

2010 Growing Conditions

Hettinger Research Extension Center

Growing conditions in Southwestern North Dakota were almost ideal for small grain production with an abundance of precipitation and cool temperatures throughout most of the season. Winter wheat growth and development was halted by bitterly cold temperatures in October but these conditions did not adversely affect winter survival. Small grain planting began during the last half of April. Cold temperatures and 6 inches of snow during the first half of May slowed seedling development and growth. Warm season crops also benefited with timely rainfall, warm August temperatures and a delayed hard frost. Small grain harvest began in mid-August, but persistent rainfall and heavy morning dew drug harvest out to the end of September. A 70 – 90 mph wind storm on Friday, August 13 swept through all of SW North Dakota, causing moderate to severe lodging in corn and sunflowers, and severe shatter losses in canola. Warm season crops tended to mature later than normal, which delayed harvest until mid-November.

An early infection of foliar diseases (tan spot and septoria) was widespread and caused some chlorosis and stunting. Weather conditions favored stripe rust which was prevalent on both winter and spring wheat. Fusarium head blight (scab) was documented in several areas and caused severe crop losses in some fields. Ascochyta blight decimated the chickpea research trials despite being sprayed with several fungicides. Wheat stem sawfly continues to be the number one pest problem in spring wheat but the pest may have reached its plateau last year. Sawfly tolerant spring wheat varieties now occupy large acreages and higher levels of sawfly parasitoids appear to be playing a greater role in controlling this insect. A small area of Hessian fly infested spring wheat was documented near Hettinger.

Most trials at the Hettinger Research Center were grown under a no-till cropping system. The predominant soil type is classified as a silty loam. Small grain trials were typically planted into field pea stubble and broadleaf crop trials were typically planted into spring wheat stubble. Residual soil fertility levels were determined and fertilizer was applied according to specific yield goals for each crop. Urea (46-0-0) was the primary nitrogen fertilizer source and was applied with a no-till drill prior to planting. Monoammonium phosphate (11-52-0) was typically applied directly with the seed during planting. All legume crops were treated with granular *rhizobia* inoculant during seeding.

HRSW, durum and barley trials were treated post-emergence for both wild oats and for broadleaf weeds (kochia, Russian thistle and wild buckwheat). Most broadleaf crops were treated with a pre-emergence burn down and with a post-emergence herbicide for grassy weeds and broadleaf weeds when possible.

Weather Data Summary - Hettinger

Frost Free Days

| | 28°F | 32°F | Normal 32°F |
|------------------------|------------|--------------|--------------|
| Date of Last Frost | May 8 | May 14 | May 18 |
| Date of First Frost | October 13 | September 18 | September 20 |
| Frost Free Days | 158 | 127 | 125 |

Precipitation

| Precipitation (inches) | 2005 – 06 | 2006 – 07 | 2007 - 08 | 2008 – 09 | 2009 – 10 | 55 Year Average |
|------------------------|--------------|--------------|--------------|--------------|--------------|-----------------|
| Sept. – Dec. | 3.68 | 3.15 | 1.26 | 6.23 | 4.66 | 3.34 |
| Jan. – March | 2.34 | 2.18 | 0.87 | 5.16 | 1.16 | 1.50 |
| April | 2.12 | 1.09 | 0.98 | 1.10 | 1.76 | 1.61 |
| May | 0.97 | 5.97 | 4.01 | 1.38 | 3.73 | 2.62 |
| June | 2.53 | 3.04 | 4.08 | 3.53 | 2.93 | 3.33 |
| July | 0.58 | 1.62 | 1.23 | 2.20 | 3.68 | 2.01 |
| August | 1.75 | 3.65 | 1.75 | 3.47 | 2.41 | 1.70 |
| Total | 13.97 | 20.70 | 14.18 | 23.07 | 20.27 | 16.11 |

Air Temperature

| Average Temp. F° | 2006 | 2007 | 2008 | 2009 | 2010 | 55 Year Average |
|------------------|------|------|------|------|------|-----------------|
| April | 47.8 | 40.2 | 40.1 | 38.2 | 44.8 | 42.7 |
| May | 55.6 | 56.2 | 52.0 | 52.0 | 50.0 | 53.9 |
| June | 65.2 | 62.7 | 59.7 | 58.8 | 62.0 | 63.1 |
| July | 77.3 | 75.4 | 71.1 | 64.6 | 67.6 | 70.1 |
| August | 71.3 | 68.8 | 70.0 | 63.0 | 68.6 | 68.8 |
| September | 56.4 | 60.9 | 56.6 | 62.6 | 56.3 | 57.8 |

Growing Degree Units - Corn

| Growing Degree Units (50-86) | 2006 | 2007 | 2008 | 2009 | 2010 | 38 Year Average |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-----------------|
| May | 323 | 272 | 207 | 265 | 210 | 263 |
| June | 465 | 452 | 346 | 344 | 393 | 419 |
| July | 678 | 672 | 606 | 458 | 536 | 583 |
| August | 593 | 533 | 579 | 461 | 547 | 537 |
| September | 276 | 353 | 340 | 421 | 278 | 315 |
| Total | 2335 | 2282 | 2078 | 2006 | 2032 | 2117 |