

2013

Weather and Growing Season Summary

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Weather and Growing Season Summary

Abstract

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Weather and Growing Season Summary

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Weather summary

Unusually warm weather was the rule throughout most of 2012. Temperatures were well above normal for each of the first seven months of the year, with only August through October being cooler than normal.

March was especially noteworthy as temperatures averaged 16°F above normal and 2.4°F above the previous March record set in 1910. For the growing season, mean monthly temperatures varied from 4°F below to 16°F above the 30-yr average (Table 1). Whereas a typical year has 23 days with temperatures of 90°F or above, this year there were a total of 44 days above 90°F. Overall, 2012 was a much warmer year than typically experienced.

A very dry late summer and fall in 2011 set the stage for drought in Iowa 2012. Precipitation at the Western Research Farm was 10.78 in. less than the 30-yr average. Based on statewide averages over the last 140 years, it was the fifth lowest summer precipitation total and the driest June on record.

Growing Season

The very mild March weather caused vegetation to start developing nearly a month early and also allowed for crop planting to occur ahead of normal. A frost on April 12 damaged the early planted and emerged corn, and developing alfalfa also sustained considerable damage. However, both crops recovered from the frost damage. Because the above normal temperatures enabled greater evaporation, drought conditions developed rapidly and were intensified due to the lack of precipitation in June and July. With half of the

above 90°F days occurring in July, the month was the hottest calendar month since August 1947 and the hottest July since 1936.

Based on statewide averages over the last 140 years, 2012 had the fifth lowest summer precipitation total and the driest June on record.

Overall, western Iowa will remember the 2012 growing season as hotter and dryer than normal. It ranked as the third warmest and 19th driest year among the 140 years of statewide records.

Crop yield and quality

An early start to the season and rapidly accumulating growing degree day units (Table 2) combined to accelerate grain fill and contribute to early grain maturity, dry down, and harvest. Many areas saw corn harvest starting in August in the drought and wind damaged fields with most corn harvested by early October. Soybean harvest followed corn harvest in most areas. Although frost, hail, and high winds also caused several areas of localized damage, drought was the most damaging weather phenomenon of the year. Estimates by the Iowa Department of Agriculture and Land Stewardship show that a 19 to 20 percent decline in corn yields and a 12 to 13 percent reduction in soybean yields occurred compared to the statewide 5-yr average.

Although historically droughts in Iowa have been followed by relatively plentiful rainfall in the month of September that did not occur this year and many are wondering what the outlook for the 2013 growing season will be. For related information, see the soil moisture article printed elsewhere in this Progress Report.

Table 1. Monthly precipitation, average temperature, and departure from normal for 2012.

	Precipitation		Temperature		Days 90°F or above	Nights 28°F or below
	Total	Departure*	Mean	Departure*		
January	0.12	-0.52	27	5		29
February	1.73	1.02	28	2		28
March	0.81	-1.21	54	16		9
April	2.91	-0.61	55	5		2
May	6.25	1.94	66	5	1	
June	3.69	-1.30	74	3	4	
July	0.98	-3.20	80	5	22	
August	2.23	-1.40	72	-1	12	
September	0.59	-2.35	63	-1	5	
October	2.35	0.01	48	-4		15
November	1.14	-0.31	40	3		13
December	1.11	0.20	26	2		31
Total	20.75	-10.78	n/a	n/a	44	127

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

Table 2. Monthly growing degree day units (GDD base 50) for the 2012 growing season April 1 to September 30.

	GDD monthly		GDD accumulation	
	Total	Departure*	Total	Departure*
April	155	-42	155	-42
May	467	82	622	40
June	647	63	1,269	103
July	955	242	2,224	345
August	708	47	2,932	392
September	452	-11	3,384	381

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