# Flax
## 2008 Variety Trial Results

Randall D.Violett
Powell Research and Extension Center
University of Wyoming
747 Road 9
Powell, Wyoming 82435

## Introduction

As the increasing cost of soybean meal made livestock rations to expensive for a local feed processor a search for an alternative protein source became an interest of the University of Wyoming Research and Extension Center in Powell WY.  This study was a cooperative effort between the University of Wyoming and North Dakota State University.

## Materials and Methods

This study was located at the Powell R&E Center at an elevation of 4365 feet above sea level. Typically, this location has about 142 days above 28 degrees F during the spring to fall growing season.  The soil type at the study site is a Garland clay loam (fine, mixed, mesic Typic Haplargid).  The site was fertilized with 120 lbs/A of N, 50 lbs/A of P. The previous crop was spring wheat and the only weed control was with post emergent herbicides.  A tank mix of 8oz/A of Select and 1pt/A of Buctril was used to control wild oats (*Avena fatua* L.) and redroot pig weed (*Amaranthus retroflexus* L.).  The herbicides used were not effective on wild buckwheat (*Polygonum convolvulus* L.) and redstem filaree (*Erodium cicutarium* (L.) L'Her. Ex Ait.) and a great deal of hand labor was used to reduce the weed population in the plots.   Planting the 25 different flax varieties at  a rate of 35 seeds /ft$^2$ in 7 inch row spacing's was accomplished using a 7.3 foot wide grain drill equipped with a fluted cone calibrated for 20 feet making each plot 95.76 square feet of harvestable area. Each plot was randomly assigned a variety for each of the three replications in a randomized complete block design and planted on May 15, 2008. Irrigation was accomplished using gravity flow gated pipe on 44" furrows and the amount of water applied is determined by the length of time for each set (12 hours =1"of water).

Table 1. Irrigation schedule and precipitation during 2008 growing season

| Month | Irrigation | | Precipitation | Total |
|---|---|---|---|---|
| | Date | Amount (inch) | inch | inch |
| May | 5/19/08 | 6 | 2.56 | 8.56 |
| June | 6/28/08 | 4 | 0.18 | 4.18 |
| July | 7/15/08 | 3 | 0.35 | 6.35 |
| | 7/31/08 | 3 | | |
| August | 8/22/08 | 1 | 0.18 | 1.18 |
| September | 9/10/08 | 2 | 1.32 | 3.32 |
| Total | -- | 19 | 4.59 | 23.59 |

Total water received by the 2008 crop was approximately 23.59".   Plots were direct harvested with a Wintersteiger plot combine on October 31, 2008.  Harvested seed was cleaned using "The Clipper" equipped with an 8/64 round screen, weighed to calculate clean seed yield in pounds per acre.  A sample was tested using a Dickey-john Corporation GAC 2100b analyzer at the Wyoming Seed Laboratory to arrive at percent moisture and test weight.

## Results and Conclusions

The 2008 growing season was a favorable one for cool season (C3) plant species.  There was little to no heat stress on this years flax crop.  The rain received in May helped establishment of the stand and all plots were rated excellent for establishment.  Weed pressure was the main concern so many hours of hand weeding was done to eliminate weeds as a factor on yield.    No lodging was observed and seeding rates should be increased in future trials.

Table 1. Averaged data by variety

| Variety Name | Yield lbs/A | Test Wt | Yield bu/A | % Moisture |
|---|---|---|---|---|
| A603 | 989.01 | 53.07 | 18.70 | 7.80 |
| Bison | 1145.24 | 53.23 | 21.52 | 8.13 |
| CARTER B | 1182.88 | 53.73 | 22.02 | 8.67 |
| CDC Arras | 1249.95 | 53.07 | 23.54 | 7.67 |
| CDC Bethume | 1357.05 | 53.10 | 25.59 | 8.20 |
| CDC Sorrel FP2141 | 1307.42 | 51.83 | 25.33 | 7.93 |
| FP2188 | 924.83 | 52.57 | 17.58 | 7.37 |
| FP2214 | 1345.85 | 52.10 | 25.84 | 7.67 |
| Hanley | 908.49 | 52.77 | 17.16 | 7.80 |
| Lightning | 1277.88 | 53.07 | 24.09 | 8.43 |
| Linott | 1092.37 | 53.73 | 20.33 | 8.27 |
| McGregor | 931.29 | 53.43 | 17.43 | 7.97 |
| N06 2055 | 1200.36 | 53.40 | 22.49 | 8.37 |
| Market Value* | 1052.11 | 53.83 | 19.56 | 8.08 |
| N414 | 1111.20 | 53.23 | 20.87 | 8.20 |
| Neche | 1000.89 | 53.47 | 18.74 | 8.03 |
| Nekoma | 1159.79 | 54.17 | 21.41 | 8.33 |
| Omega | 1084.34 | 53.63 | 20.22 | 8.13 |
| Pembina | 1009.17 | 53.03 | 18.99 | 8.00 |
| Prairie Blue | 1188.55 | 53.03 | 22.40 | 7.53 |
| P.G.FP2161 | 980.99 | 53.33 | 18.41 | 8.77 |
| Prairie Thunder | 1380.45 | 52.93 | 26.07 | 8.03 |
| Rahab 94 | 1095.33 | 53.10 | 20.61 | 8.00 |
| Webster | 1070.78 | 53.37 | 20.05 | 7.83 |
| York | 695.26 | 52.93 | 13.13 | 8.17 |

*Variety provided by local feed processor