

# Northern Research Farm Summary

RFR-A1395

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Research Farm Superintendent .....	Micah Smidt
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Research and Demonstration Farms Manager .....	Tim Goode 103 Curtiss Hall
Ag Specialist .....	Matthew Schnabel (started 2/17/14)

## Farm and Weather Summary

Micah Smidt, farm superintendent

### Farm Comments

*Field Days and Tours.* Four field day events were held. A total of 219 people visited the farm in 2013. On November 1, David Rueber retired as superintendent after 36 years of service to Iowa State University. On December 1, Micah Smidt took over as superintendent.

*New Projects.* Nitrogen inhibitor applied to fertilizer, D. Barker; Cover crop mixes on corn and soybeans, E. Juchems; Ryegrass cover crop, NIRF; Fuel usage for different tillage practices, M. Hanna; Corn rootworm resistant events trial, NIRF.

### Crop Season Comments

Corn planting got a late start because of heavy rain events in the spring. Planting started on May 13 and was completed on May 24. Harvest began October 17 and finished on October 28 with average yields of 170–180 bushels/acre. Grain moistures were higher than the average of the past three years.

Soybean planting started May 14 and was completed June 7. Harvest began October 3 and finished October 11 with average yields of 40–50 bushels/acre.

Yields varied greatly depending on soil water supply. Crops in areas with sandy subsoil died prematurely. There also were multiple areas drowned out that needed to be replanted because of the wet spring.

### Weather Comments

*Winter.* At the start of 2013, the groundwater level was 14 ft. 9 in. below the soil surface due to the dry fall of 2012. Record snowfall of 9 in. fell on May 2.

*Spring.* The average temperature from March to May was cooler than average. The last hard spring frost was April 25 when the temperature fell to 26°F. We had the second wettest April in 64 years with 7.08 in. of precipitation (Figure 1).

*Summer.* A cooler-than-average temperature from May to July slowed the late-planted crops. After a wet spring, precipitation was below average from May to July (Table 1). There were five days in a row with temps over 90°F in July, but overall it was a cooler-than-average month. Most of the rain in June was on June 16 (1.02 in.). The largest rain event in July was 2.30 in. on July 26.

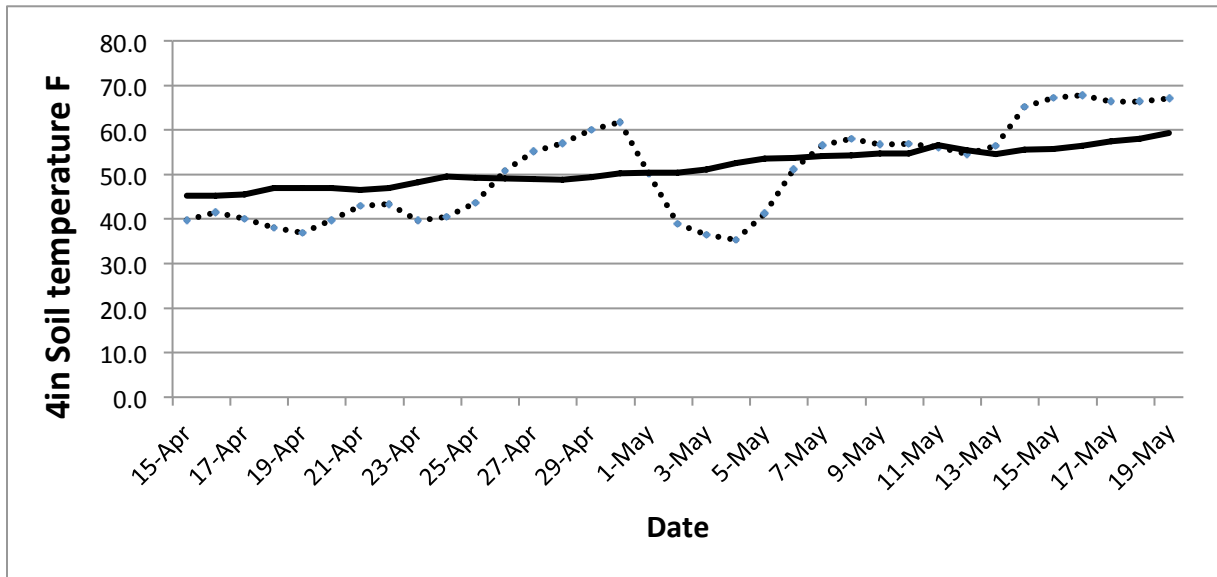
*Fall.* The first killing frost was October 13 when the temperature dropped to 28°F. By then most of the soybeans were mature and ready to harvest and most of the corn had black-layered. Fieldwork was completed by November 8. The frost layer was 1 in. below the soil surface on November 13. On December 18 the groundwater table was 9.3 ft below the soil surface.

