

Northern Research Farm Summary

RFR-A1958

North Central Iowa Research Association

Executive Board

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

Directors

Dennis Schwab	Doug Kreitlow
Mervin Krauss	Paul Christians
Ronald Christians	Cliff Howlett
Donald Latham	Aaron Thompson
George Guenther	Bill Drury
Andy Christensen	Greg Guenther
Mark Bausch	Doug Adams
Nathan Nedved	Blake Smith
Robert Plathe	Benji Fett

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 2019 including the North Central Iowa Research Association annual meeting, summer field day, demonstration garden field day, and fall field day. A total of 515 people visited the farm.

New projects. Soybean and cover crop IDC, S. Eggenberger; Soybean and cover crop SCN, S. Eggenberger; Cereal rye variety trial, PFI; Cover crop and N application timing in corn, M. Licht; Seed treatment SCN in soybean, S. Navi.

Crop Season Comments

Oats were drilled April 24 to 26, including the long-term nitrogen rotation study and oat variety trials. Oats were harvested August 2 to 5. Yields averaged between 60 to 90 bushels/acre with average test weight.

Corn planting started May 4 and was completed June 14. Harvest began October 15 and finished November 6 with average yields of 180 to 220 bushels/acre. Grain moistures were slightly higher on average compared with past years. Grain test weight was average.

Soybean planting started May 6 and was completed June 14. Harvest was October 8 to 30 with average yields of 55 to 65 bushels/acre.

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

Weather Comments

Winter. At the start of 2019, the groundwater level was above normal. The winter started colder than usual as January averaged 14.2°F, February 11.3°F, and March 27.7°F, all well

below long-term averages. In January, February, and March precipitation was above normal. Frost penetrated to 13 in. below the soil surface.

Spring. April temperatures were slightly below normal averaging 46.9°F compared with the long-term normal of 48.0°F. The average temperature for May was 55.3°F, which is about 5°F below the long-term normal. Precipitation was slightly more than normal in April. In May, 4.02 in. more precipitation was received than the average, delaying spring field work. Most of the corn and soybean were planted May to early June.

Summer. June was slightly cooler than normal, July was average, and August was about 4°F cooler than typical. Precipitation was average in June, July was above average, and August below average. The farm received pea-size hail and high winds June 17. There was little damage to crops and yields were not affected.

Fall. The first hard frost was October 14 when the temperature dropped to 23.9°F. Cover crops were over-seeded September 5 and drilled October 19 and 30. Most of the corn had reached maturity in late September or early October. Fertilizer application ended November 26. Tillage was completed December 9.

Overall, 45.1 in. of precipitation was measured for the year, making 2019 the third wettest year on record for the Northern Research Farm after 2018 (1) and 1965 (2).

During the growing season (March-October), every month had above-normal precipitation except August. May and October were particularly wet (Table 1). All months during the growing season were cooler than usual except September (Table 1). Growing Degree Days (GDD) lagged both the 30- and 5-yr average (Figure 1).

Acknowledgements

Calcium Products, Inc.	Beck’s Hybrids
Gold-Eagle Cooperative	Wyffels Hybrids
MaxYield Cooperative	Potash Corporation
North Central Cooperative	Salford Group
First Citizens National Bank	Titan Machinery
K.C. Nielsen Ltd., Kanawha	NuTech Seed
Albert Lea Seed	Pivot Bio
Bayer–Climate Field View	

Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2019.

Month	2019	<u>Rainfall (in.)</u>	<u>Temperature (°F)</u>		Days 90° or above
		Deviation from normal*	2019	Deviation from normal*	
March	2.26	0.41	27.7	-6.8	0
April	3.51	0.24	46.9	-0.9	0
May	7.88	3.86	55.3	-4.7	0
June	6.03	0.97	68.4	-1.1	2
July	5.61	1.58	72.8	0.1	1
August	2.08	-1.80	66.8	-3.6	0
September	4.88	1.66	66.4	3.76	1
October	<u>7.71</u>	<u>5.57</u>	44.1	-6.3	<u>0</u>
Totals	39.96	12.49			4

