



Farm, Weather, and Research Summary

Cody Schneider—superintendent, Southeast Research and Demonstration Farm, and Muscatine Island Research and Demonstration Farm

Farm Comments

This was an exciting year with the construction of the new Research and Learning Center and the farm celebrating its 35th anniversary.

Alexa Marcus was hired in February as the new agricultural specialist. Her degree is in horticulture. She was the breeding associate and greenhouse manager with Kemin Industries, working with marigolds. She has been a great addition to the team.

The last several years the farm has been transitioning management roles. This year, Cody Schneider was promoted to farm superintendent of the Southeast Research and Demonstration Farm (SERF) and Muscatine Island Research and Demonstration Farm (MIRF).

Field Days and Tours. The Southeast Iowa Agricultural Research Association's (SEIARA) annual meeting was held March 3. Late March, several Waco students job-shadowed with farm staff for a week.

On July 7, SERF's spring field day and agronomy summer workshop was well attended. Topics included a farm update, lime research update, interseeding cover crops into corn and soybean, soybean disease management update, and corn rootworm management strategies.

The fall field day was held September 8. The day celebrated SERF's 35th anniversary and the ribbon cutting of the new Research and Learning Center and open house. There were over 200 visitors. Special guest speakers included Wendy Wintersteen, president of Iowa State University; John Lawrence, vice president for ISU Extension and Outreach; Jay Harmon, associate dean in the College of Agriculture and Life Sciences and director for agriculture and natural resources extension; Kendall Lamkey, Iowa State Department of Agronomy chair; and Steve Harris, chair of Iowa State's Department of Plant Pathology, Entomology, and Microbiology. Comments were made on the importance of the partnership between Iowa State and SEIARA, as well as the amazing feat of raising funds for the new Research and Learning Center. Tim Goode, Iowa State University Research and Demonstration Farms manager, and Cody Schneider, SERF farm superintendent, presented on SEIARA's 35 years of history and farm updates. The day concluded with networking opportunities and a farm tour.

The annual high school Ag Exploration field day was held September 21 and 22, with 230 students from 20 different schools attending. All high school students within SEIARA's 21-county association are invited to participate in a day of hands-on activities, learning about different opportunities in agriculture, and networking with other students, college representatives, and local industry leaders.

- 97% of students shared that because of Ag Exploration Day, they were starting to think more about the type of education they needed in the future.
- 89% shared they learned about colleges that would be a good fit for them.
- 92% felt that the Ag Exploration Day helped them explore or think about future career pathways.

Other events held at the farm included a stop for the Women in Ag "Farm Crawl," a visit from Iowa State's new student agronomy learning community, presenting to the Master Conservationist class, and hosting the Ag Chem Dealer Update. There were a total of 1,193 visitors to SERF and 55 visitors to MIRF this year.

Developments. Construction of the Research and Learning Center started in March with framing. Supply chain and labor issues put its first strain on the project right away. Steel was back ordered for over a month due to insufficient red paint. Labor issues also delayed the project. By July the building was ready for installation of in-floor heat and concrete. In August the bathrooms, kitchen, and classroom rough-in and finish work was completed. There was a push by electrical and plumbing to be 100% complete for the grand opening September 8, but contractors needed more time. Work continues to finish electrical and classroom projects, with plans for completion in January 2023.

Special acknowledgement to the work of the association, board, and planning committee members. This would not have been possible without their hard work in fundraising and planning efforts. Also to Tom Miller, retired extension swine specialist, for agreeing to be the general contractor and helping problem solve any issues that arose and allowing farm staff to focus on research projects. The farm also appreciates Greiner Building, Stumpf Concrete, 4-M Plumbing, Rush Electric, and Bob Swigart Construction for their efforts.

The Washington County Riverboat Foundation provided the \$200,000 grant awarded to SEIARA and all donors and in-kind supporters of the project. A complete list of supporters can be found in the progress report, which has totaled \$522,000.

Donations can still be made by contacting the ISU Extension and Outreach Johnson County office or emailing seiara@iastate.edu.

Equipment. UAN applicator was updated with Ag Leader liquid control system. Electrical upgrades were made to the two single span pivots at MIRF, along with a new pump and electric valves.

SERF New Projects. AgriDNA3 crown rot trial, A. Robertson; Corn pythium study, D. Mueller; Crown rot of corn fungicide trial, A. Robertson; Entomopathogenic nematodes and winter cover crops effect on corn rootworm larva, A. Gassmann; High intensity phenotyping, L. Coffey; Interseeding cover crops in V6 corn, M. Licht; Nitrogen rates to reduce corn yield drag and disease implications following cereal rye cover crop, M. Licht; Physoderma node rot fungicide trial, A. Robertson; Residue decomposition in corn and soybean tilled vs. no-till, S. Archontoulis; Soybean seeding rate (20,000 to 200,000), M. Licht.

Crop Season Comments

A colder and slightly wetter start to spring delayed the start of field work. Operations started with nitrogen applications April 19 at SERF and April 25 at MIRF.

With conditions not fit for planting at SERF, operations moved to MIRF to start corn planting April 26 and planted soybean April 27. Cooler temperatures and rain delayed planting at SERF until May 9 with soybean date of planting, seed treatment projects and then switching to corn. Favorable weather allowed for a rapid planting pace and planting was completed May 18.

Weather quickly turned warm with above normal temperatures in June, which included seven days above 90°F. Crops emerged quickly and caught up to normal growth stages. Spotty showers and high wind speeds made post herbicide applications challenging.

