

2010

Ag Engineering/Agronomy Farm and Central Iowa Farms Summary

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Ag Engineering/Agronomy Farm and Central Iowa Farms Summary

Abstract

Contains:

Ag Engineering and Agronomy Farm Farm and Weather Summary

Central Iowa Farms Farm and Weather Summary

Project List

Keywords

RFR A9128, Agronomy, Agricultural and Biosystems Engineering

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Bioresource and Agricultural Engineering

Ag Engineering/Agronomy Farm and Central Iowa Farms Summary

RFR-A9128

Farms Staff

Ag Engineering/Agronomy Farm

Manager, Agronomy Farm.....Mike Fiscus
 Manager, Isolation Plots Dave Starrett
 Manager, Ag Engineering Farm Richard VanDePol
 Manager, Operations..... Will Emley

Farm Equipment Mechanic.....Jeff Erb
 Farm Equipment Mechanic.....Paul Weigel
 Farm Equipment Operator Dan Crosman
 Farm Equipment Operator Dale Niedermann
 Farm Equipment Operator John Reinhart

Central Iowa Farms

Superintendent Kent Berns

Research Farms Coordinator..... Mark Honeyman
 Farms Manager Dennis Shannon
 32 Curtiss Hall
 Iowa State University

Ag Engineering/Agronomy Research Farm
 1308 U Avenue
 Boone, IA 50036

515-432-5350 Ag Engineering office phone
 515-432-5348 Agronomy office phone

Location: West of Ames on Highway 30, across from the United Community School

Central Iowa Research Farms
 in Story, Boone, and Polk counties
 32 Curtiss Hall
 Iowa State University
 Ames, IA 50011-1050
 515-294-6103

Ag Engineering and Agronomy Farm Farm and Weather Summary

Mike Fiscus, ag specialist
Dave Starrett, ag specialist
Richard VanDePol, ag specialist

and was completed December 2. Yields were good to average with a range of 150–225 bushels/acre.

Farm Comments

Field days and tours. One crop field day was held with 40 people in attendance. Total visitors for the year were 190 for various tours and meeting events.

Developments. The new BioCentury Research Farm opened in the fall of 2009. Ag Engineering/Agronomy (AEA) Farm responsibilities will include providing land needs and plot space to accommodate research activities for the new facility.

Facilities. A waterway restoration project at the newly purchased Bass Farm west of the AEA Farm was completed.

New projects. A corn residue removal study was started to measure carbon sequestration rates in no-till and conventional tilling methods with varying nitrogen rates in a continuous corn rotation. Mahdi Al-Kaisi, Antonio Mallarino, and John Sawyer are the principal investigators for this three-year project.

Crop Season Comments

Oat seeding started April 2 and was completed April 15. Harvest began in mid-July, with yields of 65 to 85 bushels/acre.

Corn planting started April 24 and was completed May 30. Harvest began October 1

Soybean planting began May 8 and was completed June 12. Harvest began October 2 and was completed November 20. Average yields were 45–65 bushels/acre.

Weather Comments

Winter. A total snowfall of 36.7 in. was recorded with a total moisture equivalent of 3.28 inches. Included in this total is 3.5 in. of snow in November 2008, and a 5.3 in. snowfall on April 5, 2009.

Spring. A total of 13.25 in. of rainfall was recorded. Measurable precipitation was recorded 14 out of the first 20 days of June. The last frost date was April 14. Soil temperatures at the 4-in. depth began to average 50°F on April 18, cooled somewhat for three days, then maintained 50°F starting on April 24.

Summer. A total of 8.79 in. of rain fell during the summer months.

Fall. A total of 10.44 in. of rain was recorded with the first snowfall on December 7. In October, 7.33 in. of rain was recorded, hampering harvest activities. The first frost date was October 7, and the first killing frost was October 10. Total precipitation for the calendar year was 36.94 in., which was 5.09 in. above normal.

Table 1. Monthly rainfall and average temperatures during the 2009 growing season at the Ag Engineering/Agronomy Research Farm, Boone, IA.

Month	Rainfall (in.)		Temperature (°F)		Days 90°F or above
	2009	Deviation from normal	2009	Deviation from normal	
March	4.07	2.27	38	2	0
April	4.56	1.38	48	-2	0
May	3.78	-0.38	60	-1	0
June	4.11	-0.65	70	0	2
July	2.75	-0.93	69	-5	0
August	4.84	0.97	70	-2	1
September	0.96	-2.61	64	0	0
October	<u>7.33</u>	<u>4.91</u>	46	-6	<u>0</u>
Totals	32.4	4.96			3

Central Iowa Farms Farm and Weather Summary

Kent Berns, superintendent

Farm Comments

The ISU Central Iowa Farms consist of farmland in Story, Boone, and Marshall counties. There were 1,930 crop acres farmed by local farmers as custom operators. These acres are used for large-scale research, equipment testing, silage production, and manure application. Small-scale plots covered 63 acres. The student-managed Ag 450 Farm rented 285 acres, of which 103 acres were 50/50 sharecropped. The Ag 450 farm also is hired to perform custom farm work on Central Iowa Farms. The total crop area was 2,278 acres.

