

Northern Research Farm Summary

RFR-A1875

North Central Iowa Research Association

Executive Board

President.....	Dennis Schwab
Vice President	Aaron Thompson
Secretary	Mervin Krauss
Treasurer	Paul Christians

Directors

Harley Kreitlow
Dennis Schwab
Mervin Krauss
Paul Christians
Ronald Christians
Cliff Howlett
Donald Latham
Aaron Thompson
George Guenther
Bill Drury

Iowa State University Staff

Research Farm Superintendent	Matthew Schnabel
Ag Specialist	Brandon Zwiefel
Associate Dean for Operations	Mark Honeyman
Farms Manager	Tim Goode

103 Curtiss Hall, 513 Farm House Lane, ISU

Farm and Weather Summary

Matthew Schnabel, farm superintendent

Farm Comments

Field days and tours. Four field day events were held in 2018 including the North Central Iowa Research Association annual meeting, summer field day, demonstration garden field day, and fall field day. A total of 530 people visited the farm.

New projects. Corn predictive model fungicide application, D. Mueller; Soybean white mold study, D. Mueller; Cereal rye variety trial; Long-term cover crop and tillage in corn and soybean, M. Al-Kaisi.

Crop Season Comments

Oats were drilled April 30 and May 1, including the long-term nitrogen rotation study and oat variety trial. Oats were harvested August 14 and 23. Yields averaged between 40 to 50 bushels/acre with average test weight and moisture.

Corn planting started May 8 and was completed June 13. Harvest began September 28 and finished November 9 with average yields of 160 to 200 bushels/acre. Grain moistures were slightly higher on average than past years. Grain test weight was average.

Soybean planting started May 19 and was completed July 2. Harvest was October 22 to October 30 with average yields of 40 to 50 bushels/acre.

Farm yields were lower than average with slightly above normal moisture and average test weights this year.

Weather Comments

Winter. At the start of 2018, the groundwater level was normal. The winter started colder than usual as January averaged 14.8°F,

February 15.4°F, and March 30.7°F, all well below long-term averages. January and February precipitation was above normal and March was slightly below. Frost penetrated to 12 in. below the soil surface.

Spring. April temperatures were well below normal averaging 35.7°F compared with the long-term normal of 48.0°F. The average temperature for May was 65.3°F, which is more than 5°F above the long-term normal. Precipitation was slightly more than normal in April, however snow for the month was much higher than normal with 18 in. of snow. In May, 3.87 in. more precipitation was received than normal, delaying spring field work. The majority of the corn and soybeans were planted mid-May to early June.

Summer. June was warmer than normal, and July and August were cool. Precipitation was 5.9 in. above average in June. July and August combined to measure 5.15 in. of precipitation more than the normal amount. The farm received hail and high winds July 25 and August 28. Dime to quarter-sized hail fell, and defoliation was the only damage to crops.

Fall. The first hard frost was October 12 when the temperature dropped to 25.5°F. Cover crops were drilled October 24–31. A majority of the corn had reached maturity mid-to-late September. Fertilizer application ended November 15. Tillage was completed by November 26.

Overall, 52.9 in. of precipitation was measured for the year, making 2018 the wettest year on record for the Northern Research Farm.

Acknowledgements

Calcium Products, Inc.	Beck’s Hybrids
Gold-Eagle Cooperative	Wyffels Hybrids
MaxYield Cooperative	Potash Corp.
North Central Cooperative	Lester Schnabel
First Citizens National Bank	Titan Machinery
K.C. Nielsen Ltd., Kanawha	NuTech Seed
Albert Lea Seed	Prairie Hybrids
Monsanto–Climate Corp.	Nutrien Ag Solutions

Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2018.

Month	2018	Rainfall (in.)	Temperature (°F)		Days 90° or above
		Deviation from normal*	2018	Deviation from normal*	
March	1.52	-0.34	30.7	-3.9	0
April	4.00	0.74	35.7	-12.4	0
May	7.84	3.87	65.3	5.3	5
June	10.84	5.86	72.3	2.9	6
July	5.24	1.23	71.4	-1.4	2
August	7.75	3.92	70.1	-0.3	0
September	7.29	4.13	64.2	1.6	4
October	<u>3.71</u>	<u>1.59</u>	45.2	-5.2	<u>0</u>
Totals	48.19	21.00			17

*Rainfall and temperature normal is calculated based on data from 1949–2017.

