

Title: Off-station barley variety evaluations in the Western Triangle Area.

Year: 2006

Location: Western Triangle Research Center, Conrad, MT.

Personnel: Gregory D. Kushnak, Ag Research Center, Conrad; and  
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Dryland off-station barley variety trials were grown in Teton County near Choteau, Glacier County near Cut Bank, Toole County near Oilmont, and western Chouteau County in the Knees Area. An irrigated trial was grown at Conrad. These locations represent diverse environments with Teton having deep soil and typically favorable moisture; the Knees with deep soil, intermediate moisture and warmer temperatures; Oilmont with limited moisture, and Cut Bank with a short, cool growing season. The Cut Bank, Knees and Oilmont trials were no-till planted on chem-fallow, while the Choteau location was continuous-crop.

Results: Data for the individual locations are presented in Tables 1-10, and include the 2006 and multi-year averages. Table 11 is a summary of all the Western Triangle area dryland barley tests over the past several years, and is equivalent to 22 tests on each variety.

Moisture conditions were exceptionally favorable for dryland yield and malt quality traits at Conrad, Cut Bank and Knees in 2006, while the Choteau and Oilmont locations experienced low-moisture conditions. The irrigated trial at Conrad sustained substantial lodging due to a severe storm during irrigation, resulting in reduced test weight and percent plump.

Averaged across all dryland locations over the past several years, the feed barley 'Haxby' had the highest yield and test weight. The 2-row malt varieties 'Conrad', 'Craft' and 'Hockett' had above-average yield, test weight and percent plump. Hockett (MT910189) and Craft (MT970116) averaged substantially higher dryland yield, test weight, and plump than 'Metcalfe' and 'Harrington', and were 2 to 4 days earlier to head. Malt status of Hockett and Craft is pending. If approved, the two lines would be intended for use in dryland malt barley production.

Future Plans: Variety trials will be repeated in 2007 in similar environments.

Table 1. 2006 **Barley** variety trial, Choteau.

| Variety    | Spike | Yield<br>bu/a | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
|------------|-------|---------------|------------------|------------|-----------|--------------|---------------|
| Craft      | 2     | 64.2          | 49.5             | 53         | 14        | 14.8         | 33            |
| Haxby      | 2     | 63.0          | 51.1             | 34         | 29        | 15.6         | 29            |
| Hockett    | 2     | 57.1          | 48.3             | 41         | 30        | 15.4         | 31            |
| Xena       | 2     | 56.9          | 46.4             | 29         | 38        | 15.0         | 28            |
| Kendall    | 2     | 56.4          | 46.2             | 47         | 26        | 17.1         | 29            |
| Boulder    | 2     | 54.5          | 46.6             | 22         | 50        | 17.6         | 25            |
| Eslick     | 2     | 54.1          | 46.8             | 15         | 49        | 16.5         | 26            |
| Conrad     | 2     | 52.6          | 45.8             | 30         | 39        | 16.1         | 29            |
| Drummond   | 6     | 52.4          | 42.0             | 16         | 60        | 15.8         | 33            |
| MT970229   | 2     | 52.3          | 46.4             | 23         | 40        | 17.5         | 26            |
| Legacy     | 6     | 51.2          | 44.5             | 20         | 46        | 15.6         | 32            |
| Harrington | 2     | 49.6          | 45.9             | 31         | 33        | 15.9         | 29            |
| Tradition  | 6     | 49.4          | 43.1             | 13         | 59        | 16.2         | 32            |
| Metcalfe   | 2     | 48.7          | 47.1             | 37         | 27        | 16.8         | 30            |
| Hays       | 2     | 47.1          | 44.2             | 24         | 37        | 15.9         | 28            |
| Copeland   | 2     | 44.6          | 45.6             | 44         | 21        | 16.0         | 32            |
| Merit      | 2     | 43.6          | 42.8             | 24         | 48        | 16.8         | 28            |
| Stellar    | 6     | 41.8          | 41.9             | 24         | 46        | 15.3         | 32            |
| Robust     | 6     | 39.3          | 42.8             | 18         | 52        | 15.7         | 35            |
| Geraldine  | 2     | 37.9          | 46.2             | 15         | 58        | 17.5         | 26            |

mean 50.8 45.7 28.0 40.1 16.1 29.7

LSD (.05) = 7.0 bu

C.V. = 4.9

Cooperator & Location: Roy Inbody, east of Choteau, MT.

