

Northern Research Farm Summary

RFR-A1593

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
Larry Draves

Iowa State University Staff

Research Farm Superintendent.....	Matthew Schnabel
Ag Specialist.....	Karl Nicolaus
Research and Demonstration Farms Coordinator.....	Mark Honeyman 103 Curtiss Hall
Research and Demonstration Farms Manager.....	Tim Goode 103 Curtiss Hall

Farm and Weather Summary

Matthew Schnabel, farm superintendent

Farm Comments

Field days and tours. Six field day events were held. A total of 373 people visited the farm in 2015. On August 3, Karl Nicolaus started as an ag specialist. He is responsible for research trials on the farm as well as on-farm cooperator trials around north central Iowa, and has been vital to the continued success of the Northern Research Farm.

New projects. Milkweed demonstration, R. Hellmich; Corn N timing and rate, J. Sawyer; Oat variety trial, PFI; Perennial biomass in corn and soybean, R. Hinz; Soybean seed treatment, A. Robertson.

Crop Season Comments

The first corn was planted April 17 and planting was completed June 30. Harvest began October 7 and finished October 30 with average yields of 190–210 bushels/acre. Grain moisture levels were lower than average compared with the past few years. Grain test weight also was higher than in previous years.

Soybean planting started April 17 and was completed July 1. Harvest was from September 30 through October 14 with average yields of 50–60 bushels/acre.

Farm yields were consistently high with low moisture and good test weights. Unlike a typical growing season, no drowned out spots developed or needed replanting.

Weather Comments

Winter. At the start of 2015, the groundwater level was 4 ft below the soil surface. Below average temperatures throughout the year delayed crop development. The coldest month was February with an average temperature of 11.5°F. Frost penetrated to 13 in. below the

soil surface. The frost line did not thaw until early April.

Spring. The average temperature from March to May was normal. The last hard frost was April 23 when the temperature fell to 23°F. Above average precipitation in April and May delayed planting at times (Table 1).

Summer. The cooler-than-average temperatures in May, June, and July slowed crop development at times. Rainfall was average and evenly spread out. We did not record over an inch of rain in a 24-hour period until August 17 when 1.29 in. was measured. The month with the most precipitation was August with 6.61 in. Due to the mild rain events, we were able to complete field operations in a timely manner (Table 1). Growing degree days lagged the 30-yr and 5-yr average. (Figure 1).

Fall. The first killing frost was October 16 when the temperature dropped to 26°F. By then the soybeans were harvested. A majority of the corn had black layered in early to mid-September. Tillage was completed November 11. Fertilizer application ended December 22. On December 23, the groundwater table was 3 ft, 5 in. below the soil surface.

Acknowledgements

Calcium Products, Inc.
Gold-Eagle Cooperative
DuPont Pioneer
MaxYield Cooperative
North Central Cooperative
First Citizens National Bank
Kanawha Equipment
Bruce Smidt
Lester Schnabel
Brian Harle
Thomas Burke
Dennis Schwab

Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2015.

Month	2015	Rainfall (in.)	Temperature (°F)		Days 90° or above
		Deviation from normal*	2015	Deviation from normal*	
March	1.03	-0.83	36.1	1.7	0
April	4.15	0.88	48.3	0.3	0
May	4.80	0.86	58.9	-1.2	0
June	5.30	0.32	68.8	-0.7	1
July	3.56	-0.45	70.5	-2.4	2
August	6.61	2.89	66.9	-3.6	0
September	3.45	0.39	67.4	4.9	1
October	<u>1.19</u>	<u>-0.91</u>	50.8	0.4	<u>0</u>
Totals	30.09	3.15			4

*Rainfall and temperature normal is calculated based on data from 1949–2014.

