

Western Research Farm Summary

RFR-A1772

**Western Iowa Experimental Farm Association
Founded 1946**

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Vice Chairperson	Linda Herman, Pisgah
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Western Research Farm

Superintendent	Chris Beedle
Associate Dean for Operations	Mark Honeyman
Farms Manager	Tim Goode
	103 Curtiss Hall
	513 Farm House Lane, ISU

Farm and Weather Summary

Chris Beedle, farm superintendent

Farm Comments

Developments. Equipment changes during 2017 included purchases of a used John Deere 4455 tractor, Arts Way 6140 Grinder Mixer, and a Bobcat S-185 skid loader. The John Deere 4455 tractor is 140 hp with two remote hydraulic hook-ups. Additional remote hydraulics will be added and the tractor will be used for planting, manure hauling, grain hauling, and other miscellaneous field work. The Arts Way 6140 Grinder/Mixer was purchased to replace the 30-yr-old Gehl 135. The 6140 will be used for grinding pig/cattle feed in future research studies. The Bobcat S-185 was purchased to replace the 30-yr-old New Holland L-445. The S-185 will be very useful for day-to-day activities and projects.

Numerous general farm maintenance activities occurred. Repairs to the cattle feed lot continued. New five-strand high tensile barbed wire fence was completed around the new cover crop grazing study. Terrace cleaning and several dirt leveling projects also were completed.

Summer intern. Caleb Clemon, Soldier, Iowa, did a summer internship at the farm. Caleb will be a student at Iowa State University pursuing his B.S. in agricultural business. He helped with the day-to-day activities at the farm, including gathering data in several projects hosted at the farm.

Labor. Gary Zima, Onawa, Iowa, assisted with daily activities. Gary played a key role in data collection of the Monarch butterfly/pollinator project.

Harry Riesberg, Castana, Iowa, continues year-round assistance and performs many tasks vital to the operation of the farm.

A special thanks to Caleb, Gary, and Harry.

Field days and tours. Four events were held during the year, with a total of 362 people visiting the farm or attending a meeting. The annual meeting and crop update meeting both were held in late March. A beef quality assurance program was hosted at the farm for area producers. Finally, the Monona County Extension special swine project for youth was held in June.

New projects. A cover crop grazing study officially started in the spring of 2017, with calves being turned out for 20 days. A new pig project began feeding antibiotic-free pigs a low protein diet to influence intramuscular fat. Other project developments included completing eight On-Farm cooperator trials.

Livestock. Livestock production in 2017 included a group of 39 heifers in the cover crop grazing study pastured during the summer and then shipped to the Allee farm for finishing. These heifers were part of the McNay Research Farm beef cattle breeding project.

Swine production consisted of finishing 350 head to complete a project. The pigs were weighed every 28 days and ultra-sounded for muscle and fat deposition several times. Loins were collected for further testing with assistance from Tyson Fresh Meats, Storm Lake. A new project began with 450 head that were finished and weighed every 28 days. Following final weigh day, data were collected at the processing plant. The pigs were marketed for a niche pork market.

Crop Season Comments

Corn planting started May 25 and was completed May 26. Corn harvest started November 8 and was completed November 10, with an average yield of 200 bushels/acre. Soybeans were planted between June 2 and

June 3. Soybean harvest started October 26 and was completed October 27, with an average yield of 48 bushels/acre. These corn and soybean yields were 2.4 percent and 17 percent, respectively, above 5-yr farm averages. Alfalfa yields averaged 5.32 tons/acre with two cuttings harvested and were 0.17 ton/acre below the 5-yr farm average.

The year began with above normal temperatures in January and February, and near normal temperature in March and April. May was only one of two months below normal temperatures for the year. (Table 1).

A relatively wet late April and May delayed planting. June and July were unseasonably warm and dry, with 2.04 and 1.23 in. of rain, respectively, and 12 days above 90°F. Most of

the state was unseasonably dry for June and July. Relief came in late July through September with wetter conditions and good growing conditions for the area.

A long growing season allowed crops to reach full maturity (Table 2). October started out wet and changed to a dry and warm late October and November, allowing crops to dry down naturally. October and November had many favorable days for harvest.

Acknowledgements

We would like to thank all members, sustaining members, and donors who support the Western Research and Demonstration Farm through donations of time, money, and products. Their support has made many of this year's trials possible.

Sustaining Members

Community Bank, Dunlap
First State Bank, Mapleton
Sloan State Bank, Sloan and Whiting
Iowa-Nebraska State Bank, S. Sioux City
Valley Bank, Mapleton and Danbury
Western Iowa Power Cooperative
Soil and Water Conservation Districts of:
Crawford County
Harrison County
Monona County
Woodbury County

Donors

Morton Buildings, Inc.
Wyffels Hybrids, Inc. (Mike Lage)
Millborn Seed (Greg Jochum)

Research Farm Projects

<u>Project</u>	<u>Project Leader</u>
Effects of dietary protein on intramuscular fat of finishing pigs in bedded hoop barns	M. Honeyman/D. Stender
Monarch project/milkweed demonstration	R. Hellmich
Grazing cover crops with beef cattle	D. Loy/E. Lundy
Feeding pigs for niche pork market	M. Honeyman/P. Lammers/ C. Beedle
U.S. Weather Service weather station	
Air temps; hi, lo, current	
Soil temps; 1, 2, 8, 20, 40 in.	
Daily precipitation	
Severe weather spotter	
Iowa MesoNet weather station	
<i>(real time data online)</i>	
Air temperature	
Relative humidity	
Precipitation	
Wind: speed & direction	
Solar radiation	
Soil temperature	
Soil moisture	
Demonstrations:	
Manure settlement basin	
Composting livestock mortalities	
Composting hoop buildings manure pack	
Swine finishing in hoop buildings	
On-Farm Cooperator Trials	
<i>(see articles elsewhere in this report for details)</i>	
Corn population	
Fungicide	

Table 1. Monthly precipitation, average temperature, and departure from normal for 2017.

	<u>Precipitation</u>		<u>Temperature</u>		<u>Days 90°F or above</u>	<u>Nights 32°F or below</u>
	<u>Total</u>	<u>Departure*</u>	<u>Mean</u>	<u>Departure*</u>		
January	0.78	+0.17	23	+1.8		29
February	0.52	-0.12	33.5	+8.2		21
March	2.00	+0.36	38.1	+0.7		9
April	2.38	-0.99	50.4	+0.6		4
May	6.83	+2.31	59.1	-1.7		0
June	2.04	-2.87	72.1	+1.5	4	
July	1.23	-3.19	75.9	+1.9	12	
August	5.98	+1.73	68.9	-3.1	0	
September	3.47	+0.48	66.3	+2	1	
October	5.15	+3.05	52.5	+0.2		6
November	0.28	-1.14	37.4	-0.3		23
December	0.77	-0.23	25.6	+0.9		29
Total	31.43	-0.44	n/a	n/a	17	121

*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 2017 growing season April 1 to September 30.

	<u>GDD monthly</u>		<u>GDD accumulation</u>	
	<u>Total</u>	<u>Departure*</u>	<u>Total</u>	<u>Departure*</u>
April	169	+49	169	+49
May	320	-50	489	-1
June	657	+37	1,146	+36
July	808	+63	1,954	+99
August	594	-97	2,548	+2
September	497	+59	3,045	+61

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