

Northwest Farm, Weather, and Research Summary

Andrew Weaver—farm superintendent, Northwest Research and Demonstration Farm

Farm Comments

Field days and tours. There were 13 field days and meetings held at the Northwest Research and Demonstration Farm this year. A total of 1,136 visitors attended field days or other events at the research farm, which is back to pre-COVID normal. The events ranged from private industry field days and trainings to educational meetings and tours open to everyone. Events at the farm included the Northwest Iowa Experimental Association's annual meeting, the Northwest Research and Demonstration Farm Summer Field Day, corn rootworm workshop, five seed industry trainings, three precision ag/animal science field days for high school youth, one Planter University, one retirement party, and three collegiate soil judging practice sessions.

Developments. Terry Tuttle retired September 2. Andrew Weaver was named superintendent October 1, and will continue his on-farm coordinator role along with managing day-to-day operations at the farm. Landon Lenhart will continue to assist with water quality studies and day-to-day operations. The third position has been eliminated.

Joel DeJong retired at the end of August. Leah Ten Napel is the new extension field agronomist for the area. She will assist with on-farm cooperator trials.

Equipment purchases new to the farm this year consisted of a replacement 20 ft. Case 490 disk that was completely rebuilt when purchased. A used Landoll 10 ft. disk ripper was purchased to replace a chisel plow and save another pass across the field. Also purchased was a new In Command Ag Leader monitor to begin updating some of the older GPS equipment.

A total of 35 research projects were conducted this year. Two of these projects were new to the farm. Also, 22 on-farm trials were conducted on cooperating farmers' fields in the area.

The Demonstration Garden, in Rock Rapids, supported by ISU Extension and Outreach in Lyon County, Northwest Iowa Experimental Association (monetary donation), and the ISU Northwest Research and Demonstration Farm, continues to be an attraction at the Lyon County fairgrounds. Along with produce donations from the demonstration garden in Lyon County, 378 lbs. of asparagus harvested at the research farm were donated to area nursing homes and food pantries, plus pumpkins were donated to Head Start, 4-H, and FFA programs.

New projects. Soybean Protein Bio-stimulant—Mark Licht, Fernando Mauri Marcos; Soybean Seeding Rate—Mark Licht, Fernando Mauri Marcos.

Crop Season Comments

For the second year in a row, corn planting scheduled to begin in April was actually started in April. The first corn planting occurred April 27 with corn planting complete May 10. Corn harvest began October 4 and ended October 11. The overall farm corn yield was 166 bushels/acre, with continuous corn acres yielding 115 bushels/acre.

Soybean planting began April 12 and was complete May 12. Soybean harvest began September 24 and ended November 2. The overall farm soybean yield averaged 54 bushels/acre.



Weather Comments

Spring 2022. Following another year that had below normal precipitation, the growing season started with dry soil conditions. The soil moisture profile started at 9.6 in. of available water, which is above the long-term average of 7 in. The 2021 growing season started at 10.1 in. with the maximum available being 10.5 to 11 in. The closest available weather station reported a deficit of 2.28 in. less moisture than normal from November 2021 through April 2022. That trend continued into the spring. Soil conditions offered good planting conditions, and a few rains in May helped germination. The farm received .86 in. of rain in June with the 30-year average being 4.63 in.

Summer 2022. The farm received no major rainfall events (> 5.0 in.) in any month. June was very warm with temperatures reaching over 90°F on eight days. Insect pressure found in the crops growing at the farm was low once again, not reaching economic threshold or requiring an overall insecticide treatment. Disease pressure was low again this year with no major problems noted. For the fifth straight year, soybean gall midge larvae were infesting bean plants across the farm and could be found in every soybean plot. The majority of bean plots did not suffer from a significant, yield reducing population; however, this pest will continue to be monitored and researched at the farm in an effort to learn more about the life cycle and culture of the insect and to formulate control and prevention measures. The month of July was close to an inch below the 30-year average of rainfall. That continued with August being 2.2 in. below normal.