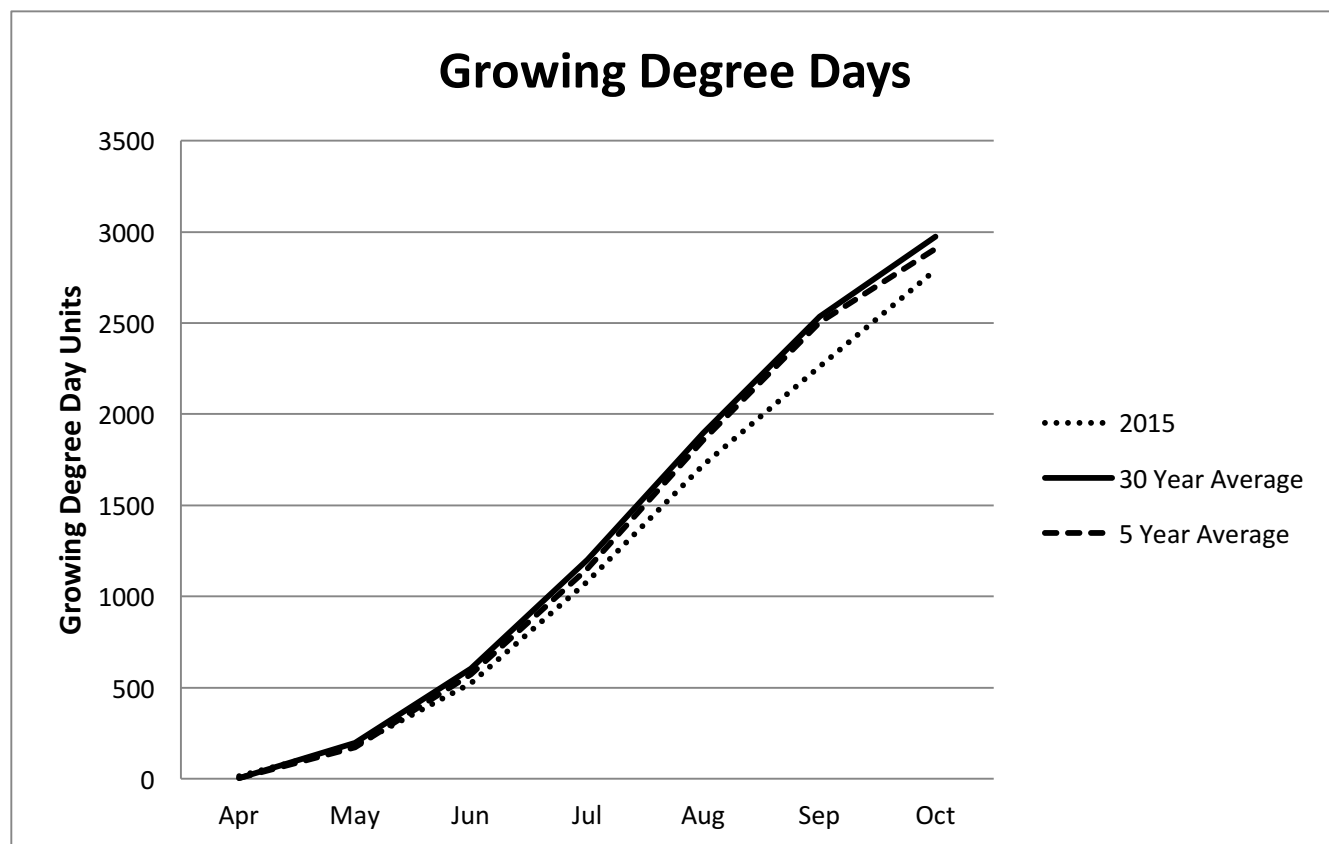


Figure 1. Growing degree days for 2015 at the ISU Northern Research and Demonstration Farm, Kanawha, IA.

Information on Experiments in Previous Annual Progress Reports

	Year
In-season N Fertilization Strategies using Active Sensor RFR-A1467	14
Corn and Soybean Yield Response to Micronutrients in Northern Iowa RFR-A1462.....	14
Effectiveness of Foliar Fungicides by Timing on Northern Leaf Blight on Hybrid Corn in North Iowa RFR-A1464.....	14
Long-term Tillage and Crop Rotation Effect on Yield and Soil Carbon RFR-A14105	14
Elite Soybean Test-North RFR-A1390.....	13
Long-term Tillage and Crop Rotation Effect on Yield and Soil Carbon RFR-A1392.....	13
Crop Availability of Phosphorus in Beef Cattle Manure for Corn and Soybean RFR-A1391.....	13
Seasonal and Rotational Influences on Corn Nitrogen Requirements RFR-A1393	13
Red Clover Variety Persistence Trial RFR-A1396.....	13
Alternative Grass Variety Trial RFR-A1397	13
Evaluation of Foliar Fungicides and Insecticides on Soybeans in Northern Iowa RFR-A1398	13
Diesel Fuel Consumption during Chisel Plowing RFR-A1389.....	13
On-farm Corn Rootworm Trials RFR-A1312.....	13
On-farm Micronutrient Fertilization of Soybean Trials RFR-A1319.....	13
ISU FARM Network: North Central RFR-A1262.....	12
Elite Soybean Test-North RFR-A12100.....	12
Corn and Soybean Response to Sulfur Application Rate RFR-A1261.....	12
Evaluation of Foliar Fungicides and Insecticides on Soybeans in Northern Iowa RFR-A1239.....	12
Use of Ground Eggshells as Liming Source RFR-A1290	12

Research Farm Projects

Research Projects

Automated weather station
 Corn hybrids by N and K fertility
 Corn N application timing and rate
 Cover crop mixes on corn and soybean
 Crop residue and K release
 Crop rotation and N rates
 Demonstration shrub row
 Early and late application of fungicide on corn
 Fungicide and insecticide applications on soybean
 Hail by fungicide on corn and soybean
 Home demonstration garden
 Long-term K fertilizer for corn and soybean
 Long-term tillage and crop rotation
 Methods of seeding cover crops
 Milkweed demonstration garden
 Oat variety trial
 Perennial biomass in corn and soybean
 Placement methods for K for corn and soybean
 Placement methods for P for corn and soybean
 Planting date for corn and soybean
 Seasonal and rotational influence on corn N requirements
 Seed treatment corn and soybean
 Seed treatment soybean
 Soybean disease resistance breeding
 Soybean SDS breeding
 USA national phenology network
 Weed identification garden

*Practical Farmers of Iowa

**Northern Research Farm

Project Leader

E. Taylor
 A. Mallarino
 J. Sawyer
 E. Juchems
 A. Mallarino
 A. Mallarino
 C. Haynes
 A. Robertson
 D. Mueller
 D. Mueller
 C. Haynes
 A. Mallarino
 M. Al-Kaisi
 S. Gailans
 R. Hellmich
 PFI*
 R. Hinz
 A. Mallarino
 A. Mallarino
 M. Licht
 J. Sawyer
 G. VanNostrand
 A. Robertson
 S. Cianzio
 S. Cianzio
 M. Schwartz
 NRF**