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## Western Farm Research Summary

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# Western Research Farm Summary

RFR-A1595

Western Iowa Experimental Farm Association  
Founded 1946

## Officers

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## Western Research Farm

Chris Beedle .....	Superintendent
Mark Honeyman .....	Coordinator, Research Farms
Tim Goode .....	Manager, Research Farms
	103 Curtiss Hall, ISU
	Ames, IA 50011

## Farm Summary

Chris Beedle, farm superintendent

### Farm Comments

*Developments.* Equipment changes during 2015 included purchases of a used John Deere 7000 planter, used H&S 430 manure spreader, and a hanging crane scale. The planter is an 8-row planter with an upgraded monitoring system. The manure spreader is larger than the previous spreader and in better condition mechanically. The crane scale will be used for research in weighing feeders and many other uses.

Numerous general farm maintenance activities occurred. Some pressing maintenance concerns were addressed, such as multiple leaks in the water system, replacement of the lake pump after 24 years, roof repairs on the house, dirt work in fields, terrace construction, and removal of volunteer trees. Reconstruction of the retaining wall and cattle working facilities leading to the scale house was completed. Old equipment was sold at the ISU surplus equipment auction.

Wayne Roush, farm superintendent, retired in July. Wayne came to the Western Research Farm in 1989 as a lab technician. In 1990, he was named livestock research supervisor; in 1993, livestock research specialist; in 1995, co-superintendent; and in 2002, superintendent. The Western Research and Demonstration Farm would like to thank Wayne for 26 years of dedication to agricultural research.

Chris Beedle was named superintendent in July 2015.

*Field days and tours.* Only three events were held during the year, with a total of 127 people visiting the farm or attending a meeting. The Annual Meeting, Crop Update Informational meeting, and Manure

Applicator Certification Training were held in late February.

*New projects.* Two new projects started in 2015—the monarch butterfly habitat project and pigs fed a low-protein diet in deep-bedded hoops project. Other project developments were under the ISU On-Farm Cooperator Trials, which completed 3 of the 7 trials started in the spring of 2015.

*Livestock.* Livestock production in 2015 included a group of 52 steers and heifers pastured during the summer and then shipped to another farm for feeding. These steers and heifers were part of the McNay Research Farm beef cattle breeding trial.

Swine production consisted of finishing 672 head as part of a trial. 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 of Storm Lake.

### Crop Season Comments

At the farm, corn planting started April 30 and was completed May 3. Corn harvest started October 30 and was completed November 2, with an average yield of 209 bushels/acre. Soybeans were planted between May 4 and May 13. Soybean harvest started October 9 and was completed October 10, with an average yield of 57 bushels/acre. These corn and soybean yields were 12.3 percent and 3.3 percent, respectively, above 5-year farm averages. Alfalfa yields averaged 4.6 tons/acre with three cuttings harvested and were .4 ton/acre below the 5-year farm average.

The year began with cold weather during January, most of February, and the beginning of March. March brought a rapid warm-up and warmer than normal spring months (Table 1).

Recorded soil temperatures at the farm indicate soil thawed across western Iowa the first week of April.

The first quarter of 2015 was the driest since 1988. A dry and relatively warm spring allowed for field work and good planting conditions. Frequent rains during May got the growing season off to a good start.

Rain continued through the summer, making May through September the seventh wettest on record. Fortunately, the rain was evenly distributed through the growing season to minimize flooding. There were mild

temperatures during the growing season with only three days of above 90° F weather.

A long growing season allowed crops to reach full maturity (Table 2), and a dry and warm October allowed crops to dry down naturally. The first three weeks of October were ideal 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**

Berne Coop, Colby Weed

### 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
Documenting efficiencies of heavy weight market pigs in bedded hoop barns	M. Honeyman/D. Stender
Dominant grass effects on diversity and functioning of restored Grasslands	B. Wilsey
Effects of biochar and manure applications to prairie establishment	L. Biederman
Plasticity in native and exotic bunch grasses within low and high diversity prairie communities	K. Barber
National Phenology network study	M. Schwartz
Native cover crops: effects on prairie establishment and weed invasion	B. Wilsey
Plant species effects on diversity and weed invasion resistance in restored grasslands	B. Wilsey
Diesel fuel consumption during field operation(s) Planting corn Manure Spreading	M. Hanna
U.S. Weather Service weather station Air temps; hi, lo, current Soil temps; 1, 2, 8, 20, 40 in. Evaporation dish 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 foliar fertilizer Drought tolerance Fungicide	

**Table 1. Monthly precipitation, average temperature, and departure from normal for 2015.**

	<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	0.22	-0.39	22	+1		31
February	0.68	+0.01	16	-9		27
March	0.20	-1.57	39	+2		22
April	3.84	+0.39	51	+1		6
May	4.67	+0.23	59	-2		0
June	3.96	-0.97	70	0	1	
July	5.51	+0.95	72	-2	3	
August	7.62	+3.67	69	-3		
September	4.96	+1.93	67	+3		
October	1.17	-1.04	54	+2		2
November	3.66	+2.37	42	+5		17
December	3.53	+2.67	30	+6		27
<b>Total</b>	<b>40.02</b>	<b>+8.25</b>	<b>n/a</b>	<b>n/a</b>	<b>4</b>	<b>132</b>

\*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 2015 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	199	-7	199	-7
May	323	-71	522	-78
June	590	-12	1,112	-90
July	664	-60	1,776	-150
August	622	-46	2,398	-252
September	563	+110	2,961	-142

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