

Armstrong and Neely-Kinyon Research Farms Summary

RFR-A1485

Wallace Foundation for Rural Research and Development

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 Livestock Specialist Randy Breach
 Crops Specialist Dan Schaben
 Iowa On-Farm Ag Specialist ... Jim Rogers
 Admin Specialist..Leann Plowman-Tibken
 Farms Coordinator Mark Honeyman
 Farms Manager Tim Goode
 103 Curtiss Hall, ISU

Farm and Weather Summary

Bernie Havlovic, farm superintendent

Farm Comments

Developments. A new Kinze 3000 4-row, 30-in. plot planter was purchased last spring. The till/no-till planter is equipped with both liquid and dry starter fertilizer units and is controlled by an Ag Leader command system. Other machinery purchases were a used 15-ft twin-row Kinze 2000 planter and a used 6-row John Deere corn head.

Field days and tours. The farms held nine events with a total of 2,290 people attending the various field days, conferences, classes, and group tours. Among the farm events were the Leopold Advisory Board meeting and tour, a Wyffels Ag Career Day for 11 Southwest Iowa high school ag students, and a Feedlot Short Course for area cattle producers.

New projects. Learning Farm cover crops study on both corn and soybeans, E. Juchems; Cover crops–enhancing corn yields, J. Sawyer; Soybean thrips monitoring project, M. Irizarry; Corn hybrid × date of planting study, and Soybean cultivar × date of planting study, M. Licht; Marrone corn fungicide evaluation study, and Helmstar corn fungicide evaluation study, A. Robertson; Prairie buffer strip project, M. Helmers; Bok choy cultivar study in a high tunnel, Grafted tomato study in a high tunnel, and Ginger study in a high tunnel, A. Nair; Utilization of switch grass hay in a feedlot ration, C. Clark; Farm shop lighting – a farm energy project, M. Hanna.

Livestock. Winter snowfall was below normal but air temperatures were some of the coldest in over 40 years. Outdoor feedlots froze solid in early December and remained frozen until the middle of March. Frozen livestock water founts and underground waterlines were a common problem throughout the winter.

Excessive summer rains created lush pasture grazing conditions along with muddy feedlots.

Crop Season Comments

Corn planting started two weeks behind normal on May 7 and was completed by May 17. The cool and wet summer delayed the start of corn harvest until September 29 but yields were good and the farm averaged slightly over 185 bushels/acre. Soybean planting did not start until May 9 and was completed by May 21. Soybean yields were excellent and most fields averaged between 65 and 70 bushels/acre.

Weather Comments

Winter 2013–2014. Below normal snowfall amounts and record setting low temperatures persisted throughout the winter. Daily low temperatures below zero were recorded on 33 days and the January 6 low temperature of -15°F was the coldest of the winter.

Spring 2014. Below normal air temperatures and above normal spring rainfall delayed spring field work until April causing delays in planting of all crops. Corn and soybeans emerged slowly in the cool, damp soil conditions.

Summer 2014. Summer rainfall totaled over 10 in. above average and temperatures averaged slightly below normal. Corn and soybean crop development lagged behind normal throughout the summer. By the end of the summer both corn and soybeans were rated as good, but wet fields and delayed crop maturity was a concern in the area.

Fall 2014. More seasonal weather prevailed in the fall months but the start to harvest was delayed until the end of September. Corn grain moistures dropped slowly in the field and harvest was not completed until early November. Soil moisture conditions were at or near field capacity at season's end.

Table 1. Armstrong Research and Demonstration Farm, Lewis, monthly rainfall and average temperature for 2014.