Weather conditions turned less than ideal during pollination with high temperatures and lack of precipitation. Every month from May to October recorded below normal rainfall and many rain events being less than an inch of precipitation. March to October recorded rain fall was 8.23 in. below average.

Due to frequent irrigation at MIRF, tar spot continues to be an issue in the corn. MIRF had a hard time getting fungicide applied to the fields and finally was able to get it applied by drone around R3 growth stage. SERF also had tar spot showing up. R5 disease ratings showed 15-20% severity on ear leaf on some hybrids at SERF.

With concerns of standability in the corn at MIRF due to tar spot, harvest started slightly early on September 26 and wrapped up with soybean September 29. Corn and bean yields at MIRF still were better than expected with 210 bushels/acre corn and 65 bushels/acre soybean under irrigation.

Harvest started September 29 and favorable weather allowed for a rapid harvest with only several short rain delays. Dry conditions and a bearing failure on the combine caused some smoldering residue and a small field fire. Fortunately, no fire damage was caused to the combine and the field was already harvested resulting in no yield or data loss. Even with the limited precipitation, yields were much better than expected and in fact were the best the farm has raised. Bulk yields and non-negatively affected yields were 240 to 250 bushels/acre corn and 75 bushels/acre soybean.

Harvest was completed October 21 and fall tillage November 28. The farm still has limited amounts of dry fertilizer to apply in the spring.

Weather Comments

Winter 2021-22. The moisture was adequate/surplus going into spring.

Spring 2022. Cold and wet start to spring with below average temperatures in April. Temperatures turning warm in June and July with 7 and 10 days above 90°F, respectively.

Summer. Weather turned dry rather quickly with only spotty precipitation. March through October only recorded four days with precipitation equaling one inch in a 24-hour period. June through August was five inches below normal. Fortunately, some rather normal temperatures and overcast days helped prevent excessive moisture stress.

Fall. Conditions continued to be on the dry side. Some late fall and early winter rains have helped recharge soil moisture, but still below field capacity.

Acknowledgements

The staff thanks ISU Extension and Outreach, project leaders, farm staff, local agribusinesses, Gillam Ag Service, and Agriland FS for their support of the Southeast Research Farm. Merschman Seeds donated seed corn and seed bean needs for both the Southeast and Muscatine Island Research Farms. The Southeast Iowa Agricultural Research Association and Muscatine Island Research Farm Association provided a strong, continued partnership.

Table 1. Monthly rainfall and average temperatures.

Month	Rainfall, inches		Temperature, °F		
	2022	Deviation from normal	2022	Deviation from normal	Days 90°F or above
March	2.95	0.78	39.8	0.0	0
April	3.34	0.00	47.6	-3.8	0
May	2.73	-2.13	65.3	2.4	7
June	2.87	-1.94	74.0	1.8	10
July	2.27	-1.32	74.3	-0.9	7
August	2.31	-1.75	73.4	0.1	4
September	3.06	-0.24	66.6	0.7	3
October	1.06	-1.63	51.8	-1.5	0
Total	20.59	-8.23			31

Research Summary

Research Project	Project Lead
Continuous corn insecticide evaluations	A. Gassmann
Entomopathogenic nematodes and winter cover crops effect on corn rootworm larva	
AgriDNA3 crown rot trial	A. Robertson
Cardinal corn fungicide study	
Corn disease working group fungicide trial	
Crown rot of corn fungicide trial	
National prediction tool monitoring initiative	
Physoderma node rot fungicide trial	
Iowa State Singh soybean breeding program	A. Singh
Soybean seed treatment	B. Piper
Corn fungicide timing in corn-soybean rotation	C. Schneider
Corn fungicide timing in continuous corn	
Automated weather station	D. Herzmann
Corn pythium study	D. Mueller
Statewide soybean fungicide trial	D. Mueller/S. Wiggs
Iowa moth trapping network	E. Hodgson
Nut tree demonstration	Iowa Nut Growers Association
USDA corn breeder program	J. Edwards
ICA corn performance testing	J. Rouse
ICA soybean performance testing	
Organic cropping system -soybean variety trial	K. Delate
Kalona soil tillage study	K. TeBockhorst
Nira soil tillage study	
Switchgrass biomass production demo	
Wetland demonstration for nitrate removal	
High intensity phenotyping	L. Coffey
Nitrogen rate x crop rotation x drainage	M. Castellano
Ostara fertilizer study	
Science-based trials of rowcrops integrated with prairie strips (STRIPS)	M. Helmers
Subsurface drainage study	M. Helmers/K. Tebockhorst
Carbon sequestration study	M. Licht
Interseeding cover crops in V6 corn	
Nitrogen rates to reduce corn yield drag and disease implications following cereal rye cover crop	
Soybean seeding rate (20,000 to 200,000)	M. McDaniel
Miscanthus repeated planting year study	
Sorghum breeding program	M. Salas
Soybean planting date x maturity	M. Witt/SERF
Orchard demonstration	P. O'Malley
Pollinator habitat	R. Hellmich
Corn rootworm management demo	R. Vittetoe
Forecast and assessment of cropping systems	S. Archontoulis
Long-term nitrogen x crop rotation study	S. Archontoulis
Residue decomposition in corn and soybean tilled vs. no-till	
Corn population trial	SERF
Milkweed demonstration	
Native prairie grass demonstration	
Raspberry variety demo	
Soybean R3 fungicide trial	
Enlist herbicide demo	
	S. Jungman