

Farm and Weather Summary, Ag Engineering and Agronomy Farm

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Farm Comments

Field Days and Tours. Nine field days and events were held with approximately 650 visitors in attendance.

Developments. Construction of a biomass processing facility for Iowa State University research projects to assess energy potential for different crops continues with opening slated for summer of 2009.

Facilities. Addition of a new machinery storage and lab space area was completed to serve the Plant Pathology Department research projects.

New Projects. A Comparison of Biofuel Systems (COBS) experiment was started to research cropping systems that produce large quantities of biofuel feedstocks while protecting soil and water resources and increase the biodiversity of the Iowa landscape.

The 2008 crop year was the first of a 3- to 5-year biomass study done jointly by the USDA and ISU's Ag Engineering Department. Leaders of the project were Stuart Birrell, ISU Agricultural Engineering Department, and Doug Karlen, USDA Soil Tilth Lab. The project involved harvesting biomass from continuous corn at different levels of residue removal. Harvest is done with a modified 9750STS John Deere combine. Residue is collected in special forage wagons equipped with load cells to measure the amount of crop residue removed. Three levels of removal are being studied: 0 percent, which is grain only; 50 percent, which is the ear and everything above it; and 100 percent, which is as low as the machine can safely operate. The field consists of 24 acres,

and in addition to grain and stover yields, fertility, soil erosion, and residue cover after harvest will be measured. There are also cover crop plots established in this field.

Crop Season Comments

Oat seeding started April 16 and was completed May 1. Harvest began in mid-July, with yields of 65 to 85 bushel/acre.

Corn planting started April 30 and was completed May 22. Harvest began October 1 and was completed November 26. Yields were good to average with a range of 135–200 bushels/acre.

Soybean planting began May 6 and was completed June 24. Harvest began October 2 and was completed November 18. Average yields were 35–55 bushels/acre.

Weather Comments

Winter. A total snowfall of 24.8 in. was recorded with a total moisture equivalent of 1.64 in.

Spring. A total of 23.96 in. of rainfall was recorded. This was approximately 10 in. above normal. The last frost date was April 29. Soil temperatures at the 4-in. depth began to average 50°F on April 20, cooled somewhat near the end of the month, until maintaining 50°F starting on May 2.

Summer. A total of 15.86 in. of rain fell during the summer months, with 9.28 in. during July. Rainfall totals from April–July were 16.82 in. above normal.

Fall. A total of 8.48 in. of rain was recorded with the first snowfall on November 22. The first frost date was October 21, and the first

killing frost was October 22. Total precipitation for the calendar year 2008 was 49.94 in., which was 18.09 in. above normal.

As indicated in Table 1, it was also a cooler than normal year, with some of the growing months below normal for average temperature.

Table 1. Monthly rainfall and average temperatures during the 2008 growing season at the Ag Engineering/Agronomy Research Farm, Boone, IA.

Month	Rainfall (in.)		Temperature (°F)		Days 90°F or above
	2008	Deviation from normal	2008	Deviation from normal	
March	2.71	0.64	34	-2	
April	5.22	2.06	47	-3	
May	8.49	4.00	60	-1	
June	10.68	4.91	70	0	
July	9.28	5.85	74	0	2
August	2.10	-1.53	70	-2	2
September	3.09	-0.19	64	0	
October	<u>3.63</u>	<u>1.44</u>	53	1	
Totals	45.2	17.18			