

Project Title: Evaluation of winter wheat cultivar performance under continuous crop, crop-crop-fallow and crop-fallow systems in central Montana

Project Leader: D.M. Wichman –CARC Research Agronomist, Moccasin, Montana.

Project Personnel:

| | |
|-----------------|--|
| P.L. Bruckner | MAES Winter Wheat Breeder, Bozeman, MT |
| J.E. Berg | MAES Res. Assoc. WW Breeder, Bozeman, MT |
| J. Vavrovsky | CARC Res. Spec., Moccasin, MT-retired |
| J.R. Olson | CARC Res. Assoc. Moccasin, MT |
| S.J. Dahlhausen | CARC Seasonal Field Tech. Moccasin, MT |

Objectives:

Evaluate relative performance winter wheat cultivars and development lines in central Montana crop environments.

Results:

2013 Winter wheat yields in central Montana were generally good. Some of the early seeded winter wheat in the Moccasin area experienced above typical dryland root rot and crown rot, which reduced test weights to as low as 53.0 lbs per bushel. There was a high incidence of hail damage, with one CARC test site experiencing significant hail damage. The five (5) central Montana winter wheat on-farm cultivar trials were conducted near Moccasin, Denton, Geraldine, Winifred and Belt. The Moccasin and Denton, NTCC locations, produced above average mean yields 42.1 & 43.0 bu/a, respectively (Tables 1 & 2). The Geraldine location boasted the highest mean yield at 86.4 bu/a (Table 3). The crop-fallow site, Winifred, had a near average mean yield at 59.8 bu/a (Table 4). The Belt location was impacted by hail and produced a mean yield of 27.2 bu/a (Table 5). a different cultivar/line that produced the highest grain yield at each site. Consistent high yielders were Overland, Yellowstone, MT0978 and MTS1024.

Jagalene continues to rank at the top for test weight, producing the heaviest test weights at 3 of the 5 locations. Jagalene was the only cultivar to have a combined multi-year mean higher than 60 lb/bu for all five locations collectively (60.9 lb/bu). Norris and Decade also have high multi-year test weights. Genou and Rampart continued to have high protein levels and had the 1st and 2nd highest protein(%) at 3 of the 5 sites (Tables 1-5).

Summary:

Multi-year summaries presenting the relative yields, test weights, and protein content of more popular cultivars and promising advanced lines are presented in tables 6 to 16. Yellowstone is used as the standard and each cultivar is compared to Yellowstone's performance for the same years at each location. Each cultivar has not been in the trial for equal number of years. Yellowstone is a consistent high yielder at each location, has good disease resistance, good stem strength, and has moderate test weight and protein content.

Funding Summary:

Expenditure information to be provided by OSP. This project received no other grant support.

MWBC FY2011 Grant Submission Plans:

It is planned to submit this project for funding consideration in the next fiscal year.

Table 1 2013 Winter wheat cultivar performance no-till CC near Moccasin.
 Exp 133870 Central Agricultural Research Center. Moccasin, Montana.

| Cultivar/Line | Origin/Pedigree | Entry | Grain Yield bu/ac RCB | Test weight lb/bu RCB | Heading date Julian | Plant height in RCB | Protein Content % |
|---------------------|------------------------------|-----------|-----------------------------|-----------------------------|------------------------|---------------------------|----------------------|
| SY Clearstone 2CL | Montana/Syngenta, 2012 | 18 | 52.2** | 56.4 | 175.0 | | 14.6 |
| MTS1024 | MT02113*4/MTS0359 | 22 | 52.2** | 54.6 | 172.0 | | 15.2 |
| MT1090 | Reeder/6*Yellowstone | 24 | 52.1* | 54.6 | 174.0 | | 14.6 |
| Overland | Nebraska, 2007 | 12 | 51.3* | 57.3 | 171.7 | | 14.4 |
| Jagalene | AgriPro, 2002 | 9 | 48.4* | 56.2 | 171.3 | | 16.0 |
| MT1078 | MT02113*4/MTS0359 | 23 | 46.4* | 53.5 | 172.7 | | 15.7 |
| Yellowstone | Montana 2005 | 1 | 45.3* | 54.6 | 173.3 | | 16.6 |
| Colter | (MT08172) Montana, 2013 | 19 | 44.5* | 58.4 | 175.7 | | 15.7 |
| MT0978 | MT9982//MTW0072/NW97S151 | 21 | 44.0* | 55.4 | 174.3 | | 16.6 |
| Norris (CL) | Montana/WestBred, 2005 | 8 | 43.5* | 57.7 | 169.7 | | 14.9 |
| Bearpaw | Montana, 2011 | 15 | 43.3* | 56.3 | 173.0 | | 16.2 |
| MTW08168 | MTW0047/2*MT9982 | 20 | 42.8* | 55.5 | 176.0 | | 17.0 |
| Warhorse | (MTS0808) Montana, 2013 | 17 | 42.1* | 55.7 | 173.7 | | 15.2 |
| Judee | Montana, 2011 | 14 | 41.5* | 55.4 | 173.0 | | 16.3 |
| MTCS1202 | 96X17E69/3/MTCL0309/CDC Teal | 7 | 41.2 | 56.7 | 170.7 | | 15.0 |
| Accipiter | Saskatchewan, 2008 | 13 | 40.7 | 55.2 | 172.7 | | 15.6 |
| Decade | Montana/North Dakota, 2010 | 10 | 38.8 | 54.6 | 170.7 | | 16.2 |
| CDC Falcon | Sask/WestBred, 1999 | 3 | 38.6 | 53.5 | 173.7 | | 17.2 |
| Jerry | North Dakota, 2001 | 6 | 36.3 | 54.7 | 172.0 | | 17.0 |
| Genou | Montana, 2004 | 2 | 35.8 | 54.8 | 173.3 | | 17.7 |
| WB-Quake | WestBred, 2011 | 11 | 35.1 | 56.2 | 172.0 | | 15.6 |
| Ledger | WestBred, 2004 | 5 | 33.3 | 56.7 | 173.7 | | 14.5 |
| Rampart | Montana, 1996 | 4 | 31.5 | 57.5 | 175.0 | | 17.3 |
| MTS0832 | 92X73E70/MTW9911 | 16 | 30.2 | 54.6 | 173.7 | | 17.3 |
| Average | | | 42.1 | 55.6 | 173.0 | | 15.9 |
| LSD (0.05) | | | 10.9 | ns | | | |
| C.V. (%) | | | 15.8 | 2.5 | | | |
| P-value (Varieties) | | | 0.0015 | 0.1072 | | | |

** = indicates highest value within a column. * = indicates varieties with values equal to highest

Seeded: 10/16/2012 NTRC WW 133870 no starter fert with seed.
 Post SeedBroadcast 100 lbs 20-20-20-10 NPKS

Table 2 2013 Winter wheat cultivar performance near Denton.
 Exp. 133871 Central Agricultural Research Center. Moccasin, Montana.

| Cultivar/Line | Origin/Pedigree | Entry | Grain Yield bu/ac | Test weight lb/bu | Plant height in | Protein Content % |
|-------------------|----------------------------------|-------|----------------------|----------------------|--------------------|----------------------|
| MT0978 | MT9982//MTW0072/NW97S151 | 21 | 49.6** | 61.2* | 28 | 11.3 |
| Overland | Nebraska, 2007 | 12 | 48.1* | 60.7* | 31 | 10.4 |
| Yellowstone | Montana 2005 | 1 | 47.2* | 60.4* | 30 | 11.7 |
| MTS1024 | MT02113*4/MTS0359 | 22 | 46.8* | 59.4 | 26 | 10.8 |
| CDC Falcon | Sask/WestBred, 1999 | 3 | 45.6* | 58.5 | 26 | 11.4 |
| Jagalene | AgriPro, 2002 | 9 | 45.1* | 61.9** | 29 | 10.6 |
| SY Clearstone 2CL | Montana/Syngenta, 2012 | 18 | 44.5 | 59.6 | 29 | 11.7 |
| Decade | Montana/North Dakota, 2010 | 10 | 44.1 | 59.3 | 29 | 12.0 |
| MT1090 | Reeder/6*Yellowstone | 24 | 44.1 | 59.4 | 28 | 12.0 |
| Accipiter | Saskatchewan, 2008 | 13 | 43.8 | 60.6* | 29 | 11.4 |
| Judee | Montana, 2011 | 14 | 43.1 | 59.3 | 27 | 11.3 |
| MT1078 | MT02113*4/MTS0359 | 23 | 42.8 | 56.8 | 27 | 12.0 |
| Bearpaw | Montana, 2011 | 15 | 41.8 | 59.5 | 28 | 12.6 |
| MTW08168 | MTW0047/2*MT9982 | 20 | 41.8 | 60.2 | 30 | 12.3 |
| Colter | (MT08172) Montana, 2013 | 19 | 41.5 | 59.1 | 28 | 13.2 |
| Warhorse | (MTS0808) Montana, 2013 | 17 | 41.5 | 59.1 | 26 | 12.4 |
| MTS0832 | 92X73E70/MTW9911 | 16 | 41.4 | 60.3 | 30 | 12.2 |
| Ledger | WestBred, 2004 | 5 | 41.3 | 60.3 | 27 | 11.0 |
| Norris (CL) | Montana/WestBred, 2005 | 8 | 40.9 | 59.7 | 31 | 11.8 |
| MTCS1202 | 96X17E69/3/MTCL0309/CDC Teal 11. | 7 | 40.8 | 58.0 | 25 | 11.5 |
| WB-Quake | WestBred, 2011 | 11 | 40.8 | 59.7 | 27 | 11.4 |
| Genou | Montana, 2004 | 2 | 40.5 | 59.8 | 31 | 12.2 |
| Jerry | North Dakota, 2001 | 6 | 40.4 | 58.5 | 30 | 12.8 |
| Rampart | Montana, 1996 | 4 | 35.4 | 59.9 | 31 | 12.8 |
| Average | | | 43.0 | 59.6 | 28.5 | 11.8 |
| LSD (0.05) | | | 4.9 | 1.6 | | |
| C.V. (%) | | | 7.0 | 1.3 | | |
| P-value | | | 0.0005 | 0.0009 | | |