Fall 2022. The first killing frost was November 11. By then, all of the soybean and corn had reached physiological maturity. September and October continued the trend of below-normal precipitation with only a couple of measurable rainfall events. Just .03 in. of rain in October and .32 in. in September were recorded. The staff were able to finish soil sampling, fertilization, lime application, and fieldwork. Due to lower-than-normal rainfall early in the season and near normal rainfall later in the season, drainage in the tile water quality study ceased to flow June 17, with no samples taken through the rest of the year.

Acknowledgements

The Northwest Iowa Experimental Association and ISU Extension and Outreach are commended for their support of the Northwest Research Farm. Support of field days, speakers, and new ideas are vital to the research farm's successes. Appreciation also is extended to the following entities for their support of research projects or ideas at the research farm: AMVAC; Wyffel's Seed; Corteva Crop Protection; Corteva-Pioneer Seed; Asgrow/DeKalb Seed–Craig Lamoureux; Bayer Crop Protection; Security State Bank; O'Brien County ISU Extension and Outreach; Cherokee County ISU Extension and Outreach; Iowa Nutrient Research Center; O'Brien County Ag; Ag Partners; 5th Gen Ag; Farmers Coop Society; CS Asgrow; Cooperative Farmers Elevator; Ken's Feed–Sutherland, Iowa.

Table 1. Monthly rainfall and average temperatures.

Month	Rainfall, in.		Temperature °F		Days 90°F or above
	2022	Deviation from 30-year average	2022	Deviation from 30-year average	
April	1.75	-1.07	42.0	-4.4	0
May	3.24	-1.08	59.2	0.5	4
June	0.86	-3.77	71.0	1.8	8
July	2.43	-0.92	72.6	0.5	1
August	1.80	-2.21	69.7	0.2	1
September	0.32	-3.12	63.9	1.6	1
October	0.03	-2.10	48.9	-0.1	0
Totals	10.43	-14.25			15

Rainfall and temperature averages based on data from 1992-2022.

Research Summary

Research Project	Project Lead
Asparagus variety trial	Northwest Research and Demonstration Farm staff
AMVAC insecticide trial	
AMVAC Thimet 20G SGM plot	
Pioneer bean Xtend variety trial	
Pioneer bean variety trial (E3, LL)	
Milkweed/pollinator demonstration	
Cereal rye cover crop rate/acre trial	
Cereal rye cover crop	
Inversion weather station	
Weather stations (Sutherland, Doon, Ocheyeden)	
Corteva-Pioneer seed corn variety trial	
DeKalb corn no-till trial	Northwest Research and Demonstration Farm staff/C. Lamoureux
Cardinal corn fungicide efficacy x timing	A. Robertson
Xyway fungicide trial	A. Robertson/J. Shriver
Corn row spacing x population trial	Northwest Research and Demonstration Farm staff/M. Licht
Soybean row spacing x population trial	
Soybean N-fixation trial	M. Licht/Fernando Mauri Marcos
Field edge de-nitrification bioreactor	Northwest Research and Demonstration Farm staff/M. Helmers
Pel-lime trial	A. Mallarino
Iowa crop Improvement soybean variety test	J. Rouse
Long-term nitrogen rate study	S. Archontoulis
Long-term tillage and carbon sequestration	M. Licht
Miscanthus establishment evaluation	E. Heaton
Monarch habitat project	D. Nistler
Moth trapping–black cutworm (BCW)	A. Dean
Moth trapping–true armyworm (TAW)	
Corn rootworm beetle trapping	
Soybean gall midge emergence trap	B. Kolbe
Inter-seeding cover crops in standing corn	M. Licht/Fernando Mauri Marcos
ISU soybean gall midge efficacy plots	E. Hodgson/B. Kolbe
Soybean aphid efficacy trial	E. Hodgson/G. VanNostrand
Soybean aphid suction trap	E. Hodgson
Statewide soybean fungicide comparison	D. Mueller/ S. Wiggs
ISA/Iowa State University soybean planting date comparison	M. Witt/S. Nelson
Surface runoff study	A. Mallarino/M. Helmers
Soybean breeder trialplots	Singh/B. Scott
Tile water quality study	M. Helmers/C. Pederson
Water table monitoring	Natural Resources Conservation Service
Wyffels corn variety trial	Northwest Research and Demonstration Farm staff/J. Friedrichsen
Weed science herbicide demonstration	P. Jha/ Northwest Research and Demonstration Farm staff