Planted April 20, 2006 on recrop. Harvested July 31, 2006.

Fertilizer, actual: 100-52-0

Conducted by MSU Western Triangle Ag Research Center.

Table 2. Four-year averages, **Barley** varieties, Choteau area, 2003 - 06.

| Variety           | Spike | 4-Year Average |                  |            |           |              |               |
|-------------------|-------|----------------|------------------|------------|-----------|--------------|---------------|
|                   |       | Yield<br>bu/a  | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
| Haxby MSU         | 2     | 82.5           | 51.5             | 47         | 19        | 16.3         | 36            |
| Hockett 910189    | 2     | 81.6           | 49.6             | 55         | 16        | 16.2         | 36            |
| Craft 970116      | 2     | 79.9           | 49.8             | 59         | 14        | 16.6         | 39            |
| Boulder WestBred  | 2     | 79.9           | 48.7             | 47         | 27        | 17.6         | 32            |
| MT970229          | 2     | 79.4           | 48.8             | 57         | 18        | 17.0         | 34            |
| Xena Westbred     | 2     | 76.4           | 46.3             | 38         | 25        | 16.8         | 34            |
| Tradition BuschAg | 6     | 75.5           | 43.8             | 24         | 38        | 17.5         | 38            |
| Drummond          | 6     | 74.6           | 43.1             | 21         | 43        | 16.7         | 40            |
| Eslick MSU        | 2     | 74.3           | 47.1             | 40         | 22        | 16.7         | 34            |
| Conrad BuschAg    | 2     | 74.2           | 46.4             | 41         | 26        | 17.5         | 34            |
| Kendall           | 2     | 73.7           | 46.2             | 51         | 21        | 18.1         | 35            |
| Hays forage       | 2     | 73.1           | 42.5             | 28         | 35        | 16.7         | 34            |
| Baronesse         | 2     | 68.7           | 45.2             | 28         | 34        | 17.5         | 32            |
| Harrington        | 2     | 67.9           | 44.8             | 31         | 30        | 17.4         | 36            |
| Metcalfe          | 2     | 67.8           | 45.8             | 39         | 26        | 17.8         | 37            |
| Geraldine 960101  | 2     | 66.7           | 45.6             | 22         | 44        | 17.6         | 34            |
| Copeland          | 2     | 65.4           | 45.3             | 37         | 24        | 17.6         | 36            |
| Robust            | 6     | 64.9           | 43.2             | 28         | 36        | 16.4         | 42            |
| Merit BuschAg     | 2     | 64.5           | 43.6             | 33         | 34        | 17.6         | 35            |
| Legacy BuschAg    | 6     | 62.2           | 43.5             | 21         | 43        | 16.9         | 39            |
| Mean              |       | 73.2           | 46.3             | 38.0       | 28.0      | 17.1         | 35.6          |

Cooperator & Location: Roy and Scot Inbody, east of Choteau, MT.  
 Conducted by MSU Western Triangle Agr Research Center.

Table 3. 2006 **Barley** variety trial, Cut Bank.