** = indicates highest value within a column

* = indicates varieties with values equal to highest variety

Seeded: October 12, 2012

Soil 10C

Moist Probe depth: 6 inches

Table 3 2013 Winter wheat cultivar performance near Geraldine.
Exp. 133872 Cenral Agricultural Research Center. Moccasin, Montana

| Cultivar/Line | Origin/Pedigree | Entry | Grain Yield | Test weight | Plant height | Protein Content |
|---------------------|--------------------------------|-------|---------------|---------------|--------------|-----------------|
| | | # | bu/ac | lb/bu | in | % |
| MTS1024 | MT02113*4/MTS0359 | 22 | 98.6** | 60.3 | 32 | 9.5 |
| MT1078 | MT02113*4/MTS0359 | 23 | 96.3* | 59.4 | 33 | 9.0 |
| MT0978 | MT9982//MTW0072/NW97S151 | 21 | 95.5* | 61.2 | 34 | 10.5 |
| Yellowstone | Montana 2005 | 1 | 95.0* | 60.9 | 35 | 10.8 |
| MT1090 | Reeder/6*Yellowstone | 24 | 92.4* | 61.1 | 36 | 9.0 |
| Jagalene | AgriPro, 2002 | 9 | 92.2 | 63.1** | 34 | 10.2 |
| Overland | Nebraska, 2007 | 12 | 91.9 | 61.2 | 34 | 9.4 |
| MTW08168 | MTW0047/2*MT9982 | 20 | 90.1 | 62.2* | 38 | 9.4 |
| SY Clearstone 2CL | Montana/Syngenta, 2012 | 18 | 89.0 | 60.7 | 36 | 9.5 |
| Decade | Montana/North Dakota, 2010 | 10 | 88.2 | 61.4 | 35 | 10.2 |
| Colter | (MT08172) Montana, 2013 | 19 | 87.8 | 61.5 | 36 | 9.9 |
| Bearpaw | Montana, 2011 | 15 | 87.2 | 60.9 | 34 | 9.9 |
| CDC Falcon | Sask/WestBred, 1999 | 3 | 86.5 | 60.0 | 32 | 10.6 |
| MTCS1202 | 96X17E69/3/MTCL0309/CDC Teal 1 | 7 | 86.1 | 60.7 | 31 | 10.7 |
| Warhorse | (MTS0808) Montana, 2013 | 17 | 85.8 | 60.6 | 33 | 9.6 |
| Ledger | WestBred, 2004 | 5 | 84.6 | 60.5 | 35 | 10.0 |
| Judee | Montana, 2011 | 14 | 83.3 | 61.6 | 32 | 10.4 |
| Norris (CL) | Montana/WestBred, 2005 | 8 | 83.0 | 62.3* | 37 | 9.8 |
| Accipiter | Saskatchewan, 2008 | 13 | 82.3 | 61.6 | 36 | 9.8 |
| WB-Quake | WestBred, 2011 | 11 | 82.2 | 60.7 | 33 | 9.7 |
| Jerry | North Dakota, 2001 | 6 | 81.3 | 59.2 | 41 | 10.4 |
| MTS0832 | 92X73E70/MTW9911 | 16 | 78.0 | 60.2 | 39 | 10.6 |
| Genou | Montana, 2004 | 2 | 68.4 | 60.7 | 39 | 10.9 |
| Rampart | Montana, 1996 | 4 | 67.6 | 60.3 | 39 | 10.9 |
| Average | | | 86.4 | 60.9 | 35.2 | 10.0 |
| LSD (0.05) | | | 6.4 | 1.0 | | |
| C.V. (%) | | | 4.5 | 0.8 | | |
| P-value (Varieties) | | | <.0001 | <.0001 | | |

** = indicates highest value w ithin a column. * = indicates varieties w ith values equal to highest

Seeded: Sept 20, 2012

Soil: Temp: 18 C

Table 4 2013 Winter wheat cultivar performance near Winifred.
 Exp 133874 Cenral Agricultural Research Center. Moccasin, Montana.

| Cultivar/Line | Origin/Pedigree | Entry | Grain Yield bu/ac | Test Weight lb/bu | Plant Height in | Grain Protein % | Leaning Prevalance % | Angle degree |
|-------------------|---|-------|----------------------|----------------------|--------------------|--------------------|-------------------------|-----------------|
| Decade | Montana/North Dakota, 2010 | 10 | 74.7** | 62.0* | 31 | 9.8 | 100 | 90 |
| MT0978 | MT9982//MTW0072/NW97S151 | 21 | 73.3* | 61.6 | 31 | 9.4 | 100 | 90 |
| MTS1024 | MT02113*4/MTS0359 | 22 | 70.6* | 60.2 | 30 | 10.2 | 90 | 85 |
| MT1078 | MT02113*4/MTS0359 | 23 | 69.9* | 60.7 | 28 | 9.8 | 100 | 90 |
| Overland | Nebraska, 2007 | 12 | 69.4* | 60.9 | 31 | 9.3 | 90 | 70 |
| Jagalene | AgriPro, 2002 | 9 | 67.2* | 62.0* | 31 | 10.5 | 100 | 90 |
| MT1090 | Reeder/6*Yellowstone | 24 | 64.6 | 60.2 | 32 | 9.7 | 100 | 90 |
| Bearpaw | Montana, 2011 | 15 | 63.7 | 61.5 | 29 | 10.7 | 100 | 85 |
| MTW08168 | MTW0047/2*MT9982 | 20 | 63.2 | 62.9** | 36 | 10.3 | 100 | 85 |
| Yellowstone | Montana 2005 | 1 | 61.5 | 59.8 | 32 | 10.3 | 100 | 80 |
| CDC Falcon | Sask/WestBred, 1999 | 3 | 59.3 | 60.7 | 27 | 10.3 | 90 | 90 |
| Judee | Montana, 2011 | 14 | 59.3 | 61.8 | 29 | 9.7 | 100 | 85 |
| MTCS1202 | 96X17E69/3/MTCL0309/CDC Teal | 7 | 57.6 | 60.6 | 29 | 10.2 | 100 | 75 |
| MTS0832 | 92X73E70/MTW9911 | 16 | 56.9 | 61.5 | 34 | 10.0 | 90 | 80 |
| Norris (CL) | Montana/WestBred, 2005 | 8 | 55.7 | 61.5 | 30 | 11.3 | 100 | 90 |
| WB-Quake | WestBred, 2011 | 11 | 55.0 | 61.7 | 29 | 10.0 | 80 | 80 |
| SY Clearstone 2CL | Montana/Syngenta, 2012 | 18 | 54.7 | 60.0 | 33 | 10.0 | 100 | 90 |
| Accipiter | Saskatchewan, 2008 | 13 | 54.0 | 61.5 | 32 | 10.5 | 90 | 90 |
| Jerry | North Dakota, 2001 | 6 | 54.0 | 60.6 | 40 | 10.2 | 100 | 75 |
| Warhorse | (MTS0808) Montana, 2013 | 17 | 52.8 | 60.2 | 30 | 10.2 | 100 | 85 |
| Ledger | WestBred, 2004 | 5 | 51.8 | 61.9* | 28 | 10.4 | 100 | 90 |
| Colter | (MT08172) Montana, 2013 | 19 | 51.6 | 60.0 | 31 | 10.8 | 100 | 90 |
| Rampart | Montana, 1996 | 4 | 46.9 | 62.7* | 32 | 11.5 | 90 | 60 |
| Genou | Montana, 2004 | 2 | 46.6 | 61.8 | 33 | 11.4 | 90 | 50 |
| Average | | | 59.8 | 61.2 | 31.2 | 10.3 | 96.3 | 82.7 |
| LSD (0.05) | ** = indicates highest value w ithin a column | | 8.5 | 1.1 | | | | |
| C.V. (%) | | | 8.6 | 0.8 | | | | |
| P-value | | | >.0001 | <.0001 | | | | |

Seeded: Sept 20, 2012

Soil: Temp: 21 C

Table 5 2013 Winter wheat cultivar performance near Belt.
Exp 133875 Central Agricultural Research Center. Moccasin, Montana

| Cultivar/Line | Origin/Pedigree | Entry | Grain Yield bu/ac | Test Weight lb/bu | Plant Height in | Protein Content % |
|---------------------|------------------------------|-------|----------------------|----------------------|--------------------|----------------------|
| Overland | Nebraska, 2007 | 12 | 39.3** | 56.3 | 28 | 10.4 |
| MT0978 | MT9982//MTW0072/NW97S151 | 21 | 32.5 | 57.8* | 32 | 11.1 |
| Decade | Montana/North Dakota, 2010 | 10 | 31.1 | 54.3 | 31 | 11.4 |
| SY Clearstone 2CL | Montana/Syngenta, 2012 | 18 | 31.1 | 54.5 | 32 | 11.0 |
| Jagalene | AgriPro, 2002 | 9 | 31.0 | 58.3** | 31 | 11.8 |
| Warhorse | (MTS0808) Montana, 2013 | 17 | 31.0 | 55.3 | 27 | 11.5 |
| MT1078 | MT02113*4/MTS0359 | 23 | 30.5 | 54.3 | 28 | 11.6 |
| Bearpaw | Montana, 2011 | 15 | 30.0 | 55.7 | 29 | 11.8 |
| Jerry | North Dakota, 2001 | 6 | 28.8 | 54.6 | 34 | 12.1 |
| MT1090 | Reeder/6*Yellowstone | 24 | 28.3 | 54.2 | 30 | 11.3 |
| MTCS1202 | 96X17E69/3/MTCL0309/CDC Teal | 7 | 27.7 | 55.5 | 29 | 11.8 |
| MTS1024 | MT02113*4/MTS0359 | 22 | 27.0 | 52.6 | 28 | 11.3 |
| Yellowstone | Montana 2005 | 1 | 26.9 | 55.6 | 33 | 12.5 |
| Accipiter | Saskatchewan, 2008 | 13 | 26.4 | 54.0 | 31 | 11.8 |
| Norris (CL) | Montana/WestBred, 2005 | 8 | 26.0 | 56.0 | 34 | 11.5 |
| WB-Quake | WestBred, 2011 | 11 | 25.7 | 52.9 | 29 | 12.2 |
| CDC Falcon | Sask/WestBred, 1999 | 3 | 25.6 | 53.4 | 28 | 13.0 |
| Colter | (MT08172) Montana, 2013 | 19 | 23.6 | 53.4 | 31 | 11.9 |
| Judee | Montana, 2011 | 14 | 23.4 | 55.1 | 32 | 11.6 |
| MTW08168 | MTW0047/2*MT9982 | 20 | 22.8 | 55.6 | 32 | 12.0 |
| MTS0832 | 92X73E70/MTW9911 | 16 | 22.5 | 52.7 | 31 | 13.0 |
| Rampart | Montana, 1996 | 4 | 21.9 | 53.1 | 33 | 13.2 |
| Ledger | WestBred, 2004 | 5 | 20.5 | 55.1 | 30 | 11.2 |
| Genou | Montana, 2004 | 2 | 18.1 | 52.3 | 32 | 12.8 |
| Average | | | 27.2 | 54.7 | 30.6 | 11.8 |
| LSD (0.05) | | | 4.9 | 1.7 | | |
| C.V. (%) | | | 11.0 | 1.5 | | |
| P-value (Varieties) | | | <.0001 | <.0001 | | |

** = indicates highest value within a column. * = indicates varieties with values equal to highest

* Hail Impacted*

Seeded: October 10, 2012 into barley stubble

Table 6 Moccasin multi-year no-till recrop winter wheat cultivar **yield** performance.
 Exp 133870 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (bu/a) | | | | |
| Bearpaw | | | 37.0 | 23.0 | 43.3 | 34.4 | 35.8 |
| CDC Falcon | 28.6 | 52.3 | 42.9 | 25.4 | 38.6 | 37.6 | 41.4 |
| SY Clearstone | | | | 24.9 | 52.2 | 38.6 | 35.0 |
| Colter | | | | 25.1 | 44.5 | 34.8 | 35.0 |
| Decade | | 60.6 | 36.6 | 22.6 | 38.8 | 39.7 | 43.5 |
| Genou | 29.0 | 51.0 | 30.1 | 20.0 | 35.8 | 33.2 | 41.4 |
| Jagalene | 31.7 | 63.6 | 36.2 | 24.6 | 48.4 | 40.9 | 41.4 |
| Jerry | 28.0 | 58.6 | 34.3 | 21.8 | 36.3 | 35.8 | 41.4 |
| Judee | | | 31.5 | 18.5 | 41.5 | 30.5 | 35.8 |
| Ledger | 26.9 | 51.3 | 28.9 | 18.1 | 33.3 | 31.7 | 41.4 |
| Norris(CL) | 31.9 | 54.0 | 36.3 | 20.4 | 43.5 | 37.2 | 41.4 |
| Warhorse | | | 34.7 | 24.3 | 42.1 | 33.7 | 35.8 |
| WB-Quake | | | 32.8 | 19.3 | 35.1 | 29.1 | 35.8 |
| Yellowstone | 33.3 | 66.5 | 37.3 | 24.7 | 45.3 | 41.4 | 41.4 |
| Yearly Mean | 29.9 | 57.2 | 34.9 | 21.7 | 40.5 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 1)