The majority of the Rhodes Farm is rented to a private farmer, but the university has retained a portion of the farm for long-term grazing research projects. Fall calving cows from the ISU McNay Research Farm were grazed on the retained portion of the Rhodes Farm. Seventy-five cows produced 72 live calves.

Highlights. A remote sensing project continues on 177 acres south of Ames. A strip till vs. conventional tillage corn following corn study was conducted at the Finch Farm. A rodent population dispersion study was conducted at the Anderson/Dyas Prairie. A 20-acre switchgrass study was established by interseeding switchgrass into corn. A large biomass harvesting systems study was conducted on 285 acres. The project will continue in 2010. More tile repairs and

improvements were made on the Dairy and Been Farms. A pair of trumpeter swans successfully nested on a restored wetland at the Kelley farm. Six cygnets were produced. Wild trumpeter swans had not successfully nested in the Story/Boone County area since the 1800s.

Crop Season Comments

The growing season was wet and cold in 2009. Planting was delayed, crops were lost to ponding, and many farm roads, tiles, and culverts were damaged from flooding.

Corn planting began on April 29 and was completed on May 12. Corn silage yields ranged from 22–29 tons/acre at 61% to 70% moisture. Corn silage was harvested on 315 acres. Corn grain yields averaged 194 bushels/acre and ranged from 145 to 230 bushels/acre.

Soybean planting began on May 14 and was completed on May 21. An outbreak of soybean aphids required spraying in mid to late July. Yields ranged from 51 to 71 bushels/acre with an average of 60.4 bushels/acre. Fall harvesting of corn and soybeans began on September 28 and was completed on December 5.

Weather Comments

The Ag Engineering/Agronomy Farm weather summary (Table 1, page 3) represents the weather data for all of the farms in central Iowa covered by this report.

Project List

<u>Project-Agronomy Farm, Mobile Unit</u>	<u>Farm Location</u>	<u>Project Leader</u>
Corn isolation plot	AnS Teaching	E. Vollbrecht
Corn isolation plot	AnS Teaching	K. Lamkey
Corn isolation plot	Beach Bottom	M. Blanco
Corn isolation plot	Beef Nutrition	K. Lamkey
Corn isolation plot	Bennett	T. Peterson
Corn isolation plot	Bennett	L. Pollak
Corn and soybean herbicide research	Curtiss	M. Owen
Corn foliar diseases	Curtiss	A. Robertson
Corn isolation plot	Curtiss	T. Peterson
Genetics corn nursery	Curtiss	P. Becraft
Genetics corn nursery	Curtiss	M. James
Genetics corn nursery	Curtiss	R. Wise
Genetics corn nursery	Curtiss	T. Peterson
Genetics corn nursery	Curtiss	Plant Trans. Facility
Genetics corn nursery	Curtiss	P. Schnable
Genetics corn nursery	Curtiss	E. Vollbrecht
Iowa corn yield test	Curtiss	J. Rouse
Soybean aphid study	Curtiss	M. O'Neal
Soybean breeding	Curtiss	S. Cianzio
Soybean disease study	Curtiss	X.B. Yang
Soybean foliar diseases	Curtiss	A. Robertson
Soybean growout	Curtiss	Iowa Crop Improvement
Corn breeding nursery	Hinds	L. Pollak
Corn diseases studies	Hinds	A. Robertson
Miscanthus nursery	Hinds	E. Heaton
Soybean breeding	Hinds	S. Cianzio
Soybean disease microplots	Hinds	G. Munkvold
Soybean diseases	Hinds	L. Leandro
Soybean diseases	Hinds	X.B. Yang
Soybean production	Hinds	R. Mullen
Soybean SCN study	Hinds	G. Tylka
Bean leaf beetle studies	Johnson	E. Hodgson
Corn borer studies	Johnson	R. Hellmich
Corn diseases	Johnson	G. Munkvold
Corn foliar diseases	Johnson	A. Robertson
Corn growout	Johnson	Iowa Crop Improvement
Corn isolation plot	Johnson	K. Lamkey
Corn root degradation	Johnson	P. Schnable
Rootworm and seed corn maggot studies	Johnson	A. Gassman
Soybean aphid studies	Johnson	M. O'Neal
Soybean production	Johnson	P. Pedersen
Wheat foliar disease studies	Johnson	F. Nutter
Corn isolation plot	Old Dairy	P. Schnable
Corn isolation plot	Old Dairy	E. Vollbrecht

Project List (continued)