| Variety          | Spike | Yield<br>bu/a | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
|------------------|-------|---------------|------------------|------------|-----------|--------------|---------------|
| Legacy           | 6     | 111.1         | 49.6             | 91         | 2.6       | 13.1         | 37            |
| Copeland         | 2     | 107.8         | 50.9             | 94         | 1.6       | 11.8         | 36            |
| Harrington       | 2     | 107.0         | 51.0             | 92         | 2.4       | 12.1         | 35            |
| Eslick           | 2     | 106.9         | 53.5             | 92         | 3.0       | 12.2         | 34            |
| Xena             | 2     | 105.7         | 52.6             | 92         | 2.9       | 12.5         | 33            |
| Stellar          | 6     | 105.6         | 51.3             | 96         | 1.1       | 12.4         | 36            |
| Geraldine 960101 | 2     | 105.0         | 53.2             | 92         | 3.0       | 12.0         | 33            |
| Tradition        | 6     | 104.6         | 51.1             | 95         | 0.9       | 12.7         | 37            |
| Drummond         | 6     | 102.6         | 50.1             | 94         | 1.2       | 12.7         | 37            |
| Metcalfe         | 2     | 101.1         | 52.8             | 92         | 2.5       | 13.2         | 34            |
| MT970229         | 2     | 100.9         | 53.4             | 93         | 2.2       | 12.9         | 33            |
| Robust           | 6     | 100.2         | 50.8             | 94         | 1.0       | 13.2         | 38            |
| Conrad           | 2     | 99.8          | 51.2             | 94         | 1.9       | 13.4         | 34            |
| Hays forage      | 2     | 98.9          | 48.6             | 80         | 11.0      | 12.8         | 32            |
| Hockett 910189   | 2     | 98.2          | 53.8             | 93         | 2.5       | 12.7         | 33            |
| Boulder          | 2     | 98.2          | 53.6             | 92         | 3.6       | 13.3         | 34            |
| Craft 970116     | 2     | 96.0          | 52.9             | 94         | 2.0       | 13.1         | 36            |
| Kendall          | 2     | 95.6          | 52.4             | 93         | 2.4       | 13.2         | 35            |
| Haxby            | 2     | 93.9          | 54.6             | 92         | 3.0       | 12.8         | 34            |
| Merit            | 2     | 93.7          | 49.7             | 92         | 2.5       | 12.8         | 33            |
| mean             |       | 101.6         | 51.9             | 92.4       | 2.7       | 12.8         | 34.7          |
| LSD (.05) =      |       | 5.3 bu        |                  |            |           |              |               |
| C.V. =           |       | 8.3%          |                  |            |           |              |               |

Cooperator & Location: Kevin Bradley, north of Cut Bank, MT.

Planted April 18, 2006 on chem-fallow. Harvested Aug 10, 2006.

Fertilizer, actual: 81-52-0

Conducted by MSU Western Triangle Ag Research Center.

Table 4. Four-year averages, **Barley** varieties, Cut Bank area, 2003 – 2006.

| Variety           | Spike | 4-Year Average |                  |            |           |              |               |
|-------------------|-------|----------------|------------------|------------|-----------|--------------|---------------|
|                   |       | Yield<br>bu/a  | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
| Eslick MSU        | 2     | 70.8           | 49.9             | 72         | 15        | 11.0         | 31            |
| Hockett 910189    | 2     | 70.5           | 51.2             | 77         | 8         | 11.4         | 30            |
| MT970229          | 2     | 69.2           | 51.9             | 85         | 5         | 11.3         | 30            |
| Baronesse         | 2     | 69.0           | 49.3             | 71         | 17        | 11.6         | 30            |
| Haxby MSU         | 2     | 69.0           | 52.3             | 71         | 13        | 11.1         | 32            |
| Legacy BuschAg    | 6     | 68.9           | 47.6             | 74         | 10        | 11.8         | 35            |
| Xena WestBred     | 2     | 68.9           | 50.1             | 71         | 13        | 11.4         | 31            |
| Copeland          | 2     | 68.9           | 48.3             | 77         | 7         | 11.1         | 32            |
| Metcalfe          | 2     | 68.9           | 50.2             | 76         | 10        | 11.4         | 32            |
| Boulder WestBred  | 2     | 68.8           | 52.1             | 76         | 13        | 11.1         | 31            |
| Hays forage       | 2     | 68.7           | 45.3             | 68         | 16        | 11.5         | 30            |
| Tradition BuschAg | 6     | 68.7           | 48.2             | 76         | 7         | 11.6         | 34            |
| Craft 970116      | 2     | 68.0           | 51.2             | 81         | 8         | 11.6         | 34            |
| Geraldine 960101  | 2     | 67.9           | 50.1             | 71         | 15        | 11.0         | 30            |
| Conrad BuschAg    | 2     | 67.9           | 49.3             | 78         | 7         | 11.8         | 31            |
| Drummond          | 6     | 67.7           | 48.0             | 76         | 9         | 11.8         | 36            |
| Robust            | 6     | 67.5           | 48.7             | 76         | 7         | 12.4         | 36            |
| Harrington        | 2     | 67.2           | 49.0             | 76         | 11        | 11.2         | 31            |
| Merit BuschAg     | 2     | 65.1           | 47.6             | 76         | 10        | 11.5         | 31            |
| Kendall           | 2     | 65.0           | 49.5             | 76         | 8         | 11.4         | 31            |
| Mean              |       | 68.3           | 49.6             | 75.0       | 12.1      | 11.4         | 31.6          |