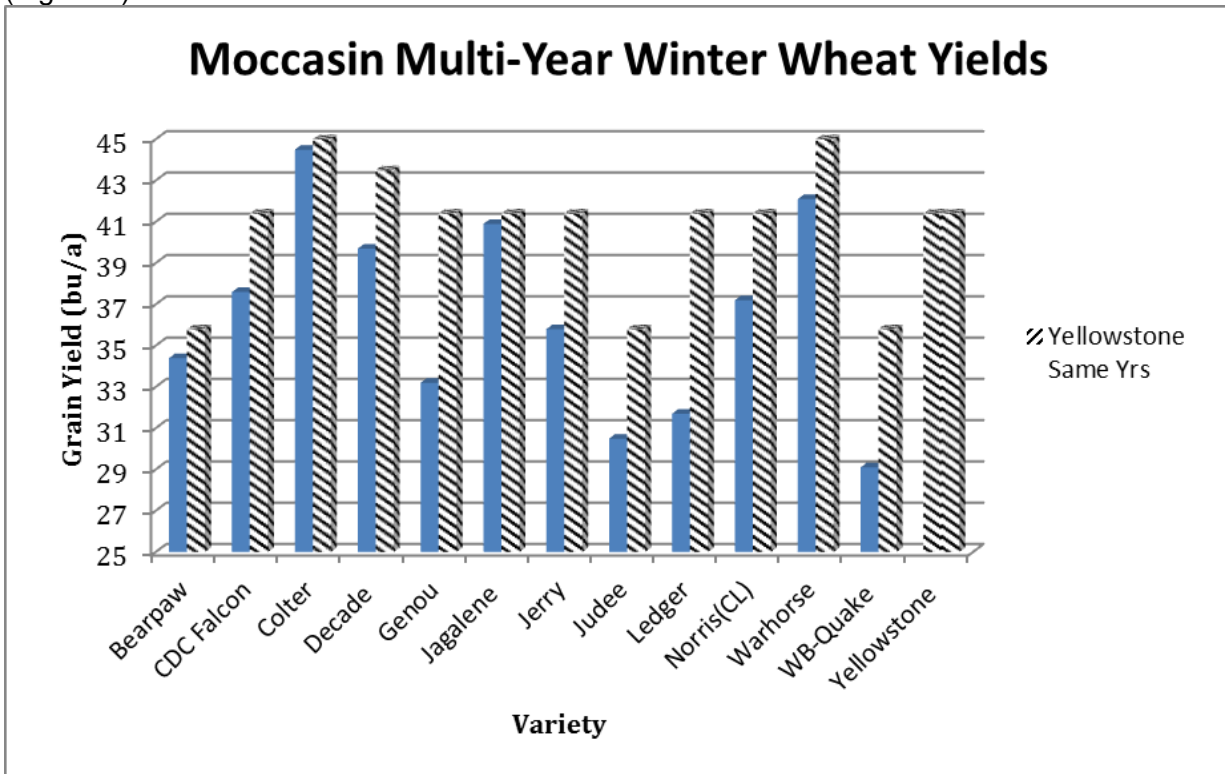


Table 7 Denton multi-year no-till recrop winter wheat cultivar **yield** performance.
Exp 133871 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|---------|-------------|-------------|----------------------|
| | | | (bu/a) | | | | |
| Bearpaw | Not | | 35.9 | No | 41.8 | 38.9 | 40.0 |
| CDC Falcon | harvested | 32.4 | 29.1 | Harvest | 45.6 | 35.7 | 37.1 |
| SY Clearstone | | | | | 44.5 | 44.5 | 47.2 |
| Colter | for grain | | | Due To | 41.5 | 41.5 | 47.2 |
| Decade | yield | 34.1 | 34.3 | Hail | 44.1 | 37.5 | 37.1 |
| Genou | due | 27.1 | 30.1 | | 40.5 | 32.6 | 37.1 |
| Jagalene | to | 31.8 | 37.1 | | 45.1 | 38.0 | 37.1 |
| Jerry | severe | 23.5 | 33.5 | | 40.4 | 32.5 | 37.1 |
| Judee | downy | | 24.7 | | 43.1 | 33.9 | 40.0 |
| Ledger | brome | 33.4 | 29.5 | | 41.3 | 34.7 | 37.1 |
| Norris(CL) | infestation | 26.4 | 35.9 | | 40.9 | 34.4 | 37.1 |
| Warhorse | | | 39.7 | | 41.5 | 40.6 | 40.0 |
| WB-Quake | | | 25.2 | | 40.8 | 33.0 | 40.0 |
| Yellowstone | | 31.4 | 32.8 | | 47.2 | 37.1 | 37.1 |
| Yearly Mean | | 30.0 | 31.6 | | 42.6 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 2)

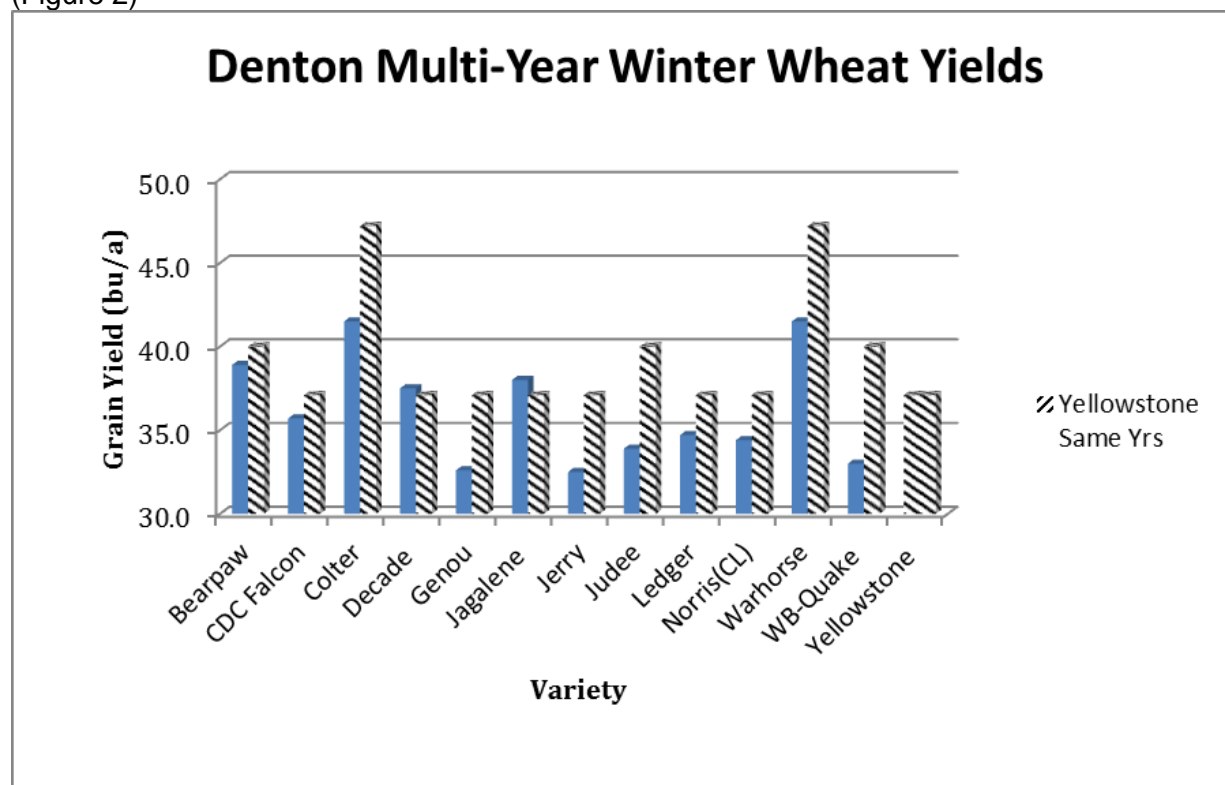


Table 8 Geraldine multi-year no-till C-C-F winter wheat cultivar yield performance.
Exp 133872 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (bu/a) | | | | |
| Bearpaw | | | 71.8 | 50.5 | 87.2 | 69.8 | 77.6 |
| CDC Falcon | 32.7 | 72.8 | 66.9 | 59.2 | 86.5 | 63.6 | 69.6 |
| SY Clearstone | | | | 62.2 | 89.0 | 75.6 | 77.2 |
| Colter | | | | 64.0 | 87.8 | 75.9 | 77.2 |
| Decade | | 74.3 | 74.7 | 58.5 | 88.2 | 73.9 | 78.9 |
| Genou | 34.8 | 54.9 | 62.1 | 43.9 | 68.4 | 52.8 | 69.6 |
| Jagalene | 23.2 | 76.8 | 70.3 | 63.7 | 92.2 | 65.2 | 69.6 |
| Jerry | 34.9 | 65.1 | 61.4 | 57.5 | 81.3 | 60.0 | 69.6 |
| Judee | | | 57.2 | 53.1 | 83.3 | 64.5 | 77.6 |
| Ledger | 26.4 | 73.5 | 55.2 | 48.1 | 84.6 | 57.6 | 69.6 |
| Norris(CL) | 39.5 | 56.1 | 61.2 | 59.1 | 83.0 | 59.8 | 69.6 |
| Warhorse | | | 65.7 | 55.8 | 85.8 | 69.1 | 77.6 |
| WB-Quake | | | 73.9 | 50.6 | 82.2 | 68.9 | 68.9 |
| Yellowstone | 32.5 | 82.8 | 78.4 | 59.4 | 95.0 | 69.6 | 69.6 |
| Yearly Mean | 32.0 | 69.5 | 66.6 | 56.1 | 85.3 | 66.2 | 73.0 |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 3)