Month	Rainfall (in.)		Temperature (°F)		Days 90° or above
	2014	Deviation from normal	2014	Deviation from normal*	
March	0.79	-1.38	32.7	-4.0	0
April	4.38	+0.99	48.5	-0.5	0
May	3.48	-1.07	62.1	+1.2	1
June	9.93	+5.37	70.5	0.0	0
July	2.28	-2.28	69.8	-4.5	0
August	11.07	+7.19	72.4	+0.6	0
September	6.25	+2.61	63.3	-3.3	0
October	4.52	+2.25	59.9	+8.3	0
Totals	42.70	+13.68	59.9	-2.2	1

*Normal rainfall recorded at the U.S. Weather Bureau Station, Atlantic, IA.

Research Farm Projects

Project/Demonstration

Project Leader

All-America selections garden	B. Havlovic
Bailey flowering shrub and hardy rose demonstrations	B. Havlovic
Ball seed/Pan American seed flower trial	B. Havlovic
Bio char biomass study on garden plants	C. Haynes
Bio char biomass study on marginal soils	D. Laird
Blackberry trellising study	G. Nonnecke
Bok choy cultivars in a high tunnel	A. Nair
Corn and soybean cover crop × nitrogen study	J. Sawyer
Corn fungicide “Cardinal” trial	A. Robertson
Corn hybrid × crop rotation study	J. Sawyer
Corn hybrid × date of planting study	M. Licht
Corn rootworm research	P. Weber
Cover crop evaluations in a corn/soybean rotation	T. Kaspar/A. Lenssen
Cover crops–enhancing corn yields	J. Sawyer
Cover crops seeding into standing corn and soybeans	E. Juchems
Crop residue removal research	M. Al-Kaisi/A. Mallarino/J. Sawyer
Easy Elegance shrub rose trial	B. Havlovic
Evaluation of farm energy usage for drying corn	M. Hanna
Evaluation of farm energy usage with diesel tractors	M. Hanna
Farm shop lighting study-farm energy project	M. Hanna
Floral provisioning study	M. Gleason
Foliar fertilization of soybeans	A. Mallarino
Forestry biomass study	J. Randall
Ginger as a high tunnel crop evaluation	A. Nair
Helmstar corn fungicide evaluation study	A. Robertson
High tunnel bramble trial	B. Havlovic

Project/Demonstration (continued)

Home demonstration garden
Home demonstration orchard
ISU bull development project
K-fertility × placement study
Long term organic rotation study
Long-term tillage/crop rotation study (3)
Marrone corn fungicide evaluation study
Micro-nutrients on soybeans
Miscanthus grass establishment study-Armstrong
Nitrogen rates/crop rotation study
On-farm corn and soybean management studies (6)
Organic grape study
Organic soybean disease control study
Organic vegetable production with cover crops
P-fertility × placement study
Potassium × corn hybrid study
Prairie grass buffer strip study
Sorghum as a biomass crop
Soybean cultivar × date of planting study
Soybean fungicide evaluations
Soybean thrips monitoring project
Spring Valley flowering shrub trial
Tomato grafting study in a high tunnel
Utilization of switch grass in a feedlot ration

Project Leader

C. Haynes
B. Havlovic
J. Williams/J. Reecy
A. Mallarino
K. Delate
M. Al-Kaisi
A. Robertson
A. Mallarino
E. Heaton
J. Sawyer
J. Rogers/A. Saeugling
K. Delate
K. Delate
K. Delate
A. Mallarino
A. Mallarino
M. Helmers
M. Fernandez
M. Licht
D. Mueller
M. Irizarry
B. Havlovic
A. Nair
C. Clark

Acknowledgements

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West Central Coop, Atlantic	East Pottawattamie SWCD
Practical Farmers of Iowa	Cass County Master Gardeners
Iowa Beef Center	Iowa Farmer Today
Leopold Center for Sustainable Agriculture	Pan Am Seed/Ball Seed Company
All American Seeds	Spring Meadows Nursery
Tri-County Steer Futurity	Farm Credit Services, Red Oak
Steve Jorgensen	Lyman Vet Clinic
Wyffels Hybrids	Mike Muhlbauer
Marlin Rossell	Helena Chemical Company
AgriVision, Massena	Lindeman Ford Tractor, Atlantic
Pioneer Seed Co.	BASF/ASA

The mention of firm names or trade products does not imply that they are endorsed over other firms or similar products not mentioned.