<u>Project-Agron Farm, Mobile Unit (cont'd)</u>	<u>Farm Location</u>	<u>Project Leader</u>
Corn isolation plot	Packer	T. Peterson
Corn isolation plot	Packer	P. Schnable
Corn fertility study	Sorenson	J. Sawyer
Forages/biomass research	Sorenson	K. Moore
Relay cropping	Sorenson	M. Wiedenhoef
Corn isolation plot	Vet Med	T. Peterson
Corn isolation plots	Vet Med	J. Edwards
Soil fertility	West Curtiss	R. Killorn
Weed research	West Curtiss	R. Hartzler
Weed research	West Curtiss	M. Owen
Corn diseases	Woodruff	G. Munkvold
Corn foliar diseases	Woodruff	A. Robertson
Corn isolation plot	Woodruff	M. Blanco
Cyst nematode control studies	Woodruff	G. Tylka
Transgenic corn isolation nursery	Woodruff	P. Becraft
Transgenic corn isolation nursery	Woodruff	T. Peterson
Transgenic corn isolation nursery	Woodruff	M. James
Transgenic corn isolation nursery	Woodruff	P. Scott
<u>Project-Agronomy Farm</u>	<u>Department</u>	<u>Project Leader</u>
Alternative biomass cropping systems	Ag Engr/Agronomy	K. Moore/L. Schulte
Biomass research-corn production	Ag/Biosystems Engr	S. Birrell
Biomass/Miscanthus Research	Agronomy	E. Heaton
Comparison of biofuel systems (COBS)	Ag Engr/Agronomy	M. Liebman/M. Helmers
Corn breeding	Agronomy	K. Lamkey
Corn breeding	Agronomy	L. Pollak
Corn breeding	Agronomy	M. Lee
Corn breeding	Agronomy	J. Edwards
Corn breeding	Agronomy	P. Scott
Corn rootworm research	USDA	L. Lewis
Corn/soybean cover crop research	Agronomy	J. Sawyer
Corn stover residue removal study	Agronomy	M. Al-Kaisi/J. Sawyer
ISU Extension corn management research	Agronomy	R. Elmore
Long term nitrogen trials	Agronomy	J. Sawyer
Long-term continuous corn tillage study	Agronomy	M. Al-Kaisi
Long-term tillage study	Agronomy	M. Al-Kaisi
Maize genetics breeding	Agronomy	P. Peterson
Organic corn breeding	Agronomy	L. Pollak
Organic cover crop research	Agronomy	K. Delate
Small grains research	Agronomy	G. Patrick
Soil fertility	Agronomy	A. Mallarino
Sorghum breeding	Agronomy	M. Salas-Fernandez
Soybean and corn emergence trials	Seed Science	S. Goggi
Soybean breeding	USDA	R. Palmer

Project List (continued)

Project-Agronomy Farm (continued)

	<u>Department</u>	<u>Project Leader</u>
Soybean breeding	Agronomy	W. Fehr
Soybean cyst nematode trials	Plant Pathology	G. Tylka/S. Cianzio
Soybean disease research	Plant Pathology	L. Leandro
Soybean extension research	Agronomy	P. Pedersen
Soybean iron chlorosis plots	ICIA	J. Rouse
Soybean/corn disease research	Plant Pathology	G. Munkvold
Sustainable ag cropping systems	Agronomy	M. Liebman
Sustainable biomass crop production	Agronomy	M. Liebman

Project-Central Iowa

	<u>Farm Location</u>	<u>Project Leader</u>
Biomass-corn stover	Dairy/Johnson	M. Darr
Biomass-switchgrass	S. Woodruff	E. Heaton
Corn borer moth trapping	Dairy	R. Ritland
Corn yield trial	Bennett	J. Edwards
Herbicide evaluation	Rhodes	Dow Agrosiences
IDC soybean screening	S. Woodruff	G. Gebhart/G. Tylka
Poplar trials/forestry breeding	Moore Bottom	R. Hall
Remote sensing	Been	B. Hornbuckle
Riparian grazing	Rhodes	J. Russell
Rodent survey	Anderson/Dyas Prairie	B. Danielson
SCN resistant soybean breeding	S. Woodruff	G. Gebhart/G. Tylka
Soybean yield trial	Bennett	P. Pedersen
Strip tillage	Finch	M. Wuebker
Tile water study, nitrogen stabilizer study	Kelley	R. Hartwig

Projects on site, Ag Engineering

	<u>Project Leader</u>
Ag drainage well	M. Helmers
Bio composting	T. Glanville
Biomass harvesting	S. Birrell/John Deere
COBS project-Reynoldson Farm	M. Helmers/M. Thompson/M. Liebman
Manure/water quality	M. Helmers/R. Kanwar
Random tillages	M. Hanna
Soil nutrient/biomass harvest	S. Birrell/D. Karlin/USDA
Teaching	R. Kanwar
Till hydrology	R. Kanwar
USDA projects	M. Burkart
USDA/plant physiology	T. Kaspar
Weed science/Roundup resistance	M. Owen
Wetlands/water quality	M. Helmers/R. Kanwar