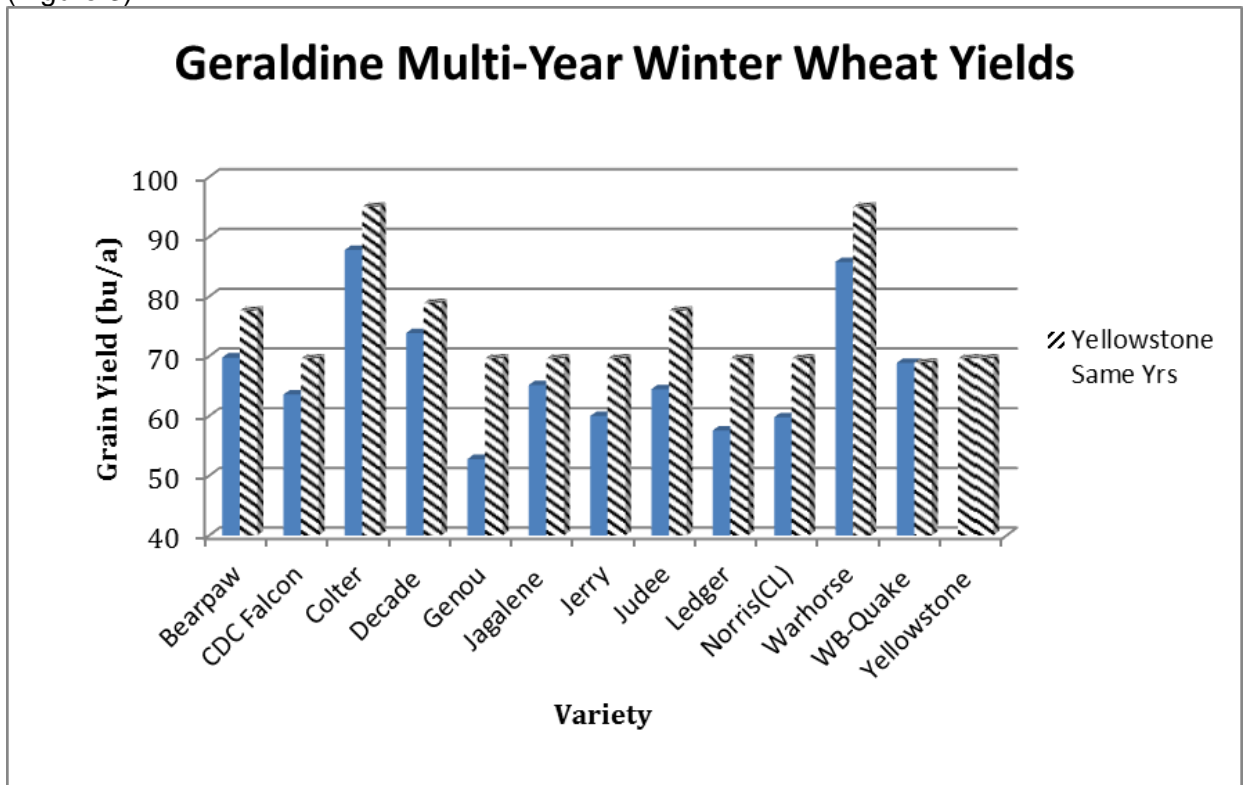


Table 9 Winifred multi-year no-till crop-fallow winter wheat cultivar **yield** performance.
Exp 133874 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|---------|-------------|-------------|-------------|----------------------|
| | | | (bu/a) | | | | |
| Bearpaw | | | Hail | 61.4 | 63.7 | 62.6 | 62.9 |
| CDC Falcon | 42.7 | 63.8 | no | 68.3 | 59.3 | 58.5 | 62.2 |
| SY Clearstone | | | | 70.5 | 54.7 | 62.6 | 62.9 |
| Colter | | | harvest | 65.0 | 51.6 | 58.3 | 62.9 |
| Decade | | 79.2 | | 67.1 | 74.7 | 73.7 | 66.6 |
| Genou | 39.7 | 62.4 | | 57.6 | 46.6 | 51.6 | 62.2 |
| Jagalene | 51.7 | 75.1 | | 68.5 | 67.2 | 65.6 | 62.2 |
| Jerry | 44.0 | 61.0 | | 56.2 | 54.0 | 53.8 | 62.2 |
| Judee | | | | 52.7 | 59.3 | 56.0 | 62.9 |
| Ledger | 41.7 | 65.1 | | 63.7 | 51.8 | 55.6 | 62.2 |
| Norris(CL) | 41.6 | 74.3 | | 63.0 | 55.7 | 58.7 | 62.2 |
| Warhorse | | | | | 52.8 | 52.8 | 61.5 |
| WB-Quake | | | | 51.9 | 55.0 | 53.5 | 62.9 |
| Yellowstone | 48.9 | 74.0 | | 64.2 | 61.5 | 62.2 | 62.2 |
| Yearly Mean | 44.3 | 69.4 | | 62.3 | 57.7 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 4)

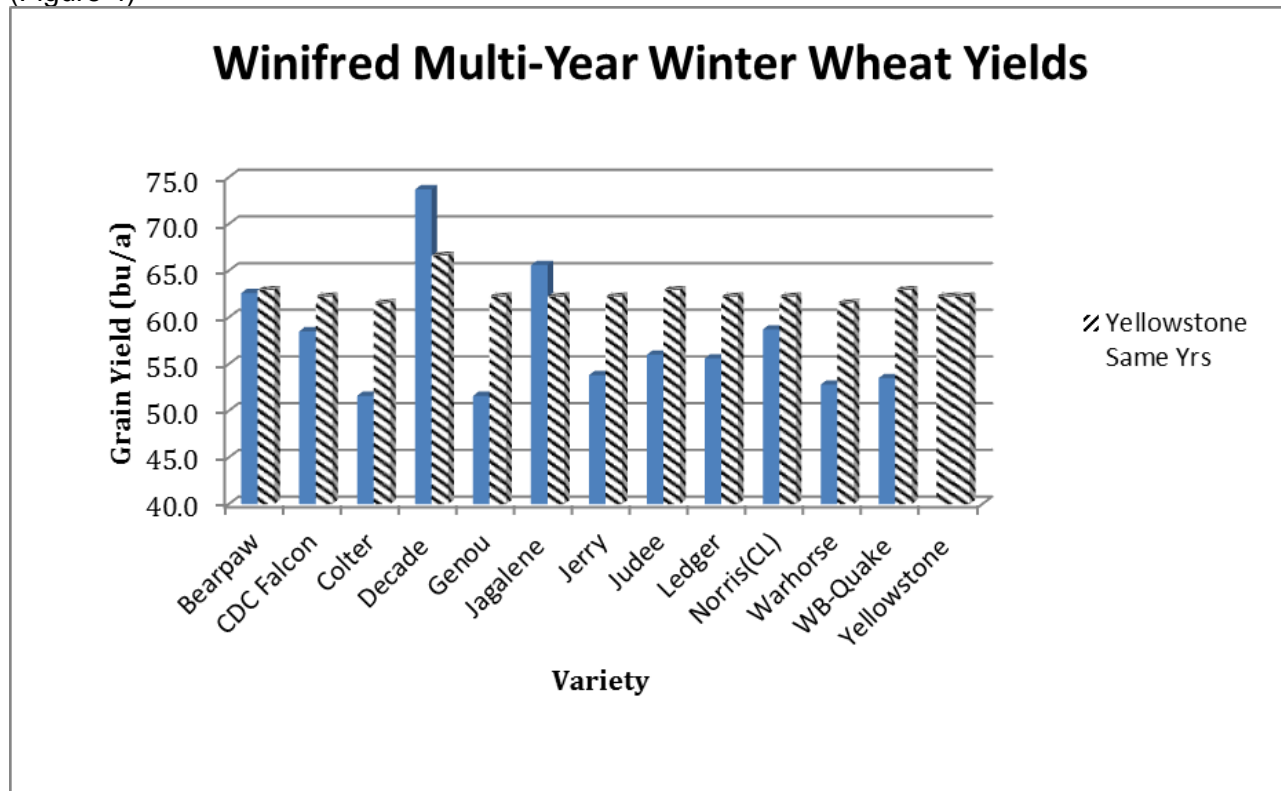


Table 10 Belt multi-year no-till recrop winter wheat cultivar **yield** performance.
Exp 133875 Central Agricultural Research Center, Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs | |
|--------------------|--------|------|------|-------------|-------------|-------------|----------------------|--|
| | (bu/a) | | | | | | | |
| Bearpaw | | | | 27.9 | 30.0 | 29.0 | 31.9 | |
| CDC Falcon | | | | 36.0 | 25.6 | 30.8 | 31.9 | |
| SY Clearstone | | | | 37.3 | 31.1 | 34.2 | 31.9 | |
| Colter | | | | 38.9 | 23.6 | 31.3 | 31.9 | |
| Decade | | | | 41.7 | 31.1 | 36.4 | 31.9 | |
| Genou | | | | 27.4 | 18.1 | 22.8 | 31.9 | |
| Jagalene | | | | 39.3 | 31.0 | 35.2 | 31.9 | |
| Jerry | | | | 33.0 | 28.8 | 30.9 | 31.9 | |
| Judee | | | | 31.3 | 23.4 | 27.4 | 31.9 | |
| Ledger | | | | 32.9 | 20.5 | 26.7 | 31.9 | |
| Norris(CL) | | | | 35.6 | 26.0 | 30.8 | 31.9 | |
| Warhorse | | | | 33.9 | 31.0 | 31.0 | 31.9 | |
| WB-Quake | | | | 29.6 | 25.7 | 27.7 | 31.9 | |
| Yellowstone | | | | 36.8 | 26.9 | 31.9 | 31.9 | |
| Yearly Average | | | | 34.4 | 26.6 | | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 5)

