

# Northern Research Farm Summary

**RFR-A1761**

**North Central Iowa Research Association**

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 ..... 103 Curtiss Hall, 513 Farm House Lane, ISU

## Farm and Weather Summary

Matthew Schnabel, farm superintendent

### Farm Comments

*Field days and tours.* Five field day events were held in 2017 including the North Central Iowa Research Association annual meeting, a Youth UAV field day, summer field day, demonstration garden field day, and fall field day. A total of 505 people visited the farm.

*New projects.* Soybean aphid variety, E. Hodgson; Sulfur corn and soybean, J. Sawyer; Forecast and assessment of cropping systems, M. Licht and S. Archontoulis; Cereal rye for seed and nitrogen rate, J. Sawyer; Oat cover crop and compost effects on SDS in soybeans, S. Eggenberger; Soybean white mold, D. Mueller; Corn fungicide application methods and timing, D. Mueller; and Long-term cover crop and tillage in corn and soybean, M. Al-Kaisi.

### Crop Season Comments

Corn planting started April 17 and was completed June 20. Harvest began October 9 and finished November 13 with average yields of 210–250 bushels/acre. Grain moistures were slightly higher on average than past years. Grain test weight was average.

Soybean planting started April 24 and was completed June 2. Harvest was October 18 to October 26 with average yields of 50–60 bushels/acre.

Oats were drilled April 8 and 12, including the long-term nitrogen rotation study and oat variety trial. Oats were harvested August 8. Yields averaged between 60–80 bushels/acre with good test weight and average moisture.

Farm yields were consistently high with slightly above average moisture and good test weights this year. Unlike a typical growing

season, no drowned-out spots developed or needed replanting in 2017.

### Weather Comments

*Winter.* At the start of 2017, the groundwater level was about normal. The winter started warmer than usual as January averaged 21.2°F and February 30.5°F. March was cooler than normal with temperatures averaging 32.2°F. January and February precipitation was above normal and March was average. Frost penetrated to 12 in. below the soil surface. The frost line thawed mid-March.

*Spring.* March and May were cooler than average while April was slightly warmer. Precipitation was below average from March through May by about 1 in. total. A majority of the corn was planted early May, and most soybeans were planted around mid-May. All spring field operations were completed slightly later than in recent years.

*Summer.* June was warmer than normal, and July and August were cool. We had a dry spell in early June and again in mid-July. Precipitation was above average in June and August while July was lower than normal. The farm received hail June 22, July 4, and August 27. In all three incidences, the hail was dime-sized, and defoliation was the only damage to crops.

*Fall.* The first hard frost was October 28 when the temperature dropped to 24°F. By then the soybeans were harvested. Cover crops were drilled October 20. A majority of the corn had reached maturity in late September or early October. Fertilizer application ended November 14. Tillage was completed by December 2.