Cooperator & Location: Kevin Bradley, north of Cut Bank, MT.  
 Conducted by MSU Western Triangle Agr Research Center.

Table 5. 2006 **Barley** variety trial, Oilmont.

| Variety          | Spike | Yield<br>bu/a | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
|------------------|-------|---------------|------------------|------------|-----------|--------------|---------------|
| Haxby            | 2     | 69.6          | 46.6             | 28         | 35        | 15.8         | 36            |
| Tradition        | 6     | 62.4          | 41.1             | 20         | 55        | 15.1         | 41            |
| MT970229         | 2     | 61.7          | 45.2             | 27         | 39        | 16.1         | 33            |
| Kendall          | 2     | 59.6          | 40.8             | 24         | 46        | 16.6         | 38            |
| Craft 970116     | 2     | 58.9          | 43.8             | 22         | 49        | 15.1         | 39            |
| Xena             | 2     | 58.1          | 43.1             | 18         | 50        | 13.9         | 34            |
| Hockett 910189   | 2     | 56.5          | 41.2             | 17         | 56        | 15.2         | 36            |
| Stellar          | 6     | 55.7          | 38.8             | 22         | 53        | 14.3         | 35            |
| Harrington       | 2     | 54.6          | 40.0             | 17         | 53        | 15.6         | 34            |
| Conrad           | 2     | 53.5          | 42.8             | 26         | 42        | 15.5         | 34            |
| Drummond         | 6     | 53.1          | 39.6             | 16         | 63        | 14.8         | 38            |
| Metcalf          | 2     | 50.7          | 41.5             | 18         | 54        | 16.3         | 36            |
| Boulder          | 2     | 50.7          | 46.0             | 34         | 32        | 16.0         | 32            |
| Eslick           | 2     | 48.5          | 42.0             | 17         | 57        | 14.6         | 34            |
| Robust           | 6     | 46.8          | 40.4             | 23         | 53        | 15.0         | 39            |
| Hays             | 2     | 46.5          | 39.6             | 7          | 77        | 16.6         | 31            |
| Copeland         | 2     | 44.6          | 40.8             | 17         | 58        | 16.3         | 38            |
| Legacy           | 6     | 42.6          | 38.0             | 13         | 65        | 15.1         | 35            |
| Merit            | 2     | 41.5          | 38.2             | 13         | 61        | 15.9         | 36            |
| Geraldine 960101 | 2     | 34.0          | 41.1             | 12         | 72        | 16.8         | 33            |
|                  |       | 52.5          | 41.5             | 19.6       | 53.5      | 15.5         | 35.6          |

LSD (.05) =

5.3 bu

C.V. =

8.3%

Cooperator & Location: Terry Alme, east of Oilmont, MT.

Planted April 17, 2006 on chem-fallow. Harvested July 28, 2006.

Fertilizer, actual: 71-52-0

Conducted by MSU Western Triangle Ag Research Center.