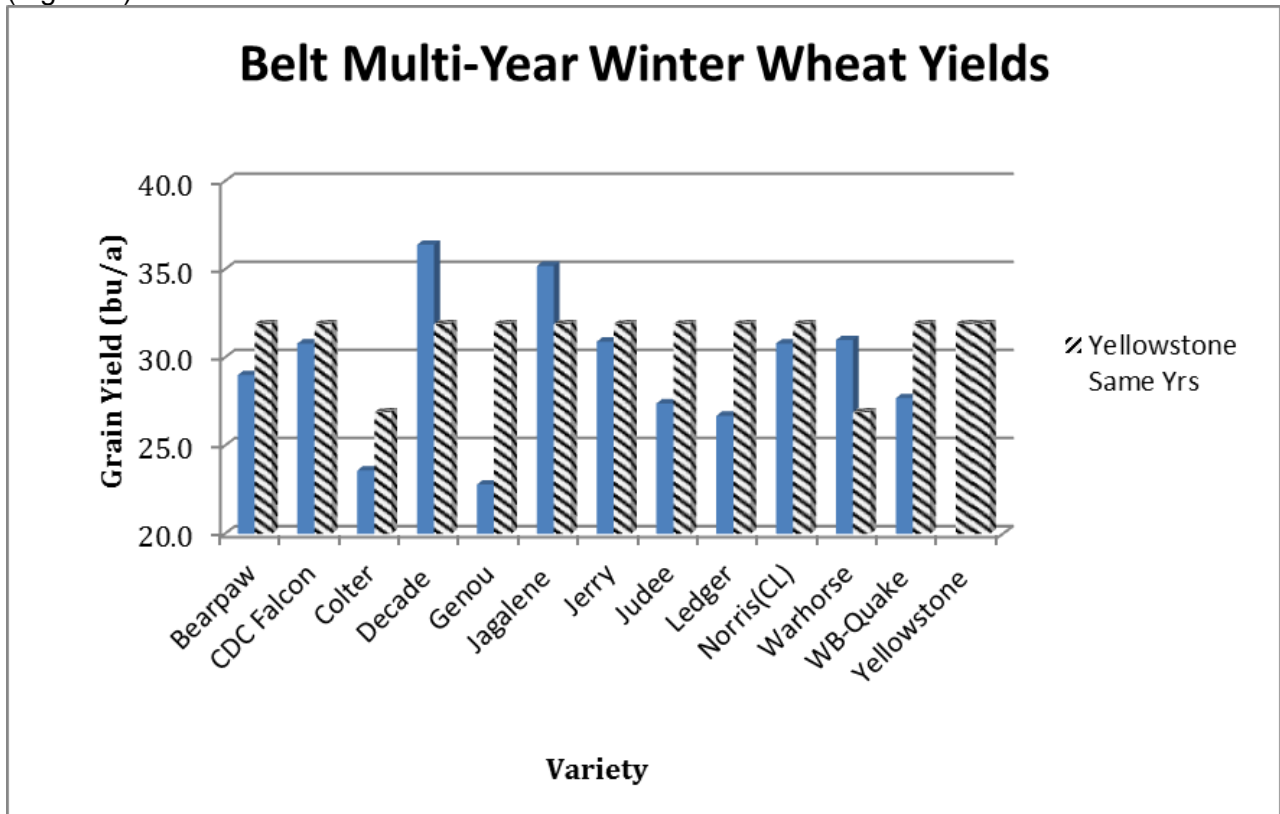


Table 11 Moccasin multi-year no-till recrop winter wheat cultivar **test weights**.
 Exp 133870 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (lb/bu) | | | | |
| Bearpaw | | | 59.8 | 54.1 | 56.3 | 56.7 | 55.3 |
| CDC Falcon | 58.6 | 60.6 | 59.1 | 56.6 | 53.5 | 57.7 | 57.0 |
| SY Clearstone | | | | 51.7 | 56.4 | 54.1 | 54.5 |
| Colter | | | | 51.9 | 58.4 | 55.2 | 54.5 |
| Decade | | 60.7 | 58.5 | 57.8 | 54.6 | 57.9 | 56.5 |
| Genou | 58.8 | 57.7 | 56.1 | 53.9 | 54.8 | 56.3 | 57.0 |
| Jagalene | 57.1 | 61.3 | 58.7 | 61.2 | 56.2 | 58.9 | 57.0 |
| Jerry | 57.9 | 58.0 | 57.4 | 55.6 | 54.7 | 56.7 | 57.0 |
| Judee | | | 58.6 | 55.9 | 55.4 | 56.6 | 55.3 |
| Ledger | 60.3 | 60.1 | 58.1 | 57.1 | 56.7 | 58.5 | 57.0 |
| Norris(CL) | 60.7 | 61.2 | 58.9 | 58.2 | 57.7 | 59.3 | 57.0 |
| Warhorse | | | 57.0 | 54.6 | 55.7 | 55.8 | 55.3 |
| WB-Quake | | | 56.5 | 54.4 | 56.2 | 55.7 | 55.7 |
| Yellowstone | 59.4 | 59.8 | 57.1 | 54.3 | 54.6 | 57.0 | 57.0 |
| Yearly Mean | 59.0 | 59.9 | 58.1 | 56.3 | 55.8 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 6)

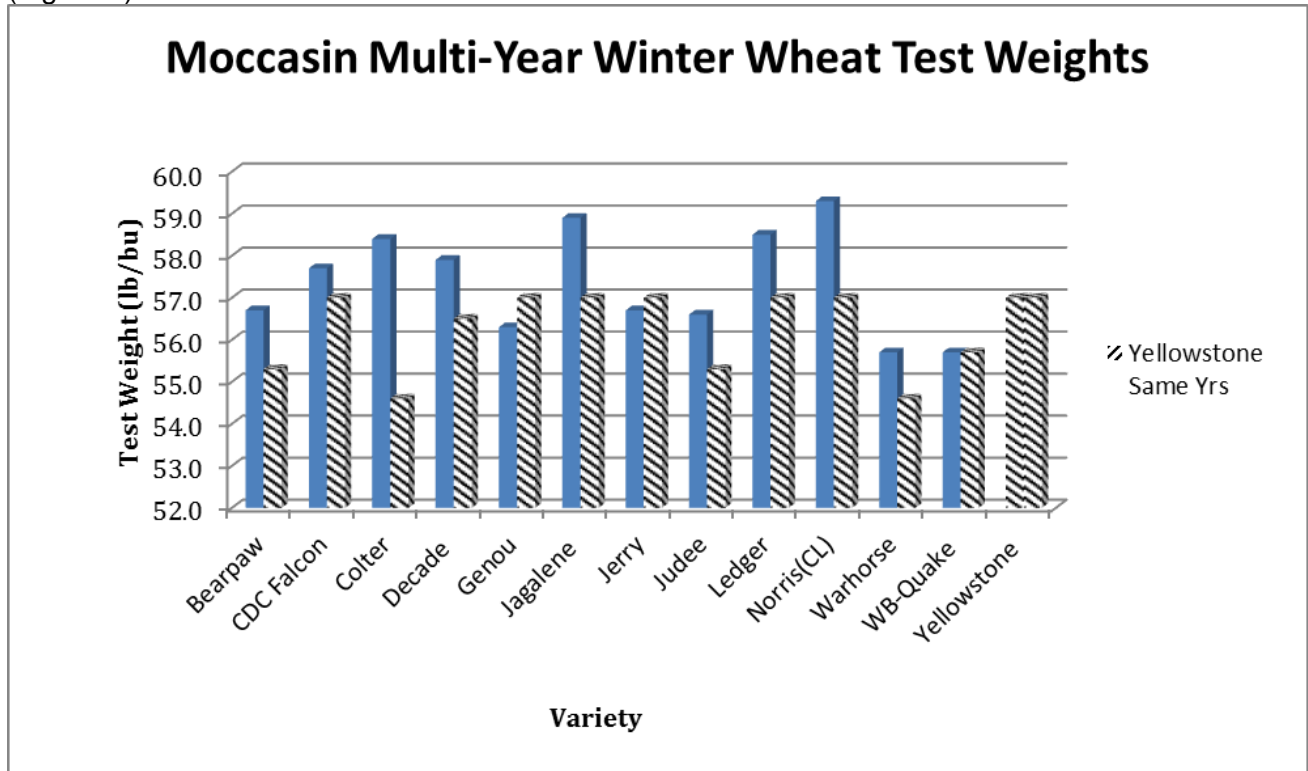


Table 12 Denton multi-year no-till recrop winter wheat cultivar **test weight** performance.
Exp 133871 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|---------|-------------|-------------|----------------------|
| | | | (lb/bu) | | | | |
| Bearpaw | | | 62.9 | No | 59.5 | 61.2 | 61.2 |
| CDC Falcon | 58.1 | 57.0 | 61.9 | Harvest | 58.5 | 58.9 | 59.1 |
| SY Clearstone | | | | Harvest | 59.6 | 59.6 | 60.4 |
| Colter | | | | Due To | 59.1 | 59.1 | 60.4 |
| Decade | | 57.1 | 62.5 | Hail | 59.3 | 59.6 | 59.3 |
| Genou | 57.1 | 55.1 | 61.8 | | 59.8 | 58.5 | 59.1 |
| Jagalene | 58.5 | 59.1 | 63.3 | | 61.9 | 60.7 | 59.1 |
| Jerry | 57.9 | 56.0 | 62.1 | | 58.5 | 58.6 | 59.1 |
| Judee | | | 61.6 | | 59.3 | 60.5 | 61.2 |
| Ledger | 58.4 | 57.0 | 62.6 | | 60.3 | 59.6 | 59.1 |
| Norris(CL) | 59.1 | 58.5 | 63.3 | | 59.7 | 60.2 | 59.1 |
| Warhorse | | | 61.8 | | 59.1 | 60.5 | 60.4 |
| WB-Quake | | | 59.2 | | 59.7 | 59.5 | 61.2 |
| Yellowstone | 58.3 | 55.6 | 62.0 | | 60.4 | 59.1 | 59.1 |
| Yearly Mean | 58.2 | 56.9 | 62.1 | | 59.6 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 7)

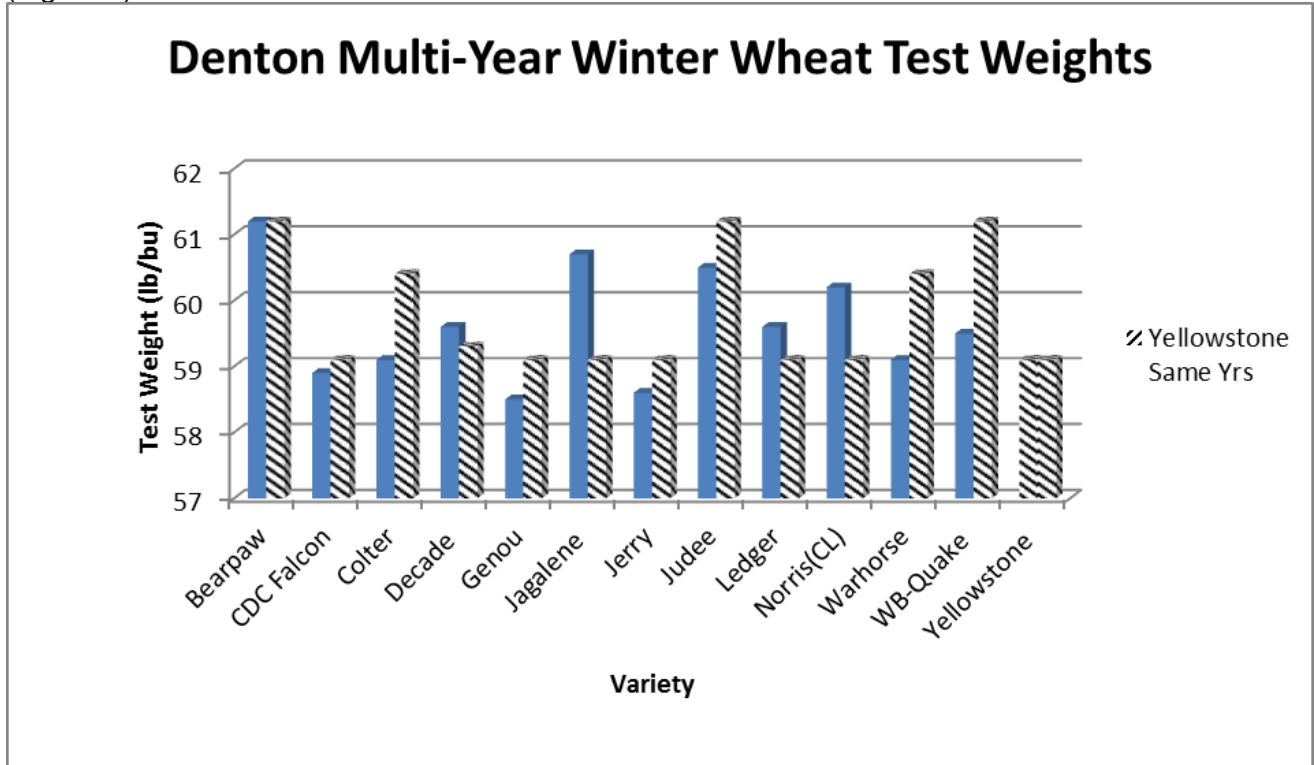


Table 13 Geraldine multi-year no-till C-C-F winter wheat cultivar **test weights**.
Exp 133872 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (lb/bu) | | | | |
| Bearpaw | | | 60.9 | 57.8 | 60.9 | 59.9 | 59.6 |
| CDC Falcon | 59.5 | 59.4 | 60.1 | 59.0 | 60.0 | 59.6 | 59.7 |
| SY Clearstone | | | | 58.0 | 60.7 | 61.5 | 59.1 |
| Colter | | | | 64.0 | 61.5 | 59.4 | 59.1 |
| Decade | | 61.3 | 62.3 | 59.3 | 61.4 | 61.1 | 61.1 |
| Genou | 59.4 | 60.1 | 61.0 | 56.2 | 60.7 | 59.5 | 59.7 |
| Jagalene | 61.1 | 60.8 | 62.9 | 63.9 | 63.1 | 62.4 | 59.7 |
| Jerry | 58.6 | 58.7 | 60.4 | 58.9 | 59.2 | 59.2 | 59.7 |
| Judee | | | 60.6 | 58.8 | 61.6 | 60.3 | 59.6 |
| Ledger | 59.1 | 59.8 | 61.4 | 57.6 | 60.5 | 59.7 | 59.7 |
| Norris(CL) | 60.8 | 60.9 | 59.5 | 60.9 | 62.3 | 60.9 | 59.7 |
| Warhorse | | | 61.8 | 57.3 | 60.6 | 60.6 | 59.6 |
| WB-Quake | | | 62.0 | 57.8 | 60.7 | 60.2 | 59.6 |
| Yellowstone | 59.6 | 60.1 | 60.7 | 57.3 | 60.9 | 59.7 | 59.7 |
| Yearly Mean | 59.7 | 60.1 | 61.1 | 59.1 | 61.0 | 60.3 | 59.7 |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 8)

