

2013

Northern Research Farm Summary

North Central Iowa Research Association

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Northern Research Farm Summary

Abstract

Includes:

Farm and Weather Summary

Information on Experiments in Previous Annual Progress Reports

Research Farm Projects

Disciplines

Agricultural Science | Agriculture

Northern Research Farm Summary

RFR-A12105

North Central Iowa Research Association

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Research Farm Superintendent.....	David Rueber
Research and Demonstration Farms Coordinator.....	Mark Honeyman 103 Curtiss Hall
Research and Demonstration Farms Manager	Dennis Shannon (retired 12/31/12) 103Curtiss Hall
Ag Specialist.....	Micah Smidt

Farm and Weather Summary

David Rueber, farm superintendent

Farm Comments

Field Days and Tours. Four field day events were held. A total of 941 people visited the farm in 2012. In February, Micah Smidt was hired to run the ISU FARM program, which has 13 projects on farmers' fields.

New Projects. Micronutrient foliar applied fertilizer for corn, A. Mallarino; Micronutrient starter fertilizer for corn, A. Mallarino; Application of fungicides for Goss's Wilt, A. Robertson; Post applied urea, J. Sawyer; Soil applied sulfur on soybeans, J. Sawyer; Corn stand thinning, R. Elmore; Date of corn planting, NIRF; High intensity soybean trial, NIRF; Corn rootworm resistant events trial, NIRF.

Crop Season Comments

Corn planting started on April 24 and was completed on May 10. Harvest began September 15 and was slow because of lodged corn. Some fields had to be harvested one way. It was completed October 3 with average yields of 160–170 bushels/acre and lower grain moisture than typical.

Soybean planting started May 10 and was completed May 16. Harvest ran from September 11 through September 28 with average yields of 40–50 bushels/acre.

Yields varied greatly depending on soil water supply. Crops in areas with sandy subsoil died prematurely.

Weather Comments

Winter 2010–2011. At the start of 2012, the ground water level was 10.42 ft below the soil surface due to the dry 2011 fall. The last measurable snow fell on March 5.

Spring. The average temperature for March was the warmest recorded in forty years. The last hard spring frost came on April 11 when the temperature fell to 21°F. Warm May soil temperatures at planting accelerated crop emergence (Figure 1).

Summer. Above normal June and July temperatures and dry conditions hastened crop development and weakened corn stalks (Table 1). Strong winds of up to 52 mph on July 25 root lodged corn on the farm, especially on the south site. Most of the rain in June fell during a 1.22 in. shower on the June 20. The largest rain event in July was .39 in.

Fall. The first killing frost came on September 23 when the temperature dropped to 26°F. By then most of the soybeans had been harvested and most of the corn had black layered. Field work was completed by October 26. The continued dry weather caused the ground water table to drop to 14.5 ft below the soil surface by November 25.

Acknowledgements

Thanks to Calcium Products, Inc.; Farm Credit Services of America; Farmers Trust and Savings Bank; Gold-Eagle Cooperative; Golden Harvest Seeds; MaxYield Cooperative; Mycogen Seeds; North Central Cooperative; and Paul Smidt for support of work at the farm.

Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2012.

Month	2012	Rainfall (in.)	Temperature (°F)		Days 90° or above
		Deviation from normal	2012	Deviation from normal	
March	2.46	.41	50.4	15.2	0
April	4.24	.56	51.9	3.0	0
May	3.13	-1.22	64.9	4.2	3
June	1.69	-3.51	72.0	1.8	8
July	1.15	-3.07	77.8	4.5	17
August	.99	-3.00	70.9	-0.1	11
September	1.64	-1.45	62.2	-1.3	3
October	2.39	.11	48.0	-2.9	0
Totals	17.69	-11.17			42

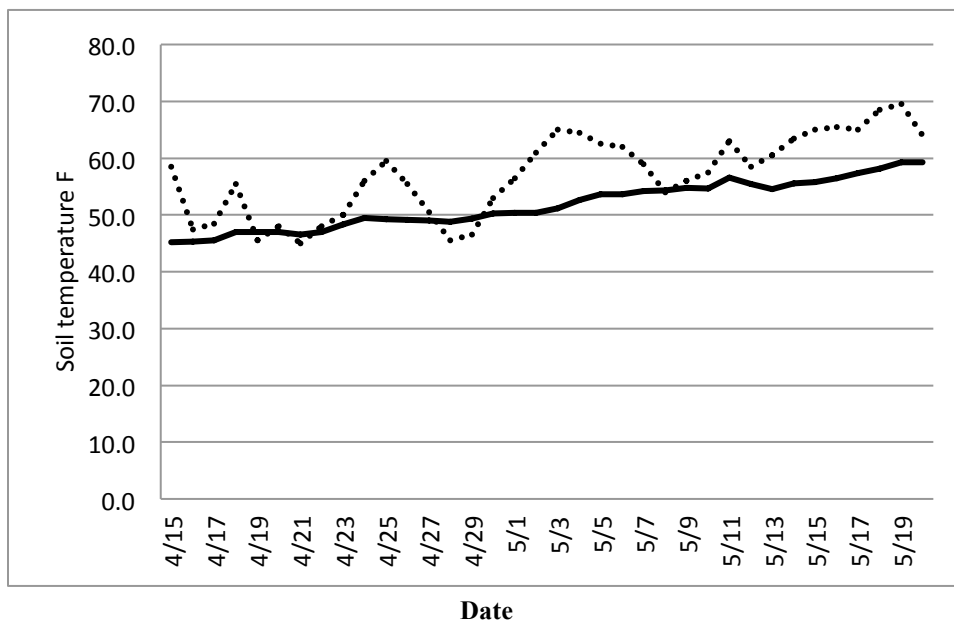


Figure 1. Spring 4 in. soil temperature °F at the ISU Northern Research Farm.

— 1982 to 2012 average

..... 2012

Information on Experiments in Previous Annual Progress Reports

	Year
Seasonal and Rotational Influences on Corn Nitrogen Requirements.....	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
Effect of Potassium Fertilizer and New Corn Hybrids on Yield and Potassium Uptake in Continuous Corn	08
Influence of Date of Planting on Corn Hybrids with/without Bt Corn Rootworm Protection ...	08
Early-Season Weed Competition in Corn.....	08
Soybean Sudden Death Syndrome Field Screening.....	08
Fungicide-Insecticide Study on Soybean.....	08
Strawberry Demonstration.....	08

Research Farm Projects

Research Projects	Project Leader
Alternative grass variety trial	S. Barnhart
Application of fungicides for Goss's Wilt	A. Robertson
Beef manure on low testing P soils	A. Mallarino
Corn rootworm resistant events trial	NIRF*
Corn stand thinning	R. Elmore
Crop residue and K release	A. Mallarino
Crop rotation and N rates	A. Mallarino
Date of corn planting	NIRF*
Demonstration shrub row	C. Haynes
Early application of fungicide on corn	A. Robertson
Fungicide and insecticide applications on soybean	A. Robertson
High intensity soybean trial	D. Mueller
Home demonstration garden	C. Haynes
Land rolling of soybean and water infiltration	J. Holmes
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
Micro nutrient foliar applied fertilizer for corn	A. Mallarino
Micro nutrient 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	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
Soybean variety strip trial	G. Tylka
Specialty soybean test	W. Fehr
Transplanted corn and primed corn seed study	R. Elmore
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