*Armstrong Research and Demonstration Farm
53020 Hitchcock Avenue
Lewis, IA 51544
712-769-2402*

Directions: 11 miles southwest of Atlantic on Highway 6, then ½ mile south on M53 and ¾ mile east on gravel.

Directions to Neely-Kinyon Farm: from Greenfield and the intersection of Highways 92 and 25, go south 2 miles on Highway 25, ½ mile east and ¼ mile north.

Information on Experiments in Previous Annual Progress Reports

Diesel Fuel Consumption During Field Operations RFR-A1374.....	ISRF13-12
Long-term Tillage and Crop Rotation Effects on Soil Carbon and Soil Productivity RFR-A1375.....	ISRF13-12
Phosphorous Availability in Beef Cattle Manure for Corn and Soybean RFR-1386.....	ISRF13-12
Attracting Beneficial Insects to Iowa Agricultural Crops Through Floral Provisioning RFR-A1339.....	ISRF13-12
Evaluation of Tillage, Residue, and Fungicide on Disease Incidence in Continuous Corn Production Systems RFR-A1371	ISRF13-12
Comparison of Ivermectin and Extended-release Eprinomectin Deworming Treatment on Stocker and Subsequent Feedlot Performance and Carcass Characteristics of Fall-born Angus Heifers RFR-A1370	ISRF13-12
Utilization of Pelleted Corn Stover/DDG Feed as Primary Source of Roughage and Protein in Beef Feedlot Rations RFR-A1372.....	ISRF13-12
Colored Plastic Mulches for High Tunnel Tomato Production RFR-A1385	ISRF13-12
Corn and Soybean Production with a Winter Rye Cover Crop-A1280.....	ISRF12-12
Long-term Tillage and Crop Rotation Effects on Soil Carbon and Soil Productivity RFR-A1285	ISRF12-12
Performance of Experimental Biomass Sorghum Hybrids from the ISU Breeding Program RFR-A1292.....	ISRF12-12
Comparison of Organic and Conventional Crops at the Neely-Kinyon Long-term Agroecological Research Site RFR-A1291	ISRF12-12
Potassium Uptake and Recycling to the Soil in Corn and Soybean RFR-A1298.....	ISRF12-12
Seasonal and Rotational Influences on Corn Nitrogen Requirements RFR-A1264.....	ISRF12-12
Weed Management Programs in No-tillage Soybean RFR-1281	ISRF12-12
Mulch and Row Cover Effects on Lettuce Production in a High Tunnel RFR-A1296	ISRF12-12
Effect of Plastic Mulch Color on Tomato Production in High Tunnels RFR-A1295.....	ISRF12-12
Grass-finished Beef Pilot Project: Cattle Performance RFR-A1284.....	ISRF12-12
Impact of Low-stress Handling on Calf Health and Performance RFR-A1297	ISRF12-12
Broadcast and Band Phosphorus and Potassium Placement for Corn and Soybean Managed with Till or No Till RFR-A1197	ISRF11-12
Soil and Plant Fertility Management for Soybeans RFR-A11106.....	ISRF11-12
Elite Soybean Test—South RFR-11103	ISRF11-12
Two Pass Weed Management Programs in Corn RFR-A11199.....	ISRF11-12
Effects of Nematode-Protectant Seed Treatments on Corn Yields and Nematode Population Densities RFR-A11100	ISRF11-12
Evaluation of Foliar Fungicides and Insecticides on Soybeans RFR-A11104.....	ISRF11-12
Rainwater Catchment from a High Tunnel for Irrigation Use RFR-A1198.....	ISRF11-12
High Tunnel Bramble Production RFR-A11102	ISRF11-12
Effects of Stocking Density on Steer Performance and Carcass Characteristics in Bedded Hoop Barns A.S. Leaflet R2695	ISRF11-12