</b>	Conventional
<b>Insecticide</b>	None	<b>Soil residual nutrient (NO3-1, P, K lb/A):</b>	108-10-248
<b>Fungicide</b>	None	<b>Nutrient fertilizer applied (N, P2O5, K2O lb/A):</b>	50-40-50

**Table 2.** Agronomic performance of forage barley

Variety/Line	Heading (julian)	HT (cm)	Forage Biomass (tons/A)	DM (%)	ADF (%)	NDF (%)	YLD (bu/a)	TWT (lb/bu)
MT17F02410	184	94.1	4.775	27.8	<b>38.2</b>	<b>64.0</b>	<u>110.2</u>	50.1
MT16F02401	183	94.9	<u>5.996</u>	27.4	<b>38.2</b>	<b>64.4</b>	<b>104.3</b>	45.9
MT16F02406	186	97.2	4.766	27.5	36.8	60.6	<b>101.6</b>	<u>50.6</u>
Haymaker	<b>187</b>	98.7	4.763	28.5	<u>39.9</u>	<u>65.6</u>	<b>100.1</b>	50.3
MT18F00503	<b>187</b>	100.4	<b>5.27</b>	27.6	38.1	<b>63.5</b>	<b>97.4</b>	48.9
MT18F00803	184	95.2	<b>5.532</b>	28.9	36.1	61.4	96.2	46.7
Lavina	183	93.8	<b>5.198</b>	28.2	38.1	<b>63.4</b>	95.2	48.4
MT16F01601	182	96.3	4.639	27.9	36.2	61.2	93.7	48.7
MT19_F06_02	182	89.9	4.534	29.2	37.1	<b>62.8</b>	92.8	45.6
MT16F02405	181	97.0	<b>5.056</b>	<b>30.5</b>	36.9	59.8	90.1	48.8
MT18F00507	<b>187</b>	95.2	<b>5.228</b>	27.4	36.3	61.6	89.1	47.7
MT16F02903	183	<b>107.6</b>	<b>5.019</b>	27.4	<b>39.0</b>	<b>64.0</b>	88.0	50.1
MT18F00714	<b>187</b>	100.3	4.633	28.3	36.6	62.0	86.9	46.4
MT19_F07_04	179	93.7	<b>4.859</b>	<b>29.8</b>	<b>38.2</b>	61.9	86.0	46.2
MT19_F01_01	181	100.8	<b>4.981</b>	29.2	<b>39.2</b>	<b>64.0</b>	84.7	49.2
MT17F01612	180	95.0	4.737	28.2	36.6	60.1	81.9	48.1
MT18F00812	<u>188</u>	101.2	<b>5.215</b>	27.0	<b>39.1</b>	<b>64.8</b>	81.4	43.3
MT Cowgirl	183	99.2	<b>4.969</b>	28.8	<b>38.2</b>	<b>64.1</b>	80.2	48.4
MT19_F04_01	179	95.7	4.186	<u>30.8</u>	36.5	60.5	80.1	48.4
MT19_F03_01	179	96.4	4.81	<b>29.3</b>	37.5	62.7	80.0	47.0
MT19_F05_03	177	97.3	4.791	<b>30.4</b>	37.7	62.2	80.0	47.8
MT18F00607	<b>188</b>	<b>102.5</b>	4.082	27.5	37.5	<b>64.5</b>	78.2	47.2
MT19_F04_02	183	97.8	<b>5.141</b>	29.2	35.0	58.8	75.1	46.6
MT18F00908	183	<b>103.8</b>	4.82	<b>29.7</b>	<b>38.9</b>	<b>64.6</b>	74.3	47.7
MT19_F01_03	180	<u>108.5</u>	<b>5.427</b>	27.5	<b>39.4</b>	62.5	74.3	48.2
<b>Mean</b>	<b>183.04</b>	<b>98.10</b>	<b>4.937</b>	<b>28.56</b>	<b>37.65</b>	<b>62.60</b>	<b>88.08</b>	<b>47.86</b>
<b>LSD(&lt;.05)</b>	<b>1.88</b>	<b>6.88</b>	<b>1.146</b>	<b>1.46</b>	<b>1.67</b>	<b>2.74</b>	<b>13.12</b>	<b>0.53</b>
<b>C.V.</b>	<b>0.52</b>	<b>3.81</b>	<b>13.137</b>	<b>2.99</b>	<b>2.89</b>	<b>2.40</b>	<b>8.55</b>	<b>0.68</b>

**Bold** = top performer, **Bolding** denotes equal value to highest or earliest value within a column based on LSD(0.05)

HD = heading date, HT = height, LOD = lodging, YLD = yield, TWT = test weight, ADF = acid detergent fiber, NDF = neutral detergent fiber, DM = dry matter