

Crop Season

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Below-normal precipitation totals were recorded during the 2001 growing season at the Armstrong and Neely-Kinyon farms, for the second consecutive year. March through October precipitation totaled 22.53 inches, or 5.57 inches below the area's 30-year norm. Most of the precipitation shortfall occurred during the summer months. The July rainfall total of 1.06 inches was the driest in the farm's nine-year history. Temperatures for the cropping season averaged near normal, but large monthly deviations occurred during spring and fall. Maximum daily temperature exceeded 90°F on 20 summer days. Monthly temperature and precipitation totals as well as deviation from normal are shown in tables 1 and 2.

The winter of 2001 was colder and wetter than normal. These conditions persisted into March and prevented an early start to spring fieldwork at the farms. Spring fertilizer applications and seeding of small grains began April 17, two weeks later than normal. Planting of corn experiments began April 27, followed by soybeans May 15. All plantings were completed by May 29, a week later than normal.

April and May 2001 precipitation totals were above normal and accounted for more than 50% of the cropping season's total rainfall. The farm's subsoil moisture reserves were recharged to favorable levels during these spring months; however, this time also brought the farms' worst hailstorms, April 11 and May 13. Both storms produced heavy rains and hail up to three-quarter inch in diameter, covering the ground to

a 5-inch depth. Storm damage of April 11 was confined mainly to buildings and vehicles, while the May 13 storm also caused significant crop damage and soil erosion. First-cutting alfalfa, trees, and small fruit trials were heavily damaged; corn studies received less damage due to the early date of the storm.

Corn and soybean crops matured rapidly during the summer. A pattern of below-normal rainfall began during June and July then continued throughout the summer, into early fall. Area corn and soybean crops both were rated good to excellent by the end of July, but there were producer concerns about the lack of rainfall. Air temperatures during this same period were seasonal, not excessively hot, and crops were able to draw heavily on subsoil moisture reserves, mature, and produce respectable yields in a very dry year.

A warm and dry fall was beneficial because it allowed crops to mature and dry down quickly for early harvest. Corn and soybean harvest began at the Armstrong Farm on September 21. Harvest moistures, grain quality, and test weights all were desirable for the third consecutive year. Harvest of the corn and soybean experiments was completed October 24 at the Armstrong Farm and October 29 at the Neely-Kinyon Farm.

In 2001, soybean and oat yields were near, but corn yields were below, the farms' nine-year average. Crop variety yield trials at the Armstrong Farm produced average yields of 157 bushels for corn, 55 bushels for soybeans, and 136 bushels for oats.

Table 1. Armstrong Research and Demonstration Farm, Lewis, IA, monthly rainfall and average temperatures for 2001.

| Month | Rainfall (inches) | | | Temperature (°F) | | | Days 90° or above |
|-----------|-------------------|------|---------------------------|------------------|------|---------------------------|-------------------------|
| | 2000 | 2001 | Deviation from normal* | 2000 | 2001 | Deviation from normal* | |
| March | 0.28 | 0.33 | -1.96 | 43.5 | 33.2 | -9.2 | 0 |
| April | 1.57 | 3.95 | 0.94 | 48.7 | 54.7 | 4.2 | 0 |
| May | 2.53 | 7.78 | 2.91 | 65.1 | 61.8 | 0.3 | 1 |
| June | 4.36 | 2.66 | -1.87 | 69.1 | 70.1 | -0.9 | 1 |
| July | 4.20 | 1.06 | -2.73 | 73.2 | 76.9 | 0.9 | 8 |
| August | 1.58 | 1.65 | -1.92 | 75.5 | 73.9 | -0.2 | 9 |
| September | 0.70 | 2.75 | -1.38 | 66.4 | 63.0 | -2.3 | 1 |
| October | 1.85 | 2.35 | 0.26 | 56.3 | 52.1 | 5.9 | 0 |
| Totals | 17.07 | 2.53 | -5.75 | | | | 20 |

* Normal rainfall and temperatures recorded at US Weather Bureau Station, Atlantic, Iowa.

Table 2. Neely-Kinyon Research and Demonstration Farm, Greenfield, IA, monthly rainfall totals for 2001.

| Month | Rainfall (inches) | | | Days 90° or above |
|-----------|-------------------|-------|---------------------------|-------------------------|
| | 2000 | 2001 | Deviation from normal* | |
| March | 1.30 | 1.90 | -0.6 | 0 |
| April | 1.90 | 4.10 | 0.8 | 0 |
| May | 1.41 | 6.51 | 2.3 | 0 |
| June | 5.41 | 3.42 | -1.2 | 3 |
| July | 4.47 | 2.56 | -2.0 | 9 |
| August | 0.76 | 0.90 | -2.8 | 13 |
| September | 1.36 | 5.38 | 1.3 | 2 |
| October | 1.11 | 3.28 | 0.7 | 0 |
| Totals | 17.72 | 28.05 | -1.5 | 27 |

* Normal rainfall recorded at US Weather Bureau Station, Greenfield, Iowa.