2014

Northwest Farm Summary

Northwest Research Farm and Allee Demonstration Farm

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Abstract
Contents: Northwest Iowa Experimental Association, 2013–2014; Northwest Research Farm Summary; Projects at Sutherland; Allee Demonstration Farm Summary

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2013–2014

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Agricultural Specialist, Northwest.....Chad Huffman
Superintendent, Allee.....Lyle Rossiter
Manager, Research Farms.....Tim Goode
103 Curtiss
Coordinator, Research Farms.....Mark Honeyman
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Ames, IA 50011

Northwest Research Farm Summary

Josh Sievers, farm superintendent

Farm Comments

Developments. Chad Huffman was hired in February as an agricultural specialist to manage plots at the research farm. Over 31,500 feet of tile was installed in July to begin a 40-acre experiment with 32 plots that measured tile water quality. A number of machinery upgrades took place in 2013. A new 70 horsepower Kubota tractor was purchased to replace a 1972 Ford 2000 gas tractor. A new Schulte Batwing was added to the fleet to replace a stalk cutter and mower. Integrated auto steer with an Ag Leader Integra display was added to the existing John Deere 7420 tractor. Dawn Gfx hydraulic adjust row cleaners were added to the Kinze 3500 planter. Two 300-gallon 3-point mounted sprayers also were added to replace the John Deere 6000 sprayer.

Field days and tours. The ISU Northwest Research Farm hosted 10 field days with a total of 1,464 visitors. The events ranged from 4-H camps to private industry field days. The summer field day topics discussed were weather patterns and climate, soil erosion, weed management, and soil surface runoff. The fall field day was held in conjunction with Dordt College, Sioux Center, Iowa. Topics discussed were a corn root pit, managing weed resistance, corn rootworm resistance, and implementing cover crops.

A total of 33 projects were conducted at the research farm. There were 57 projects coordinated through the ISU Farmer Assisted Research and Management (FARM) program in northwest Iowa.

New projects. Soybean cyst nematode × soybean aphid interaction, Mike McCarville; Soybean fungicide comparison, Daren Mueller and Stith Wiggs; Honeybee interaction with seed corn treatments, Mary Harris; Cover crop seeding, Practical Farmers of Iowa; Rescue weed control in soybeans, NWRF Staff; Planting date demonstrations, Pioneer Hi-Bred.

Crop Season Comments

Corn yields averaged 202 bushels/acre across the farm. Yields were much better than expected given the growing season conditions. Corn planting began on May 13 and was completed on May 16. Late April and early May weather proved to be very wet and made for a challenging spring. Corn harvest began on October 24 and ended on November 4.

Soybean yields averaged 60 bushels/acre. Soybean planting began on May 23 and ended on June 22. Due to the rainfall pattern, the soybean planting date was a very spotty window. Soybean aphids reached above economic thresholds and were treated with a foliar insecticide. A 10-bushel average difference in yield was noted from the early-planted soybeans to the late-planted soybeans. Soybean harvest began on October 1 and ended on October 21.

Weather Comments

Spring 2013. Cool temperatures, precipitation, and late-season snow delayed corn planting until mid-May. The precipitation continued through May and early June and allowed very brief opportunities to plant soybeans in optimal soil conditions. On May 25–26, a hard 7-in. rain fell. Large amounts of soil and residue were washed on to roadways and turn alleys. Corn plants took the rain better than the soybeans. The large amount of precipitation and the warm weather that ensued created a hard surface crust that required several rotary hoeings to break up.

Summer 2013. The rain spell that plagued the spring came to a quick stop. Very low rainfall in July stressed both corn and soybeans. August rainfall kept the crop sustained. The research farm was very fortunate to receive 5.16 in. of rain in August. Concerns of an early frost were noted due to unseasonable cool temperatures in July and August. Late August and early September brought warm temperatures and allowed the crops to reach physiological maturity. Many farmers noticed the weed escapes were extremely high this year. Water hemp and marestail were resistant to repeated glyphosate applications.

Fall 2013. Cool temperatures again returned. Late October did not bring warm temperatures to allow grain to dry down. Most of the soybeans delivered to market were in the 12.5–13.0 percent moisture range, whereas the corn was 19–23 percent. Yields were better than expected given the wet and delayed planting season, dry and warm growing season, and cool and wet harvest season.

Acknowledgements

The ISU Northwest Research Farm staff would like to thank the Northwest Iowa Experimental Association for their support and guidance. We extend our appreciation to the ISU researchers and Extension and Outreach staff for their support and guidance throughout the growing season. Appreciation also is extended to our agri-business partners listed below for their financial or in-kind support of the research farm and the ISU FARM project.

Pioneer Hi-Bred
Security State Bank
Farm Bureau, Sioux County
Iowa Soybean Association
Greenspire Global, Inc.
BASF

Table 1. Northwest Research and Demonstration Farm, Sutherland, Iowa, monthly rainfall and average temperatures for 2013.