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

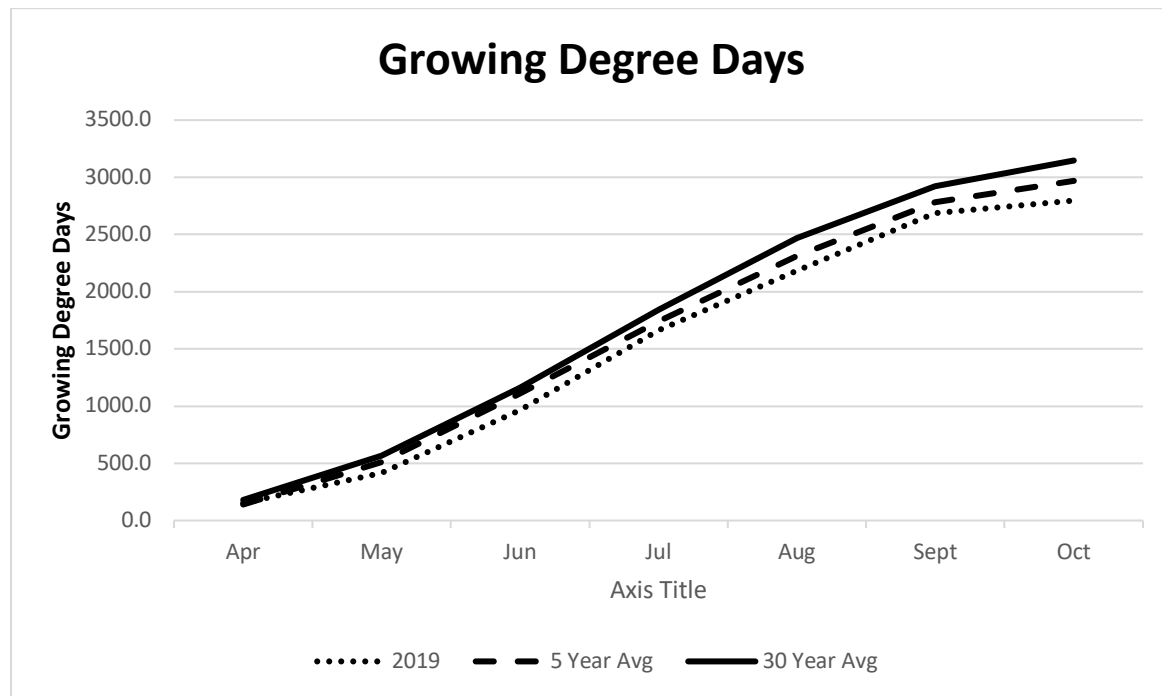


Figure 1. Growing degree days for 2019 at the ISU Northern Research and Demonstration Farm, Kanawha, IA.

Information on Experiments in Previous Annual Progress Reports

	Year
Northern Research Farm Summary RFR-A1875.....	18
Forecasting and Assessment of Cropping Systems in North Central Iowa RFR-A1858	18
Integrating Rye Seed Production and Red Clover into Corn Systems and Nitrogen Management RFR-A1885.....	18
Seasonal and Rotational Influences on Corn Nitrogen Fertilization RFR-A1853.....	18
Effect of Sidedressed Liquid Potassium Fertilizer for Corn in Northern Iowa RFR-A1893.....	18
Long-Term Tillage and Crop Rotation Effect on Yield and Soil Carbon in North Central Iowa RFR-A1879.....	18
Demonstrating Cover Crop Mixtures on Iowa Farmland: Management, Soil Health, and Water Quality Benefits RFR-A1867.....	18
The Impact of Cover Crops on Soybean Cyst Nematode Population Densities After One Year in Northern Iowa RFR-A1856	18
ISU On-Farm Cooperator Demonstration Trials:	
Relationships and Partnerships–2018 RFR-A1844	18
On-Farm Corn and Soybean Fertilizer Demonstration Trials RFR-A1837.....	18
On-Farm Corn Rootworm Management Demonstration Trials RFR-A1839	18
On-Farm Sulfur Fertilization of Alfalfa and Corn Demonstration Trials RFR-A1833	18
On-Farm Corn and Soybean Management Demonstration Trials RFR-A1838.....	18
2018 Home Demonstration Garden RFR-A1831	18

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
Cover crop and N application timing in corn	M. Licht
White mold in soybeans	D. Mueller
Cover crop mixes on corn and soybean	E. Juchems
Cover crop SCN in corn and soybean	G. Tylka
K side dress application in soybean	A. Mallarino
Crop rotation and N rates	A. Mallarino
Demonstration shrub row	C. Haynes
Application timing of fungicide on corn	A. Robertson
Forecast and assessment of cropping systems	M. Licht
Seed treatment SCN in soybean	S. Navi
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 soybean	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 soybean	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	NRF**
Planting date and hybrid maturity in soybean	ISA***
Planting Population in corn	NRF**
Harvest Timing in corn	NRF**
Cereal rye variety trial	PFI*
Seed treatment and SDS in soybean	S. Eggenberger
Seasonal and rotational influence on corn N requirements	S. Archontoulis
Soybean and cover crop IDC	S. Eggenberger
Soybean and cover crop SDS	S. Eggenberger
Corn rootworm trait and insecticide	NRF**
Weed identification garden	NRF**

*Practical Farmers of Iowa

**Northern Research Farm

***Iowa Soybean Association