Table 6. Two-year averages, **Barley** varieties, Oilmont, 2003 & 2006.

| Variety          | Spike | 2-Year Average |                  |            |           |              |               |
|------------------|-------|----------------|------------------|------------|-----------|--------------|---------------|
|                  |       | Yield<br>bu/a  | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
| Haxby MSU        | 2     | 56.0           | 45.4             | 21         | 38        | 17.1         | 31            |
| MT970229         | 2     | 54.0           | 45.6             | 18         | 45        | 17.8         | 30            |
| Craft 970116     | 2     | 51.2           | 44.7             | 18         | 49        | 16.7         | 34            |
| Baronesse        | 2     | 50.3           | 42.8             | 8          | 67        | 17.3         | 29            |
| Xena WestBred    | 2     | 44.9           | 44.0             | 15         | 49        | 15.7         | 30            |
| Eslick MSU       | 2     | 44.5           | 42.6             | 10         | 64        | 16.4         | 29            |
| Metcalf          | 2     | 42.3           | 42.4             | 20         | 43        | 17.2         | 31            |
| Harrington       | 2     | 41.7           | 41.7             | 20         | 44        | 16.8         | 30            |
| Hays forage      | 2     | 39.3           | 40.3             | 7          | 66        | 17.0         | 27            |
| Geraldine 960101 | 2     | 31.2           | 41.5             | 8          | 71        | 18.0         | 28            |
| mean             |       | 45.6           | 43.3             | 14.3       | 53.3      | 17.0         | 29.7          |

Cooperator & Location: Terry Alme, east of Oilmont, MT.  
 Conducted by MSU Western Triangle Agr Research Center.

Table 7. 2006 **Barley** variety trial, Knees area MT.

| Variety          | Spike | Yield<br>bu/a | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
|------------------|-------|---------------|------------------|------------|-----------|--------------|---------------|
| Hockett 910189   | 2     | 85.5          | 52.9             | 93         | 1.6       | 11.3         | 31            |
| Legacy           | 6     | 85.3          | 49.8             | 59         | 5.6       | 10.2         | 38            |
| Eslick           | 2     | 84.6          | 51.9             | 86         | 1.4       | 10.2         | 32            |
| Metcalfe         | 2     | 83.6          | 52.5             | 90         | 2.1       | 11.6         | 35            |
| MT970229         | 2     | 83.1          | 53.5             | 94         | 0.9       | 11.7         | 30            |
| Haxby            | 2     | 82.8          | 55.2             | 89         | 1.4       | 10.1         | 32            |
| Tradition        | 6     | 80.4          | 51.3             | 81         | 1.7       | 11.1         | 33            |
| Boulder          | 2     | 79.9          | 54.3             | 93         | 1.3       | 11.9         | 32            |
| Conrad           | 2     | 79.9          | 51.1             | 93         | 1.6       | 11.1         | 29            |
| Stellar          | 6     | 79.3          | 50.4             | 86         | 2.0       | 10.8         | 31            |
| Craft 970116     | 2     | 77.8          | 53.3             | 95         | 0.8       | 11.1         | 37            |
| Merit            | 2     | 75.9          | 47.6             | 77         | 5.5       | 12.4         | 31            |
| Drummond         | 6     | 75.8          | 50.6             | 80         | 2.7       | 11.7         | 38            |
| Copeland         | 2     | 75.5          | 49.9             | 93         | 1.3       | 10.9         | 32            |
| Geraldine 960101 | 2     | 75.3          | 52.0             | 70         | 4.8       | 10.9         | 30            |
| Harrington       | 2     | 74.0          | 50.3             | 91         | 1.6       | 11.0         | 29            |
| Hays forage      | 2     | 71.4          | 51.0             | 80         | 5.3       | 10.7         | 31            |
| Xena             | 2     | 71.1          | 51.2             | 85         | 1.9       | 10.0         | 28            |
| Robust           | 6     | 70.9          | 50.4             | 73         | 3.9       | 11.4         | 37            |
| Kendall          | 2     | 69.1          | 51.0             | 90         | 2.0       | 11.5         | 31            |
|                  |       | 78.1          | 51.5             | 84.9       | 2.5       | 11.1         | 32.4          |

LSD (.05) =

12.6 bu

C.V. =

10.8

Cooperator & Location: Dan Picard, western Chouteau county.