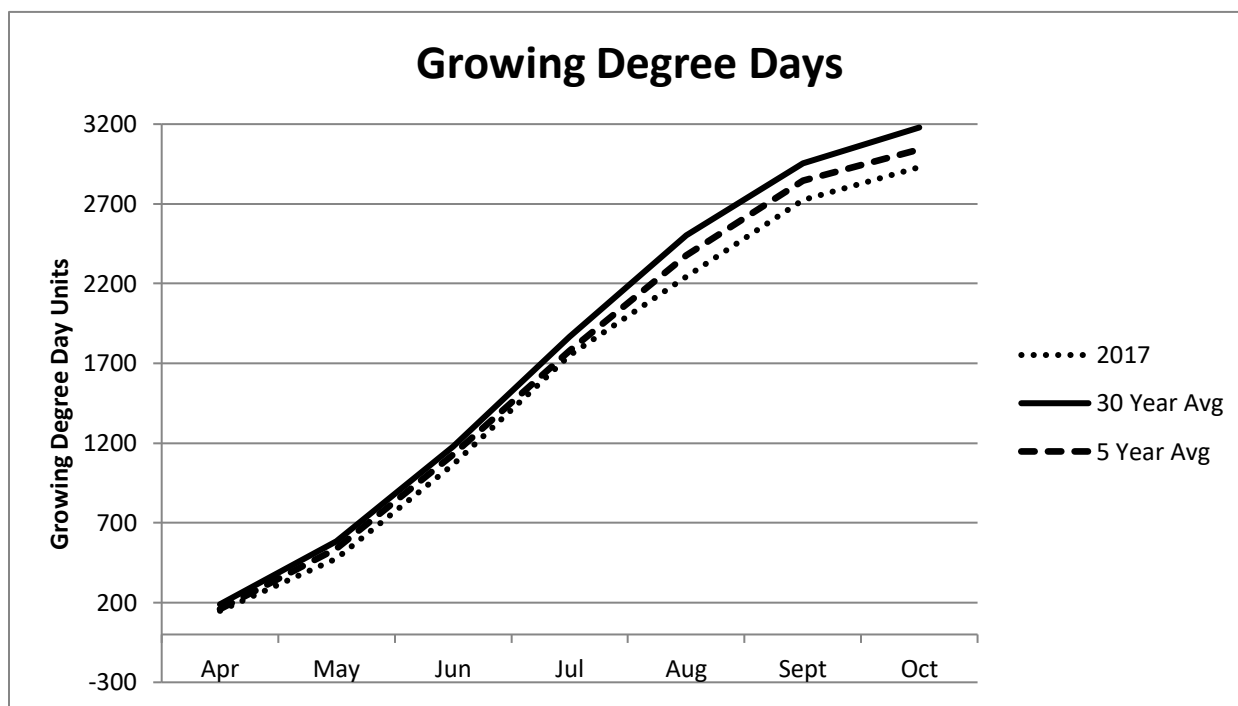
### Acknowledgements

Calcium Products, Inc.	Beck’s Hybrids
Gold-Eagle Cooperative	Stine Seed Company
MaxYield Cooperative	Wyffels Hybrids
North Central Cooperative	Potash Corp.
First Citizens National Bank	Lester Schnabel
Kanawha Equipment	Titan Machinery
Albert Lea Seed	

**Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2017.**

Month	Rainfall (in.)		Temperature (°F)		Days 90° or above
	2017	Deviation from normal*	2017	Deviation from normal*	
March	1.84	-0.02	39.7	5.2	0
April	3.16	-0.10	48.3	0.3	0
May	3.18	-0.80	58.5	-1.5	0
June	6.04	1.08	71.0	1.6	6
July	3.06	-0.97	71.0	-1.9	2
August	7.80	4.03	69.1	-1.3	0
September	2.12	-1.06	65.8	3.3	3
October	<u>5.12</u>	<u>3.05</u>	52.9	2.5	<u>0</u>
Totals	32.32	5.21			11

\*Rainfall and temperature normal is calculated based on data from 1949–2016.



**Figure 1. Growing degree days for 2017 at the ISU Northern Research and Demonstration Farm, Kanawha, IA.**

### Information on Experiments in Previous Annual Progress Reports

	Year
Corn Date of Planting and Maturity RFR-A16109 .....	16
Seasonal and Rotational Influences on Corn Nitrogen Fertilization in Northern Iowa RFR-A1670 .....	16
Corn Population and Nitrogen Trial RFR-A16121 .....	16
Corn Yield Response to Nitrogen Fertilizer Application Timing in Northern Iowa RFR-A16108 .....	16
Continuous Corn Response to Nitrogen and Potassium in Northern Iowa RFR-A1697 .....	16
Soybean Date of Planting and Maturity in Northern Iowa RFR-A16110 .....	16
Establishment of Perennial Groundcovers for Maize-Based Bioenergy Production Systems RFR-A16122 .....	16
Long-Term Tillage and Crop Rotation Effects on Yield and Soil Carbon in Northern Iowa RFR-A1637 .....	16
Effectiveness of Foliar Fungicides by Timing on Northern Leaf Blight on Hybrid Corn in Northern Iowa RFR-A16120 .....	16
Evaluation of Foliar Fungicides on Soybeans in Northern Iowa RFR-A1651 .....	16
Monarch Oviposition and Larval Survival on Nine Native Milkweed Species During the 2016 Breeding Season RFR-A1611 .....	16

## Research Farm Projects

Research Projects	Project Leader
Aphid suction trap	E. Hodgson
Automated weather station	E. Taylor
Cereal rye for seed and nitrogen rate	J. Sawyer
Corn fungicide application methods and timing	D. Mueller
Corn hybrids by N and K fertility	A. Mallarino
Corn maturity and kernel dry weight loss	M. Licht
Cover crop mixes on corn and soybean	E. Juchems
Cover crop SCN in corn and soybeans	G. Tyka
Crop residue and K release	A. Mallarino
Crop rotation and N rates	A. Mallarino
Demonstration shrub row	C. Haynes
Early and late application of fungicide on corn	A. Robertson
Forecast and assessment of cropping systems	M. Licht
Forms of sulfur in corn and soybeans	J. Sawyer
Fungicide and insecticide applications on soybean	D. Mueller
Fungicide application and standability in corn	A. Robertson
Home demonstration garden	C. Haynes
Long-term cover crop and tillage for corn and soybeans	M. Al-Kaisi
Long-term K fertilizer for corn and soybean	A. Mallarino
Long-term tillage and crop rotation	M. Al-Kaisi
Milkweed demonstration garden	R. Hellmich
Neonicotinoid seed treatment soybeans	D. Mueller
Oat cover crop and compost effects on SDS in soybeans	S. Eggenberger
Oat variety trial	PFI*
Placement methods for K for corn and soybean	A. Mallarino
Placement methods for P for corn and soybean	A. Mallarino
Planting date for corn and soybean	M. Licht
Seasonal and rotational influence on corn N requirements	J. Sawyer
Seeding population and nitrogen rate in corn	M. Licht/NRF**
Soybean aphid and variety	E. Hodgson
Soybean disease resistance breeding	S. Cianzio
Soybean SDS breeding	S. Cianzio
USA national phenology network	M. Schwartz
Weed identification garden	NRF**
White mold in soybeans	D. Mueller

\*Practical Farmers of Iowa

\*\*Northern Research Farm