

Growing Conditions

Hettinger Research Extension Center

2004

The 2004 growing season was again challenging with cool temperatures and little precipitation. More than 5 inches of rainfall was received in September, 2003, providing much needed soil moisture recharge and terrific Fall growing conditions for winter wheat. Snow cover throughout the winter months provided adequate insulation resulting in little winter kill. Relatively mild and dry early Spring conditions allowed for seeding to begin during the first part of April, about 2 weeks earlier than normal, and continued with few weather related interruptions. Hard frosts on May 1, 13 and 14 caused some crop damage, especially in canola, flax and alfalfa. Small grain crops looked very nice through heading (mid-June) and then rapidly went down hill from there with a lack of rainfall. Another hard frost (25 F) on June 18 caused considerable crop injury, as many small grain and cool season broadleaf crops (canola, buckwheat, field pea) were flowering. A 3 inch rain during the first week of July basically saved the small grain crop. The Regent plot site was completely hailed out on July 7. Small grain harvest began in mid-August with relatively good yields and excellent grain quality. A light frost on August 19 killed the dry bean trial and caused additional injury to corn, buckwheat and other sensitive crops. A hard frost on September 7 terminated corn growth.

Insect infestations were minimal again this year, although there were some localized areas with severe grasshopper, cutworm and alfalfa weevil damage. Plant diseases were generally minor with reports of tan spot, septoria, and wheat streak mosaic virus.

All trials at the Hettinger Research Center were planted with a no-till drill. Broadleaf crop trials were planted into small grain stubble and small grain trials were planted into soybean stubble. Residual soil fertility was 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 applied directly with most seed at planting.

All HRSW, durum and barley trials were treated post-emergence for both grassy weeds (foxtails and 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 either a pre-emergence or a post-emergence treatment 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 14	May 18	May 18
Date of first frost	Sept. 7	Sept. 7	Sept. 20
Frost free days	116	112	125

Weather Data Summary - Hettinger

Precipitation

Precipitation (inches)	2001 - 02	2002 - 03	2003 - 04	49 Year Average
Sept. - Dec.	1.69	1.49	6.88	3.29
Jan. - March	1.11	3.83	1.83	1.40
April	1.14	1.38	0.54	1.67
May	0.80	3.18	1.00	2.62
June	1.34	1.99	0.46	3.37
July	1.36	0.37	3.43	2.05
August	1.11	0.44	1.13	1.64
Total	8.55	12.60	15.27	16.04

Air Temperature

Average Temperature F	2001	2002	2003	2004	49 Year Average
April	43.0	40.2	46.7	45.4	42.6
May	55.2	49.6	52.9	51.3	54.1
June	62.7	65.4	60.2	59.5	63.4
July	71.6	76.2	72.4	69.2	70.0
August	73.0	67.5	73.7	63.4	69.0
September	59.1	61.1	57.6	60.2	57.4

Growing Degree Units - Corn

Growing Degree Units (50 - 86)	2001	2002	2003	2004	32 Year Average
May	285	245	212	242	265
June	401	476	349	371	422
July	652	707	612	558	582
August	631	549	655	441	537
September	357	387	294	335	310
Total	2326	2364	2186	1947	2116