Planted April 21, 2006 on chem-fallow. Harvested July 27, 2006.

Fertilizer, actual: 11-52-0

Conducted by MSU Western Triangle Ag Research Center.

Table 8. Five-year averages, **Barley** varieties, Knees area, 2002 - 06.

| Variety           | Spike | 5-Year Average |                  |            |           |              |               |
|-------------------|-------|----------------|------------------|------------|-----------|--------------|---------------|
|                   |       | Yield<br>bu/a  | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. |
| Boulder WestBred  | 2     | 72.0           | 50.3             | 64         | 16        | 14.8         | 32            |
| Eslick MSU        | 2     | 71.6           | 48.3             | 58         | 14        | 13.4         | 31            |
| MT970229          | 2     | 70.8           | 49.5             | 79         | 6         | 14.5         | 31            |
| Haxby MSU         | 2     | 70.3           | 52.6             | 67         | 9         | 13.2         | 32            |
| Hockett 910189    | 2     | 69.4           | 50.3             | 76         | 6         | 13.8         | 31            |
| Metcalfe          | 2     | 68.9           | 48.3             | 63         | 13        | 14.5         | 33            |
| Conrad BuschAg    | 2     | 68.0           | 48.7             | 69         | 10        | 13.7         | 29            |
| Craft 970116      | 2     | 67.2           | 50.5             | 76         | 8         | 13.7         | 34            |
| Merit BuschAg     | 2     | 67.2           | 45.2             | 56         | 20        | 14.8         | 31            |
| Xena WestBred     | 2     | 66.7           | 47.8             | 60         | 15        | 13.2         | 30            |
| Baronesse         | 2     | 66.7           | 47.4             | 52         | 22        | 14.4         | 31            |
| Hays forage       | 2     | 66.2           | 46.1             | 52         | 21        | 13.9         | 30            |
| Copeland          | 2     | 66.1           | 46.7             | 59         | 20        | 14.4         | 31            |
| Legacy BuschAg    | 6     | 65.8           | 46.1             | 45         | 19        | 13.0         | 33            |
| Drummond          | 6     | 64.4           | 47.8             | 60         | 13        | 14.0         | 33            |
| Harrington        | 2     | 63.6           | 46.9             | 66         | 13        | 14.2         | 31            |
| Geraldine 960101  | 2     | 63.1           | 47.7             | 49         | 28        | 14.2         | 29            |
| Kendall           | 2     | 61.8           | 47.7             | 68         | 11        | 14.7         | 31            |
| Tradition BuschAg | 6     | 61.3           | 47.7             | 58         | 12        | 14.0         | 30            |
| Robust            | 6     | 57.3           | 47.2             | 62         | 9         | 14.0         | 32            |
| Mean              |       | 66.8           | 48.3             | 62.2       | 14.5      | 14.0         | 31.1          |

Cooperator & Location: Dan Picard, Knees area, western Chouteau Co.  
 Conducted by MSU Western Triangle Agr Research Center.

Table 9. **Irrigated Malt Barley** variety trial, Conrad 2006.