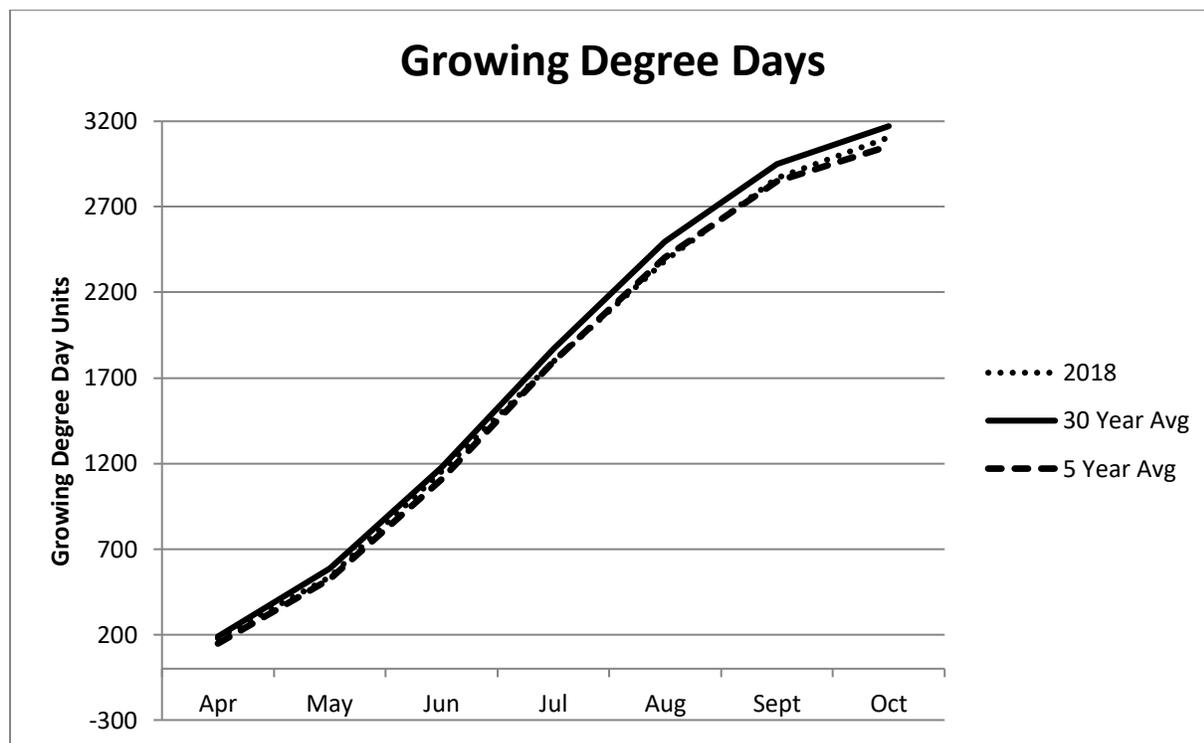


Figure 1. Growing degree days for 2018 at the ISU Northern Research and Demonstration Farm, Kanawha, IA.

Information on Experiments in Previous Annual Progress Reports

Demonstrating Cover Crop Mixtures on Iowa Farmland:	Year
Management, Soil Health, and Water Quality Benefits RFR-A1759.....	17
Corn Population and Nitrogen Trial RFR-A1773.....	17
Long-Term Corn Response to Nitrogen and Potassium in Northern Iowa RFR-A1797	17
Long-Term Tillage and Crop Rotation Effect on Yield and Soil Carbon in Northern Iowa RFR-A1782	17
Evaluation of Foliar Fungicides on Soybeans in Northern Iowa RFR-A17101	17
ISU On-Farm Cooperator Demonstration Trials:	
Relationships and Partnerships–2017 RFR-A1751	17
On-Farm Corn and Soybean Management Demonstration Trials RFR-A1760.....	17
On-Farm Corn and Soybean Variety Demonstration Trials RFR-A1746	17
On-Farm Sulfur Fertilization of Alfalfa and Corn Demonstration Trials RFR-A1732	17
On-Farm Corn and Soybean Planter Demonstration Trials RFR-A1745	17
Monarch Oviposition and Larval Survival on Nine Native Milkweed Species RFR-A1727	17
2017 Home Demonstration Garden RFR-A1741	17

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
White mold in soybeans	D. Mueller
Cover crop mixes on corn and soybean	E. Juchems
Cover crop SCN in corn and soybeans	G. Tylka
K side dress application in corn and soybeans	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
Soybean seed treatment and planting date	M. Smidt
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
Cereal rye variety trial	PFI*
Soybean breeding	D. Singh
Soybean disease resistance breeding	S. Cianzio
Soybean SDS breeding	S. Cianzio
Corn rootworm trait and insecticide	NRF**
Weed identification garden	NRF**

*Practical Farmers of Iowa

**Northern Research Farm