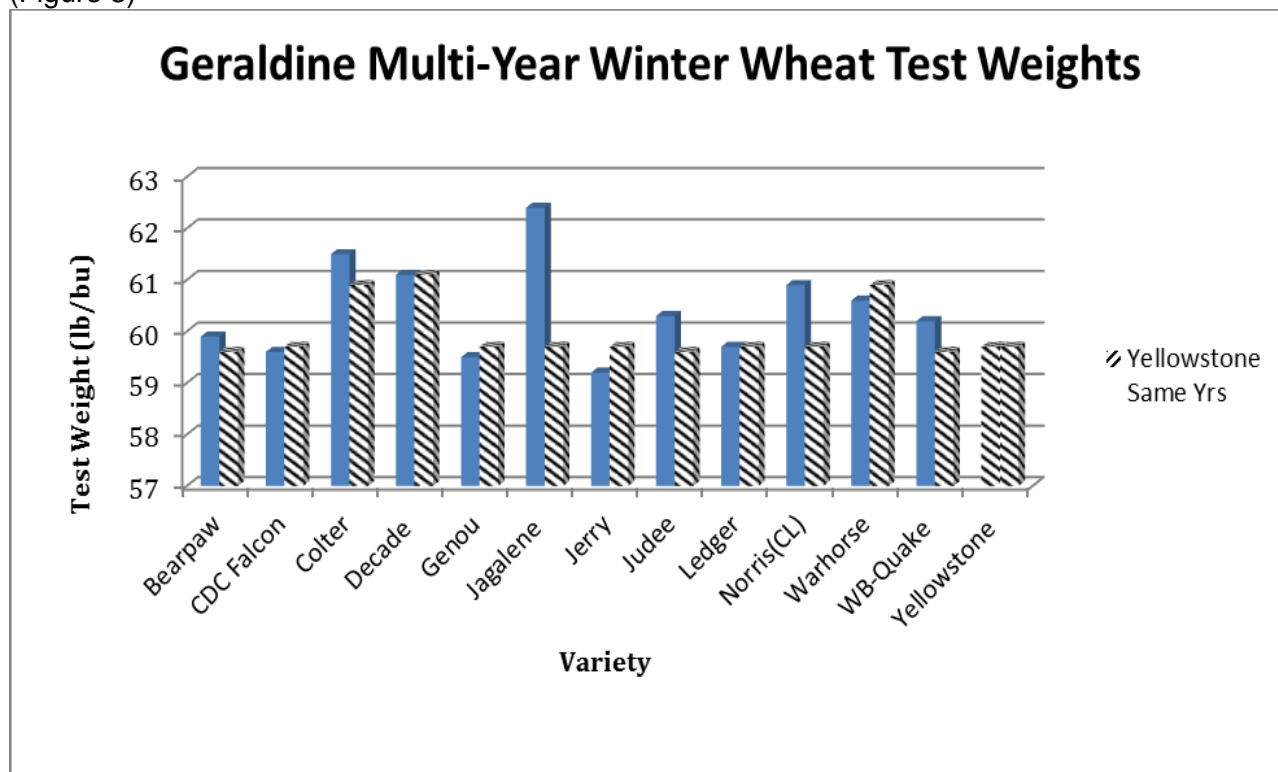


Table 14 Winifred multi-year no-till crop-fallow winter wheat cultivar **test weight** performance.
Exp 133874 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|---------|-------------|-------------|-------------|----------------------|
| | | | (lb/bu) | | | | |
| Bearpaw | | | Hail | 59.9 | 61.5 | 60.7 | 60.1 |
| CDC Falcon | 58.5 | 62.7 | no | 58.6 | 60.7 | 60.1 | 60.6 |
| SY Clearstone | | | | 60.4 | 60.0 | 60.2 | 60.1 |
| Colter | | | harvest | 59.7 | 60.0 | 59.9 | 60.1 |
| Decade | | 63.1 | | 60.3 | 62.0 | 61.8 | 61.8 |
| Genou | 58.0 | 63.7 | | 60.3 | 61.8 | 61.0 | 60.6 |
| Jagalene | 62.3 | 64.2 | | 63.2 | 62.0 | 62.9 | 60.6 |
| Jerry | 58.3 | 61.7 | | 59.1 | 60.6 | 59.9 | 60.6 |
| Judee | | | | 59.6 | 61.8 | 60.7 | 60.1 |
| Ledger | 59.6 | 63.8 | | 60.1 | 61.9 | 61.4 | 60.6 |
| Norris(CL) | 60.4 | 63.8 | | 61.1 | 61.5 | 61.7 | 60.6 |
| Warhorse | | | | 57.8 | 60.2 | 59.0 | 60.1 |
| WB-Quake | | | | 59.3 | 61.7 | 60.5 | 60.5 |
| Yellowstone | 60.4 | 61.6 | | 60.4 | 59.8 | 60.6 | 60.6 |
| Yearly Mean | 59.6 | 63.1 | | 60.0 | 61.1 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 9)

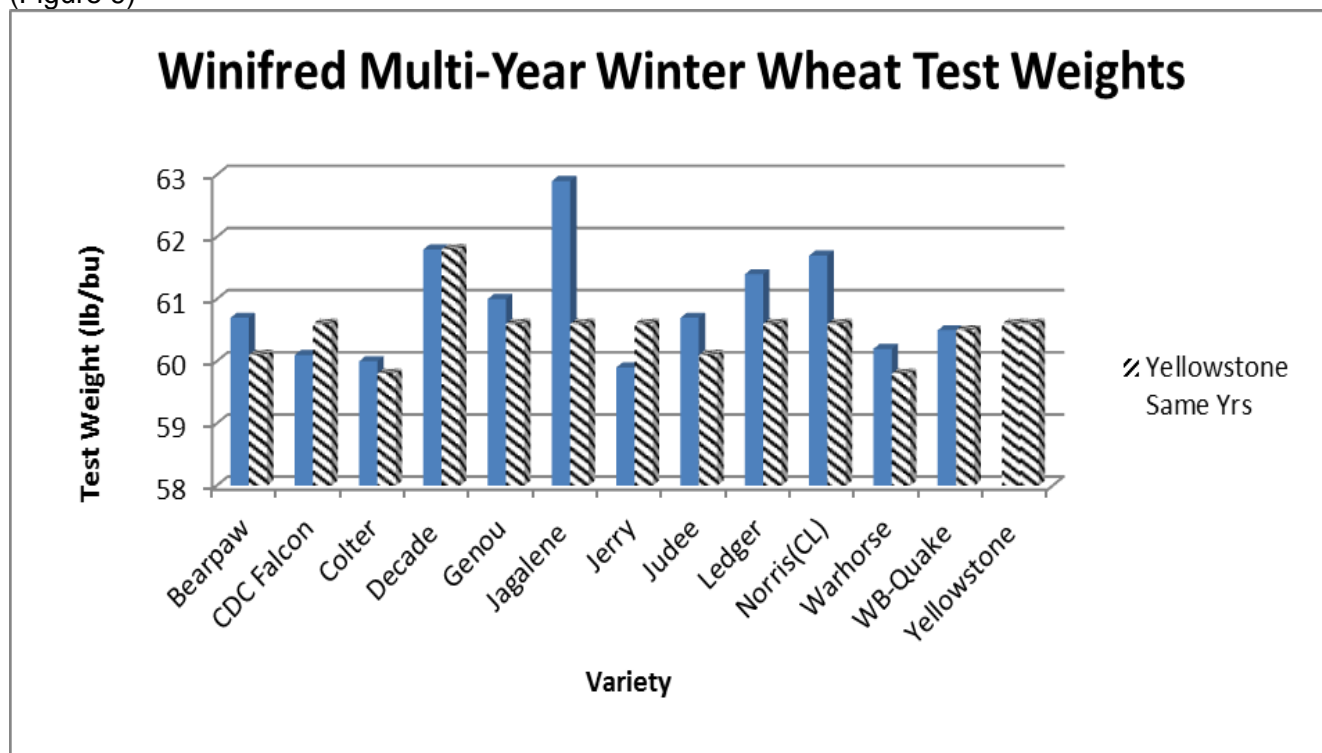


Table 15 Belt multi-year no-till recrop winter wheat cultivar **test weights**.
Exp 133875 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|---------|------|------|-------------|-------------|-------------|----------------------|
| | (lb/bu) | | | | | | |
| Bearpaw | | | | 54.1 | 55.7 | 54.9 | 55.0 |
| CDC Falcon | | | | 56.6 | 53.4 | 55.0 | 55.0 |
| SY Clearstone | | | | 54.5 | 58.3 | 56.4 | 55.0 |
| Colter | | | | 56.2 | 53.4 | 53.4 | 55.0 |
| Decade | | | | 57.8 | 54.3 | 56.1 | 55.0 |
| Genou | | | | 53.9 | 52.3 | 53.1 | 55.0 |
| Jagalene | | | | 61.2 | 58.3 | 59.8 | 55.0 |
| Jerry | | | | 55.6 | 54.6 | 55.1 | 55.0 |
| Judee | | | | 55.9 | 55.1 | 55.5 | 55.0 |
| Ledger | | | | 57.1 | 55.1 | 56.1 | 55.0 |
| Norris(CL) | | | | 58.2 | 56.0 | 57.1 | 55.0 |
| Warhorse | | | | 56.2 | 55.3 | 55.3 | 55.0 |
| WB-Quake | | | | 54.4 | 52.9 | 53.7 | 55.0 |
| Yellowstone | | | | 54.3 | 55.6 | 55.0 | 55.0 |
| Yearly Mean | | | | 56.1 | 55.0 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 10)