| Variety          | Spike | Yield<br>bu/a | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Head<br>date | Height<br>in. |
|------------------|-------|---------------|------------------|------------|-----------|--------------|--------------|---------------|
| MT970229         | 2     | 129.1         | 54.3             | 91         | 2.6       |              | 176          | 30            |
| Boulder          | 2     | 122.1         | 56.0             | 95         | 1.9       |              | 175          | 30            |
| Craft MT970116   | 2     | 116.8         | 54.3             | 90         | 3.5       |              | 172          | 36            |
| Haxby            | 2     | 114.1         | 54.4             | 93         | 1.9       |              | 174          | 31            |
| Merit            | 2     | 113.8         | 51.7             | 90         | 3.2       |              | 178          | 35            |
| Geraldine 960101 | 2     | 111.8         | 54.2             | 85         | 4.2       |              | 179          | 31            |
| Stellar          | 6     | 110.1         | 52.6             | 91         | 2.7       |              | 173          | 31            |
| Calgary          | 2     | 107.7         | 52.6             | 81         | 6.2       |              | 179          | 29            |
| Eslick           | 2     | 106.0         | 53.4             | 84         | 5.0       |              | 177          | 31            |
| Conrad           | 2     | 102.8         | 52.6             | 89         | 3.3       |              | 176          | 36            |
| Copeland         | 2     | 100.6         | 50.8             | 79         | 6.3       |              | 179          | 38            |
| Legacy           | 6     | 100.3         | 49.9             | 59         | 13.1      |              | 176          | 34            |
| Tradition        | 6     | 100.0         | 53.3             | 90         | 1.4       |              | 173          | 31            |
| Xena             | 2     | 95.5          | 52.6             | 78         | 6.1       |              | 178          | 30            |
| Metcalfe         | 2     | 95.0          | 53.4             | 88         | 3.9       |              | 175          | 34            |
| Kendall          | 2     | 92.2          | 52.6             | 83         | 5.6       |              | 177          | 38            |
| Hockett MT910189 | 2     | 91.1          | 53.8             | 90         | 3.3       |              | 174          | 35            |
| Drummond         | 6     | 89.9          | 51.4             | 79         | 5.3       |              | 172          | 36            |
| Harrington       | 2     | 88.5          | 48.4             | 77         | 7.5       |              | 177          | 36            |
| Robust           | 6     | 80.0          | 53.1             | 79         | 5.4       |              | 174          | 34            |
| Morex            | 6     | 67.7          | 51.5             | 72         | 6.6       |              | 173          | 35            |
| Hays forage      | 2     | 67.1          | 49.7             | 65         | 14.8      |              | 179          | 29            |
| average          |       | 100.1         | 52.6             | 83.1       | 5.2       |              | 175.7        | 33.2          |

LSD (.05) = 16.9 bu.

C.V. 1&2 = 10.1 & 5.8

Planted April 19, 2006 on fallow. Harvested Aug 1, 2006.

Fertilizer, actual: 71-52-0

Location: MSU Western Triangle Ag Research Center, Conrad, MT.

Table 10. Six-year averages, **irrigated Malt Barley** varieties, Conrad 2001 - 06.

| Variety           | Spike | 6-Year Average |                  |            |           |              |              |               |
|-------------------|-------|----------------|------------------|------------|-----------|--------------|--------------|---------------|
|                   |       | Yield<br>bu/a  | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Head<br>date | Height<br>in. |
| Geraldine 960101  | 2     | 107.7          | 52.5             | 91         | 2.7       |              | 183          | 29            |
| Haxby MSU         | 2     | 107.0          | 54.4             | 96         | 1.5       |              | 180          | 32            |
| Baronesse         | 2     | 104.4          | 52.9             | 93         | 2.7       |              | 181          | 29            |
| Craft 970116      | 2     | 104.4          | 53.6             | 95         | 1.9       |              | 179          | 35            |
| Tradition BuschAg | 6     | 102.1          | 51.0             | 94         | 1.2       |              | 179          | 32            |
| Merit BuschAg     | 2     | 101.8          | 50.2             | 92         | 2.7       |              | 183          | 31            |
| Conrad BuschAg    | 2     | 101.7          | 52.2             | 95         | 1.9       |              | 181          | 32            |
| Coors 37          | 2     | 100.9          | 51.7             | 92         | 2.3       |              | 182          | 25            |
| Copeland          | 2     | 99.3           | 51.1             | 91         | 2.7       |              | 183          | 35            |
| Metcalf           | 2     | 97.6           | 52.3             | 93         | 2.1       |              | 181          | 32            |
| Kendall           | 2     | 96.0           | 52.1             | 92         | 2.7       |              | 182          | 32            |
| Hockett 910189    | 2     | 96.0           | 53.0             | 94         | 2.1       |              | 179          | 31            |
| Drummond          | 6     | 95.4           | 50.7             | 91         | 2.1       |              | 179          | 36            |
| Legacy BuschAg    | 6     | 93.8           | 49.6             | 82         | 4.7       |              | 180          | 35            |
| Harrington        | 2     | 89.9           | 49.9             | 86         | 4.0       |              | 182          | 31            |
| Robust            | 6     | 84.6           | 50.9             | 87         | 3.3       |              | 179          | 35            |
| Morex             | 6     | 74.5           | 49.7             | 81         | 4.8       |              | 179          | 37            |
| Mean              |       | 97.3           | 51.7             | 90.6       | 2.7       |              | 180.5        | 32.2          |