	Rainfall (in.)		Temperature (°F)		
Month	2013	Deviation from normal	2013	Deviation from normal	Days 90° or above
April	4.20	1.61	40.1	5.0	0
May	10.35	6.47	51.1**	-8.0	1
June	3.92	-0.69	72.5**	3.7	1
July	0.62	-2.89	71.8	-1.3	5
August	5.16	1.26	70.4	-1.7	9
September	0.65	-2.58	65.4	4.3	0
October	2.76	0.66	48.5	-0.3	0
Totals	27.66				16

Projects at Sutherland

Research Project	Project Leader
Asparagus variety trial	NWRF Staff
Corn aphid threshold study	E. Hodgson
Corn burner as primary shop heat	NWRF Staff
Corn fungicide efficacy × timing	A. Robertson
Corn planting date	NWRF Staff
Corn rootworm trap crop	A. Gassman
Cover crop seeding trial	Practical Farmers of Iowa
Demonstration Garden, Rock Rapids	C. Haynes
Demonstration windbreak	J. Randall
Goldenrod flowering × climate change	J. Etterson
Herbicide comparison demonstration	P. Kassel
Honeybee interaction with seed treatments	M. Harris
Long-term nitrogen rate study	J. Sawyer
Long-term rotation study	G. Munkvold
Long-term tillage and carbon sequestration	M. Al-Kaisi
Micronutrient application, foliar applied	A. Mallarino
Micronutrient application, in-furrow applied	A. Mallarino
Miscanthus establishment evaluation	E. Heaton
No-till cover crop × nitrogen rate	J. Sawyer
Phosphorus in beef manure	A. Mallarino
Rescue weed treatments	NWRF Staff
Soybean aphid efficacy trial	E. Hodgson
Soybean aphid pan trap	M. O'Neal
Soybean aphid suction trap	M. O'Neal
Soybean fungicide × insecticide interaction	D. Mueller
Soybean fungicide comparison	D. Mueller
Soybean cyst nematode × soybean aphid interaction	M. McCarville
Surface runoff study	A. Mallarino and M. Helmers
Tillage × fertilizer placement study	A. Mallarino
Tile water quality study	M. Helmers
Tree biomass and regrowth potential	J. Randall and R. Hall
Water table monitoring	NRCS
Weather station	NWRF Staff

Allee Demonstration Farm Summary

Lyle Rossiter, farm superintendent

Farm Comments

Developments. The implementation of the FARM (Farmer Assisted Research and Management) program continues in 27 Iowa counties. FARM staff assisted individual farmers in setting up field-length research and grain data for statistical analysis. Extension crop specialist Paul Kassel and farm superintendent Lyle Rossiter assisted five farmers with six field projects.

Field days and tours. An alternative livestock production and marketing meeting was held in August. Topics were finished grass-grazed beef, alternative farrowing systems, and niche marketing. Pete Lammers, professor, Illinois State University, and David Stender, ISU Extension field specialist, provided informative results and led the discussions.

The Allee Farm hosted Ag-Citing Days with topics of soil science, wind turbines, amazing corn, global positioning satellite, Buzzing with Bee's, and 4-H youth presenting talks on their live beef, goat, rabbit, and swine projects to 348 fourth grade students from Buena Vista County. The Corn Growers Association and Farm Bureau provided funding and food for the event. A corn maze with the word "honey" and in the shape of a "bee" was enjoyed by all of the students and guests.

The Buena Vista special swine class included 38 participants who gained swine production knowledge, herdsmanship, and showmanship techniques at the Allee Farm. With the experience, each participant purchased, showed, and marketed four market pigs at the county fair in July for a total of 152 pigs.

The Allee Farm appreciates the community support and the opportunity to be an educational site for all ages and families. A total of 945 guests visited the farm. The Allee Historical Mansion entertained 802 guests in 2013.

New projects. Two honeybee hives were placed on a grass strip on the farm this spring. Small plastic square grids were placed in front of the beehive entrance. As the bees entered the hive, pollen was scraped off on the grid. Mary Harris, adjunct assistant professor, ISU Natural Resource Ecology and Management, and staff changed the grids weekly and examined the pollen in the lab. Honeybees are an important industry for honey production and efficient pollinators for many plant species. One-third of the food we eat relies on insect pollination.

A new advanced automated weather station was installed this fall in the northwest corner of the farm. Data collected will continue to be available as part of the ISU Mesonet at mesonet.agron.iastate.edu under Iowa Ag Climate Network. The soil probes will monitor soil moisture and temperature at 12-, 24-, and 50-in. depths.

Livestock. The ISU Allee Farm continues to feed and collect data from steers and heifers of the purebred Angus cowherd at the ISU McNay Research Farm, Chariton, Iowa. A second year alternative farrowing project was conducted, farrowing four gilts twice a year in a round 20-ft canvas shelter called a "Yurt." The first three groups of farrowed pigs, averaged 8.25 pigs per sow, weaned at 45 days.

Crop Season Comments

Corn was planted May 14–15. Harvest was completed on November 1 with average yields of 158 bushels/acre.

Soybean planting was finished May 24. Harvest was completed October 17 with average yields of 44 bushels/acre.

Weather Comments

Winter. January had scattered snow showers with little accumulation and above average temperatures. February was mild with little moisture–.26 in. Dry conditions continued into March with 0.50 in. of moisture and normal temperatures.

Spring. April showers broke the dry spell for a total monthly precipitation of 3.01 in. Farmers started planting corn the last week of April. On May 2, six inches of snow stopped corn planting. The second week was dry for planting and the third week rains created wet soil conditions for the rest of May. May's monthly precipitation was 6.07 in.

Summer. Rains lessened in June to finish planting most of the corn and soybeans. July turned dry, with only 0.13 in. of moisture. A few farmers were still planting soybeans in the second week of the month. July's temperatures were normal with one day above 90 degrees. Corn and soybeans suffered drought conditions with shallow roots. August rains of less than one inch created drought conditions, and plant roots found moisture in the lower soil profile.

Fall. September was dry with 0.35 in. of rainfall. Lower than average temperatures allowed corn and soybeans to fill. October rains totaled 0.95 in. A late killing frost on October 24 allowed soybeans and corn crops to mature.

Acknowledgements

The farm would like to thank the Newell-Fonda Community School, ISU FARM staff, Newell Cooperative, ISU Extension, and Iowa Corn Growers Association for their assistance with field days and events.