

## Weather and Growing Season Summary

### RFR-A1359

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#### Weather Summary

Unusual weather extremes seemed to be the rule for most of 2013, with several weather records broken.

For the year, temperatures averaged 46°F, which is 1.6°F below normal; this ranks as the 25<sup>th</sup> coolest year in 141 years of records. The average temperature was a 5.4°F drop from the previous year, which is the largest year-to-year drop on record. May 14 set an extreme high temperature record as Sioux City recorded 106°F on that date. This was the highest recorded temperature of the calendar year and also set a record for the earliest recorded 106°F or above temperature. The previous earliest 106°F or above record was set on May 29, 1934.

Snowfall also set an extreme record. Most of the state recorded measurable snow of 3.4 in. on May 1–3. This was a new statewide record, almost tripling the earlier record of 1.2 in. set in 1947.

Annual precipitation, which was only 0.16 in. above normal, also was marked by periods of extremes. Both April and May were the *wettest* on record and many locations in Iowa had both July and August as the *driest* ever recorded.

#### Growing Season

Following the record drought of 2012, plant available soil moisture reserves were very low going into the spring of 2013 and drought was a real concern for the growing season. January through March precipitation was below normal, however, April brought normal to above normal precipitation for most of the

state. Parts of western Iowa saw record amounts of rain. A continuation of this above normal pattern of rain, coupled with a trend of lower than normal temperatures, combined to make spring 2013 the single wettest and the fifth coolest on record. A welcome period of dry weather occurred from May 10 through May 18 and allowed for some much needed planting. Even though the extended period of cool and wet weather delayed planting, it allowed Iowa to be listed as drought-free by the U.S. drought monitor for the first time since August 2011. The relief seemed short-lived however, as very little rain fell from July through September. In fact, this time period is the second driest July through September on record. An unusual period of mild temperatures occurred from July through mid-August, which helped most crops endure the precipitation shortage. Crops in many areas started deteriorating rapidly in mid-August as temperatures climbed. More normal rains returned for October, but November and December were below average rainfall. Even with the sporadic and varied rainfall, most of the state had better soil moisture reserves going into the winter of 2013-2014 than the prior two years.

#### Crop Yield and Quality

A cool and wet start to the growing season caused most crops to be planted relatively late and develop slowly. Coupled with some extreme stresses of drought and heat during the summer, there were concerns about the crop going into harvest. The possibility of reduced yields, a wet crop, standability issues, and an early frost all were possible.

Frost across Iowa generally was two weeks later than normal allowing the crop to reach full maturity. The stresses of the growing season caused some standability issues in select fields, but it generally was not

widespread across the state. Harvesting these fields early was a common occurrence.

Late in the season, several days with warm weather and windy conditions helped dry the crop, however, most producers had additional expenses for drying. Some areas even had spot shortages of corn dryer gas. Crop yields were quite varied, but for many, turned out to be much better than expected.

State average corn yields for 2013 were 165 bushels/acre and were slightly below the 10-year average of 168 bushels/acre. State soybean yields were 44.5 bushels/acre and also were below the 10-year average of 48 bushels/acre. Grain quality for both was average with the main issue being how to deal with the higher-than-normal moisture content.

**Table 1. Monthly precipitation, average temperature, and departure from normal for 2013.**

	Precipitation		Temperature		Days 90°F or above	Nights 32°F or below
	Total	Departure *	Mean	Departure *		
January	0.14	-0.49	21	3	--	29
February	0.42	-0.20	25	1	--	28
March	1.73	-0.23	29	-7	--	30
April	5.31	1.59	42	-6	--	23
May	8.04	3.75	58	-2	1	3
June	3.56	-1.44	69	-1	4	--
July	1.10	-3.20	73	-1	5	--
August	2.16	-1.58	72	1	6	--
September	2.51	-0.63	67	4	2	--
October	3.31	0.94	50	-1	--	8
November	1.18	-0.32	34	-2	--	23
December	0.14	-0.80	18	-4	--	31
Total	29.56	2.30	n/a	n/a	18	175

\*Departure from 30-year average as recorded at the ISU Western Research Farm weather station.

**Table 2. Monthly growing degree day units (GDD base 50) for the 2013 growing season April 1 to September 30.**

	GDD monthly		GDD accumulation	
	Total	Departure *	Total	Departure *
April	54	-142	54	-143
May	303	-82	357	-225
June	568	-16	925	-241
July	711	-1	1,636	-242
August	684	23	2,320	-219
September	500	27	2,820	-192

\*Departure from 30-year average as recorded at the ISU Western Research Farm weather station.