Location: MSU Western Triangle Agr Research Center, Conrad, MT.

Table 11. Multi-Year x Location Averages - **Barley** varieties, Western Triangle Area.

| Variety           | Spike | 22-Year x Location Dryland Average |                  |            |           |              |               |              |
|-------------------|-------|------------------------------------|------------------|------------|-----------|--------------|---------------|--------------|
|                   |       | Yield<br>bu/a                      | Test Wt<br>lb/bu | Plump<br>% | Thin<br>% | Protein<br>% | Height<br>in. | Head<br>date |
| Haxby MSU         | 2     | 71.3                               | 51.1             | 56         | 17        | 14.1         | 32            | 180          |
| MT970229          | 2     | 70.4                               | 49.6             | 65         | 15        | 14.8         | 31            | 182          |
| Hockett 910189    | 2     | 69.8                               | 49.1             | 61         | 18        | 14.3         | 31            | 178          |
| Boulder Westbred  | 2     | 68.7                               | 50.1             | 59         | 19        | 15.0         | 30            | 181          |
| Craft 970116      | 2     | 68.4                               | 49.8             | 64         | 16        | 14.3         | 34            | 180          |
| Eslick MSU        | 2     | 67.6                               | 47.8             | 51         | 25        | 14.1         | 31            | 182          |
| Baronesse         | 2     | 67.1                               | 47.0             | 48         | 29        | 14.8         | 30            | 182          |
| Conrad BuschAg    | 2     | 66.8                               | 47.7             | 57         | 18        | 14.7         | 30            | 182          |
| Xena Westbred     | 2     | 66.2                               | 47.8             | 51         | 22        | 14.0         | 31            | 182          |
| Drummond          | 6     | 65.3                               | 45.6             | 47         | 27        | 14.4         | 35            | 180          |
| Tradition BuschAg | 6     | 64.9                               | 46.2             | 48         | 25        | 14.6         | 34            | 180          |
| Kendall           | 2     | 64.7                               | 47.1             | 59         | 18        | 15.1         | 32            | 183          |
| Metcalfe          | 2     | 64.4                               | 47.4             | 54         | 20        | 14.9         | 33            | 181          |
| Hays forage MSU   | 2     | 64.2                               | 44.2             | 43         | 30        | 14.4         | 30            | 183          |
| Harrington        | 2     | 62.7                               | 46.4             | 54         | 21        | 14.6         | 31            | 182          |
| Copeland          | 2     | 61.9                               | 46.3             | 52         | 23        | 14.8         | 33            | 183          |
| Geraldine 960101  | 2     | 60.3                               | 47.1             | 41         | 34        | 14.8         | 30            | 183          |
| Legacy BuschAg    | 6     | 60.1                               | 44.7             | 42         | 29        | 14.3         | 34            | 180          |
| Merit BuschAg     | 2     | 60.1                               | 44.7             | 48         | 26        | 14.9         | 31            | 183          |
| Robust            | 6     | 59.6                               | 45.8             | 51         | 22        | 14.5         | 35            | 180          |
| Mean              |       | 65.2                               | 47.3             | 52.6       | 22.8      | 14.6         | 31.9          | 181.4        |

Conrad dryland 7-yr + Choteau 4-yr + Cut Bank 4-yr + Oilmont 2yr + Knees 5-yr.

Years included thru 2006. Comparable average calculations.

Head date, Conrad only.

Conducted by MSU Western Triangle Agr Research Center.