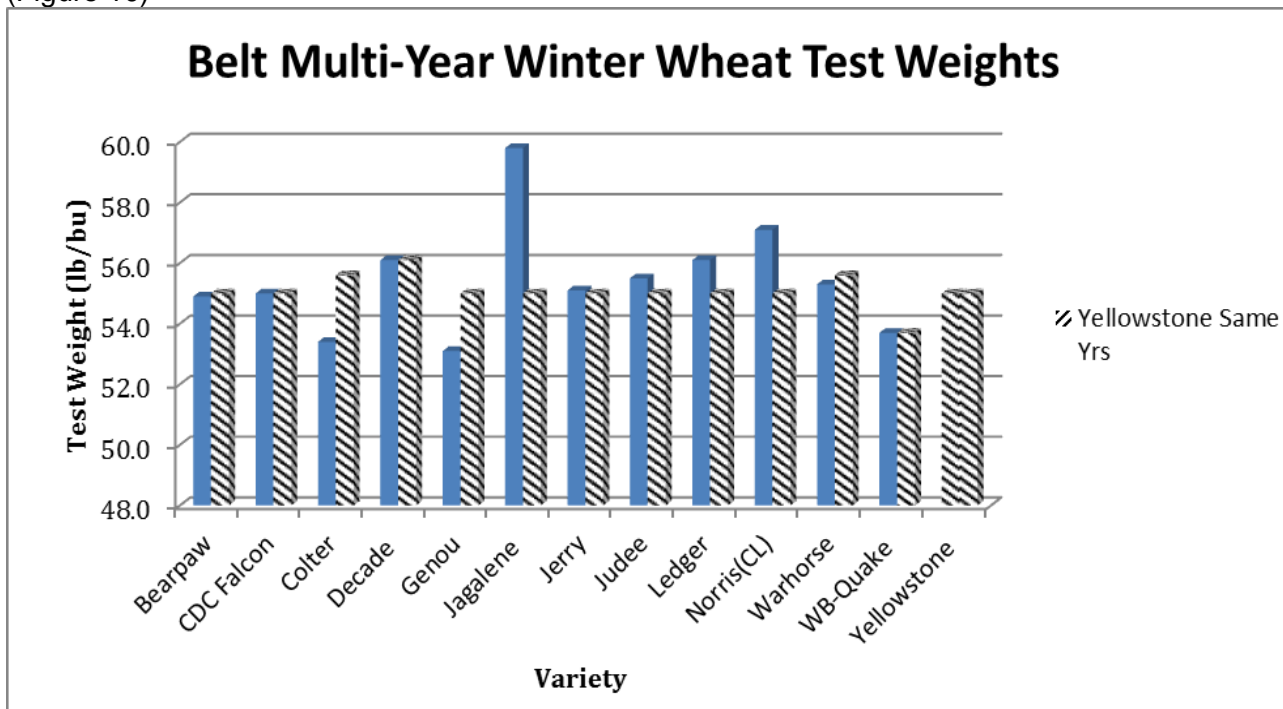


Table 16 Moccasin multi-year no-till recrop winter wheat cultivar **protein** performance.
Exp 133870 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (%) | | | | |
| Bearpaw | | | 14.5 | 16.5 | 16.2 | 15.7 | 16.6 |
| CDC Falcon | 14.7 | 13.4 | 14.0 | 17.2 | 17.2 | 15.3 | 15.8 |
| SY Clearstone | | | | 17.7 | 14.6 | 16.2 | 17.0 |
| Colter | | | | 17.3 | 15.7 | 16.5 | 16.6 |
| Decade | | 13.4 | 15.2 | 17.1 | 16.2 | 15.5 | 15.8 |
| Genou | 14.7 | 14.5 | 15.6 | 17.2 | 17.7 | 15.9 | 15.8 |
| Jagalene | 14.5 | 12.9 | 13.8 | 15.9 | 16.0 | 14.6 | 15.8 |
| Jerry | 15.0 | 13.4 | 15.3 | 16.8 | 17.0 | 15.5 | 15.8 |
| Judee | | | 15.7 | 17.8 | 16.3 | 16.6 | 16.6 |
| Ledger | 14.0 | 12.8 | 13.7 | 16.6 | 14.5 | 14.3 | 15.8 |
| Norris(CL) | 13.4 | 12.7 | 14.1 | 16.4 | 14.9 | 14.3 | 15.8 |
| Warhorse | | | 16.1 | 16.7 | 15.2 | 15.2 | 16.6 |
| WB-Quake | | | 15.6 | 16.9 | 15.6 | 16.0 | 16.6 |
| Yellowstone | 15.9 | 13.3 | 15.8 | 17.3 | 16.6 | 15.8 | 15.8 |
| Yearly Mean | 14.6 | 13.3 | 14.8 | 16.9 | 16.1 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 11)

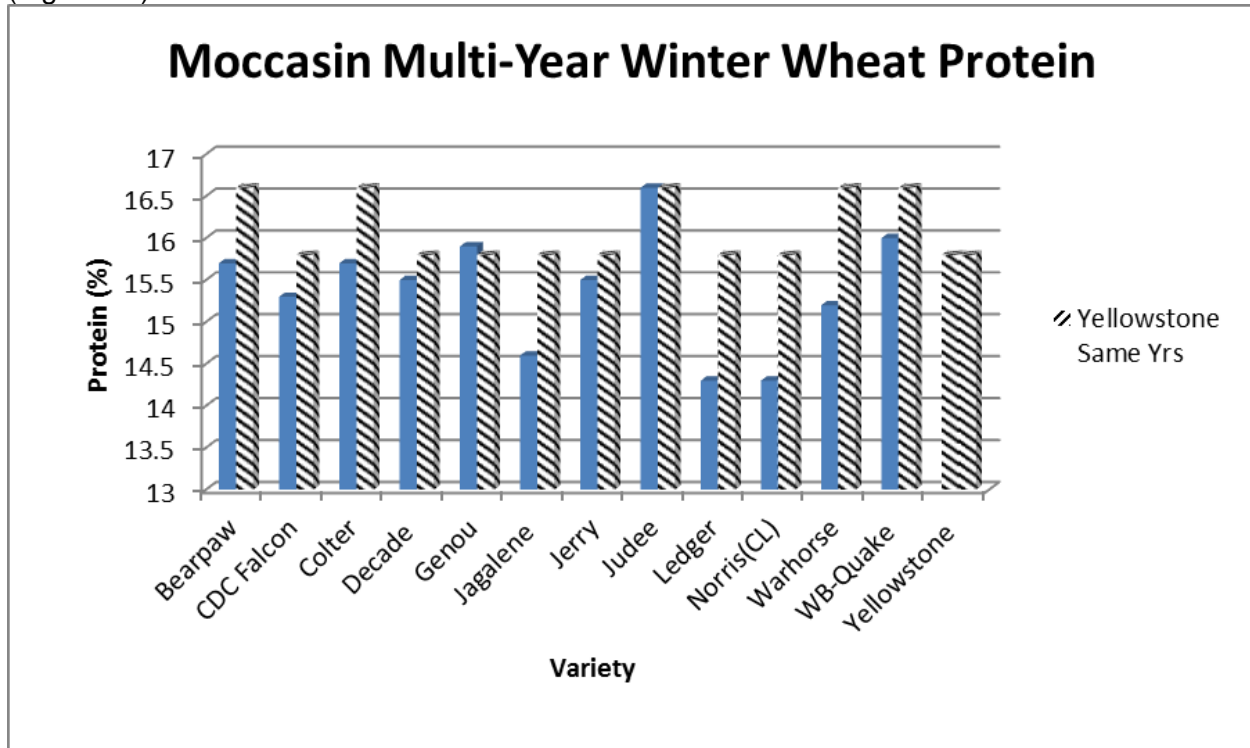


Table 17 Denton Multi-Year No-Till Recrop winter wheat cultivar **protein** performance.
Exp 133871 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|---------|-------------|-------------|----------------------|
| | | | (%) | | | | |
| Bearpaw | | | 9.8 | No | 12.6 | 11.2 | 11.1 |
| CDC Falcon | 13.4 | 11.4 | 11.2 | Harvest | 11.4 | 11.9 | 11.7 |
| SY Clearstone | | | | | 11.7 | 11.7 | 11.7 |
| Colter | | | | Due To | 13.2 | 13.2 | 11.7 |
| Decade | | 11.8 | 11.4 | Hail | 12.0 | 11.7 | 11.2 |
| Genou | 14.1 | 11.5 | 11.7 | | 12.2 | 12.4 | 11.7 |
| Jagalene | 13.9 | 10.9 | 9.9 | | 10.6 | 11.3 | 11.7 |
| Jerry | 13.3 | 12.0 | 12.3 | | 12.8 | 12.6 | 11.7 |
| Judee | | | 12.1 | | 11.3 | 11.7 | 11.1 |
| Ledger | 13.1 | 11.8 | 12.3 | | 11.0 | 12.1 | 11.7 |
| Norris(CL) | 14.2 | 10.6 | 10.9 | | 11.8 | 11.9 | 11.7 |
| Warhorse | | | 12.2 | | 12.4 | 12.3 | 11.7 |
| WB-Quake | | | 12.2 | | 11.4 | 11.8 | 11.1 |
| Yellowstone | 13.3 | 11.5 | 10.4 | | 11.7 | 11.7 | 11.7 |
| Yearly Mean | 13.6 | 11.4 | 11.3 | | 11.9 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 12)