### Acknowledgements

Thanks to Calcium Products, Inc., Farm Credit Services of America, Farmers Trust and Savings Bank, Gold-Eagle Cooperative, DuPont Pioneer, MaxYield Cooperative, North Central Cooperative, and Bruce Smidt for support of work at the farm.

**Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2013.**

Month	2013	Rainfall (in.)	Temperature (°F)		Days 90° or above
		Deviation from normal	2013	Deviation from normal	
March	2.63	.75	25.9	-8.7	0
April	7.08	3.84	42.7	-5.4	0
May	1.74	-2.20	57.6	-2.5	1
June	4.72	-0.19	68.8	-0.6	1
July	2.37	-1.62	72.7	-0.3	10
August	2.58	-1.12	70.5	0	4
September	0.87	-2.17	65.6	3.1	2
October	<u>2.12</u>	<u>0.03</u>	49.2	-1.2	<u>0</u>
Totals	24.11	-2.68			18



**Figure 1. Spring 4-in. soil temperature °F at the ISU Northern Research Farm.**

— 1982 to 2013 average.

..... 2013.

### Information on Experiments in Previous Annual Progress Reports

	Year
ISU FARM Network: North Central RFR-A1262.....	12
Elite Soybean Test-North RFR-A12100.....	12
Alternative Grass Variety Trial 2010-2012 RFR-A12102.....	12
Corn and Soybean Response to Sulfur Application Rate RFR-A1261.....	12
Evaluation of Foliar Fungicides and Insecticides on Soybeans in Northern Iowa <a href="#">RFR-A1239</a> .....	12
Use of Ground Eggshells as Liming Source RFR-A1290 .....	12
Seasonal and Rotational Influences on Corn Nitrogen Requirements RFR-A1192.....	11
Placement Methods of Phosphorus and Potassium for Corn and Soybean Managed with No-till and Chisel-plow/Disk Tillage RFR-A1196.....	11
Water Infiltration following Land Rolling of Soybeans RFR-A1188 .....	11
A Comparison of Soybean Seed Treatments RFR-A1189 .....	11
Yield of Corn, Soybean, and Oats as Affected by Long-term Crop Rotation and Nitrogen Fertilization of Corn RFR-A10107.....	10
Timing of Land Rolling for Soybeans RFR-A1097 .....	10
Pathotype Structure of <i>Phytophthora sojae</i> with Cultivar Rotation in Soybeans RFR-A1068 .....	10
Effects of Soybean Cyst Nematode Infestation and Resistance on Fusarium Root Rot on Soybeans RFR-A1098 .....	10
Comparing Yields of Soybean Varieties with Different Sources of SCN Resistance in Strip Trials RFR-A1066 .....	10
Phosphorus Fertilization Strategies for Alfalfa Hay Production followed by Corn Harvested for Grain RFR-A9108.....	09
Long-term Tillage and Crop Rotation Effects on Yield and Soil Carbon RFR-A9110.....	09
Soybean Rust Reaches Iowa RFR-A9028 .....	09

## Research Farm Projects

<b>Research Projects</b>	<b>Project Leader</b>
Alternative grass variety trial	S. Barnhart
Annual ryegrass varieties	NIRF*
Beef manure on low testing P soils	A. Mallarino
Corn rootworm resistant events trial	NIRF*
Corn stand thinning	R. Elmore
Corn population	R. Elmore
Corn rootworm control	NIRF*
Cover crop mixes	E. Juchems
Crop residue and K release	A. Mallarino
Crop rotation and N rates	A. Mallarino
Demonstration shrub row	C. Haynes
Early application of fungicide on corn	A. Robertson
Foliar application of micronutrients on corn and soybeans	A. Mallarino
Fungicide and insecticide applications on soybean	D. Mueller
Home demonstration garden	C. Haynes
Long-term K fertilizer for corn and soybean	A. Mallarino
Long-term P fertilizer for corn and soybean	NIRF*
Long-term tillage and crop rotation	M. Al-Kaisi
Micronutrient foliar applied fertilizer for corn	A. Mallarino
Micronutrient starter fertilizer for corn	A. Mallarino
P fertilizer for corn-alfalfa rotation	A. Mallarino
Placement methods for K for corn and soybean	A. Mallarino
Placement methods for P for corn and soybean	A. Mallarino
Populus breeding	R. Hall
Post-applied urea	J. Sawyer
Red clover persistence trial	NIRF*
Seasonal and rotational influence on corn N requirements	J. Sawyer
Soil-applied sulfur on corn and soybean	J. Sawyer
Soybean disease resistance breeding	S. Cianzio
Soybean SDS breeding	S. Cianzio
Specialty soybean test	W. Fehr
Tractor fuel usage	M. Hanna
Tree biomass production	J. Randall
USA national phenology network	M. Schwartz
Use of ground eggshells as a liming source	J. Holmes
Weed identification garden	NIRF*

\*Northern Iowa Research Farm