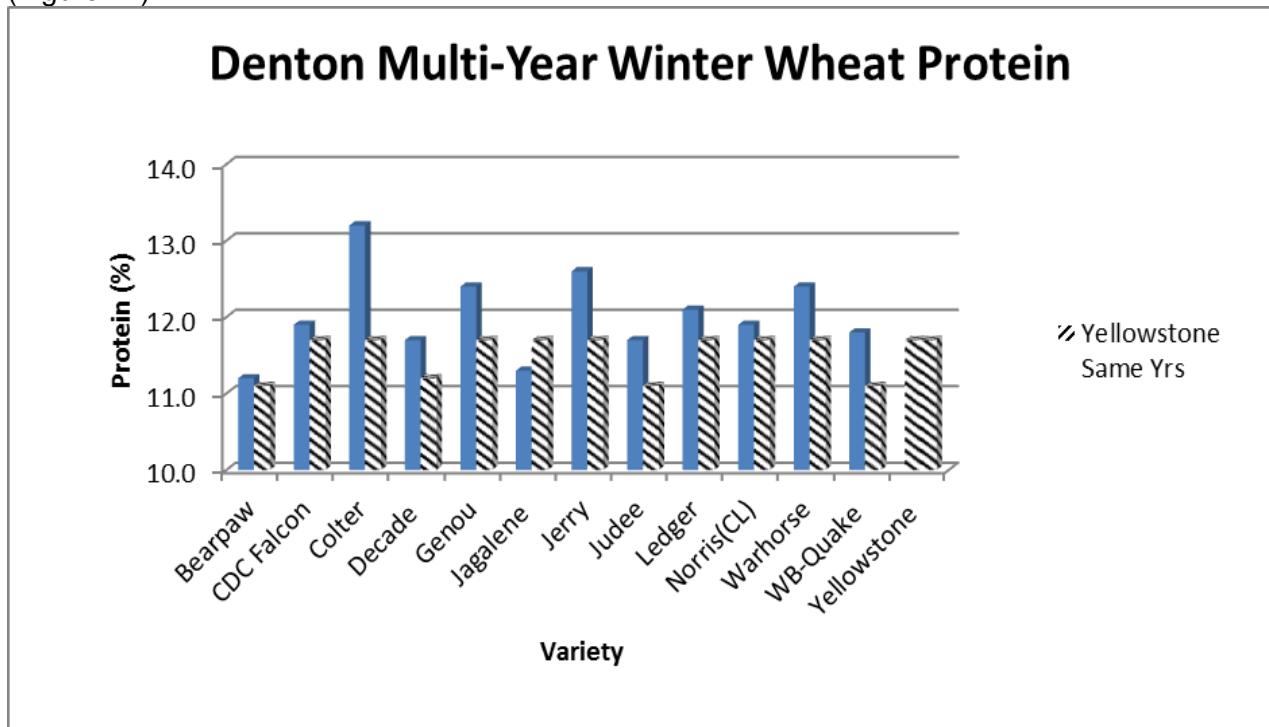


Table 18 Geraldine multi-year no-till C-C-F winter wheat cultivar **protein** performance.
Exp 133872 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | (%) | | | | |
| Bearpaw | | | 13.9 | 13.9 | 9.9 | 12.6 | 12.3 |
| CDC Falcon | 12.6 | 12.9 | 12.8 | 11.0 | 10.6 | 12.0 | 12.4 |
| SY Clearstone | | | | 12.7 | 9.5 | 11.1 | 11.7 |
| Colter | | | | 12.3 | 9.9 | 11.1 | 11.7 |
| Decade | | 12.0 | 12.9 | 10.8 | 10.2 | 11.5 | 12.3 |
| Genou | 12.7 | 13.5 | 14.5 | 15.6 | 10.9 | 13.4 | 12.4 |
| Jagalene | 12.0 | 12.0 | 12.6 | 10.0 | 10.2 | 11.4 | 12.4 |
| Jerry | 12.3 | 13.4 | 13.0 | 11.6 | 10.4 | 12.1 | 12.4 |
| Judee | | | 13.7 | 12.7 | 10.4 | 12.3 | 12.3 |
| Ledger | 12.6 | 12.6 | 13.3 | 13.2 | 10.0 | 12.3 | 12.4 |
| Norris(CL) | 13.2 | 16.1 | 14.0 | 11.0 | 9.8 | 12.8 | 12.4 |
| Warhorse | | | 12.4 | 12.7 | 9.6 | 11.6 | 12.3 |
| WB-Quake | | | 12.2 | 11.3 | 9.7 | 11.1 | 12.3 |
| Yellowstone | 12.8 | 12.3 | 13.4 | 12.6 | 10.8 | 12.4 | 12.4 |
| Yearly Mean | 12.6 | 13.1 | 13.2 | 12.2 | 10.1 | 12.0 | 12.3 |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 13)

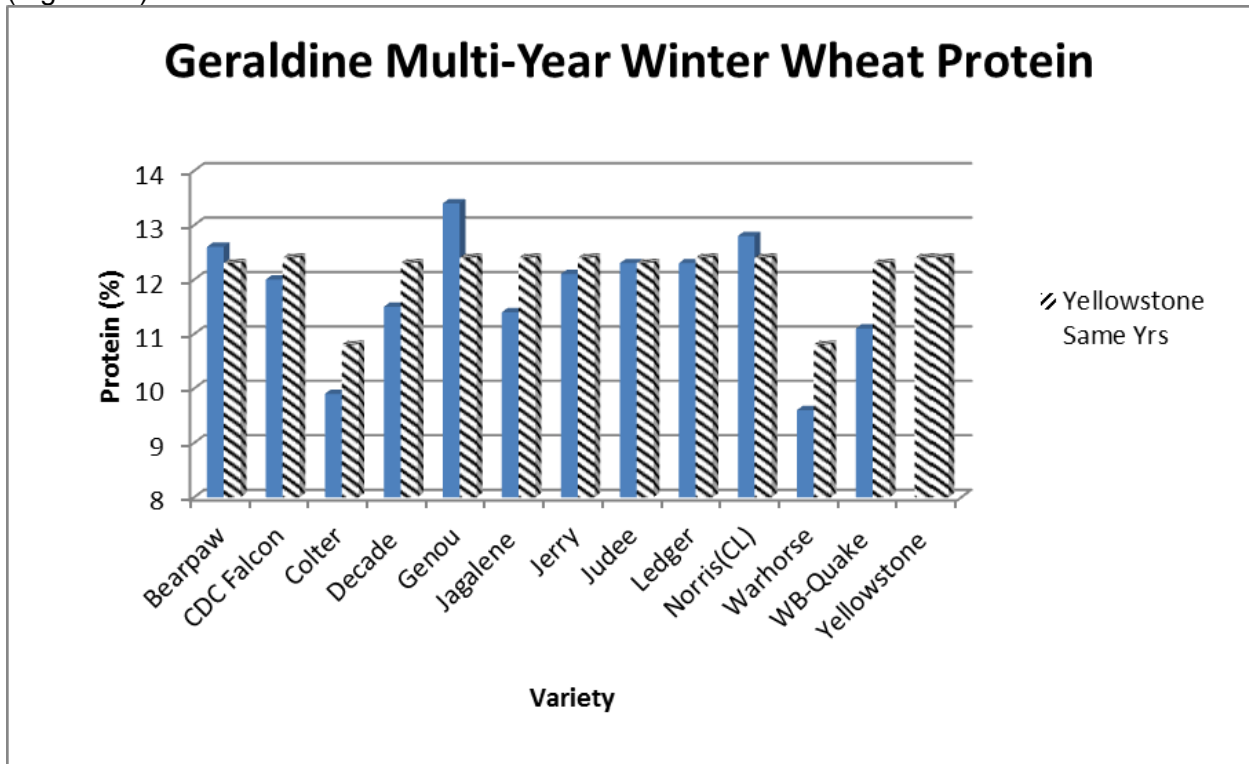


Table 19 Winifred multi-year no-till crop-fallow winter wheat cultivar **protein** performance.
 Exp 133874 Central Agricultural Research Center, Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|-------------|------------|---------|-------------|-------------|-------------|----------------------|
| | | | (%) | | | | |
| Bearpaw | | | Hail | 10.8 | 10.7 | 10.8 | 10.5 |
| CDC Falcon | 13.6 | 8.8 | no | 12.9 | 10.3 | 11.4 | 10.7 |
| SY Clearstone | | | | 10.2 | 10 | 11.1 | 10.5 |
| Colter | | | harvest | 13.1 | 10.8 | 12.0 | 10.5 |
| Decade | | 9.5 | | 9.5 | 9.8 | 9.6 | 10.1 |
| Genou | 13.3 | 9.4 | | 12.7 | 11.4 | 11.7 | 10.7 |
| Jagalene | 13.5 | 9.2 | | 9.1 | 10.5 | 10.6 | 10.7 |
| Jerry | 13.4 | 9.2 | | 11.9 | 10.2 | 11.2 | 10.7 |
| Judee | | | | 13.5 | 9.7 | 11.6 | 10.5 |
| Ledger | 12.1 | 10.2 | | 12.5 | 10.4 | 11.3 | 10.7 |
| Norris(CL) | 12.7 | 9.4 | | 11.4 | 11.3 | 11.2 | 10.7 |
| Warhorse | | | | 12.3 | 10.2 | 11.3 | 10.3 |
| WB-Quake | | | | 10.7 | 10.0 | 10.4 | 10.5 |
| Yellowstone | 12.7 | 9.3 | | 10.6 | 10.3 | 10.7 | 10.7 |
| Yearly Mean | 13.0 | 9.4 | | 11.5 | 10.4 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 14)

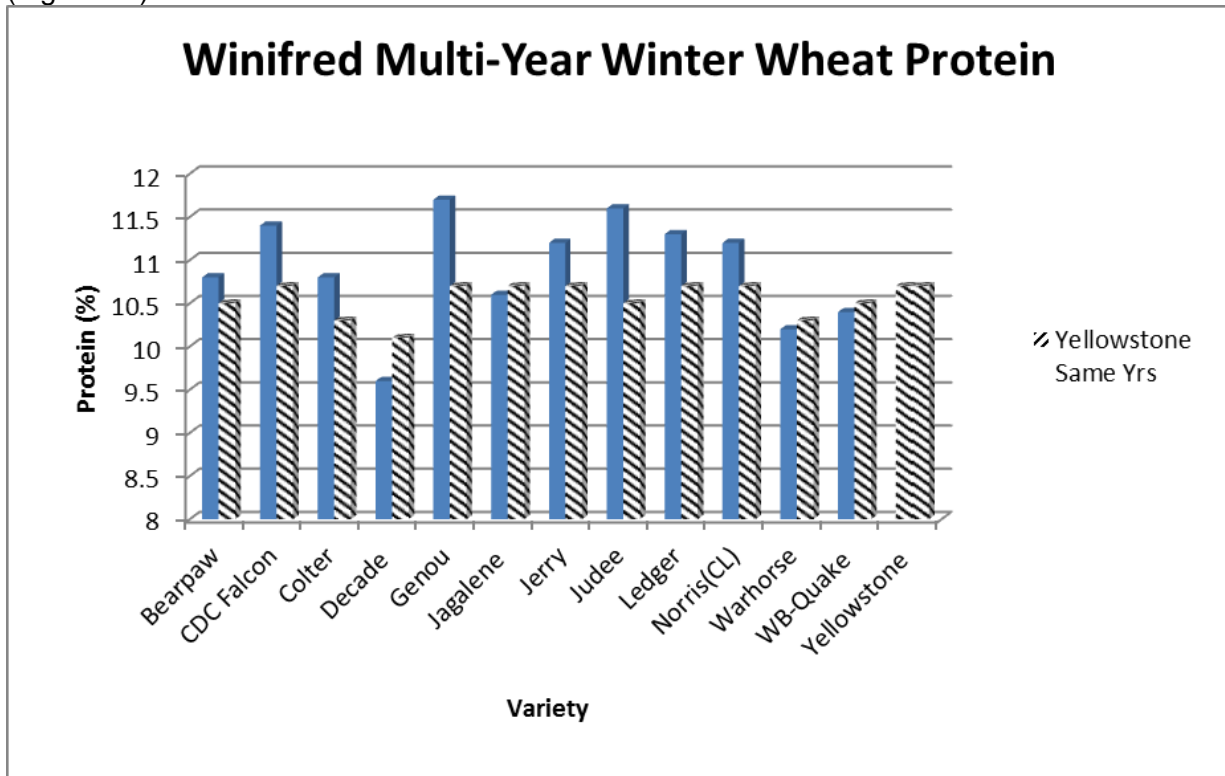


Table 20 Belt multi-year no-till recrop winter wheat cultivar **protein** performance.
Exp 133875 Central Agricultural Research Center. Moccasin, Montana.

| Selected Entries | 2009 | 2010 | 2011 | 2012 | 2013 | Average | Yellowstone Same Yrs |
|--------------------|------|------|------|-------------|-------------|-------------|----------------------|
| | (%) | | | | | | |
| Bearpaw | | | | 15.2 | 11.8 | 13.5 | 13.5 |
| CDC Falcon | | | | 13.3 | 13.0 | 13.2 | 13.5 |
| SY Clearstone | | | | 15.1 | 11.8 | 13.5 | 13.5 |
| Colter | | | | 14.6 | 11.9 | 13.3 | 13.5 |
| Decade | | | | 14.5 | 11.4 | 13.0 | 13.5 |
| Genou | | | | 15.6 | 12.8 | 14.2 | 13.5 |
| Jagalene | | | | 13.2 | 11.8 | 12.5 | 13.5 |
| Jerry | | | | 14.2 | 12.1 | 13.2 | 13.5 |
| Judee | | | | 15.0 | 11.6 | 13.3 | 13.5 |
| Ledger | | | | 14.3 | 11.2 | 12.8 | 13.5 |
| Norris(CL) | | | | 13.7 | 11.5 | 12.6 | 13.5 |
| Warhorse | | | | 14.6 | 11.5 | 13.1 | 13.5 |
| WB-Quake | | | | 14.7 | 12.2 | 13.5 | 13.5 |
| Yellowstone | | | | 14.5 | 12.5 | 13.5 | 13.5 |
| Yearly Mean | | | | 14.4 | 11.9 | | |

Entries with multi-year means \geq that of Yellowstone are **bold**.

(Figure 15)

