

# Armstrong and Neely-Kinyon Research Farms Summary

RFR-A1369

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Farm Superintendent.....Bernie Havlovic  
 Livestock Specialist .....Dallas Maxwell  
 Livestock Specialist .....Randy Breach  
 Crops Specialist .....Brett McArtor  
 Iowa 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 solar-powered weather station was installed at the Neely-Kinyon Farm. The unit is part of a statewide network of weather stations that have the capability of providing “real-time” soil moisture information along with other types of weather data. The farm’s corn drying bin was renovated this past summer to include a new command center, as well as new augers, roof vents, and burner updates. Load cells were installed under the LP tank and voltage monitoring equipment installed to allow for energy measurements to be made under different grain drying conditions. New equipment purchases this past year included a 350 bushel Hillbros gravity wagon, a Rhino batwing mower, 2 Kawasaki ATVs, and a used JD 6000 high-boy sprayer.

*Field Days and Tours.* The farms held eight events, with a total of 2,045 people attending the various field days, conferences, classes, and group tours.

*New Projects.* Soil hydrogel amendment study, Clarke McGrath; Herbicide residual effects on fall seeded cover crops, Bob Hartzler; Cover crop evaluation, Tom Kaspar; Sorghum as a biomass crop, Maria Salas Fernandez; Corn date of planting study, Brett McArtor; Cover crops into standing corn and soybeans, Matt Helmers; Cover crops for vegetables, Ajay Nair; Farm energy usage study, Mark Hanna; Grafted tomato experiment, Cindy Haynes; Colored bell pepper trial, Ajay Nair; Pasture cattle worming trial, Patrick Gunn; and Pelleted fiber feeding trial, Chris Clark.

*Livestock.* Winter temperatures and snowfall amounts were near normal creating average

winter feedlot conditions. Spring pasture grazing conditions were excellent but deteriorated throughout the dry summer months. By early fall the pastures were short of grass and dust was a problem in feedlots.

### Crop Season Comments

Corn planting got off to a late start on May 12 and was completed on May 16. Corn yields were good, averaging approximately 200 bushels/acre but harvest was late and grain moisture levels were above normal.

Soybean planting started on May 18 and was completed by May 24. Despite the late planting date, soybean yields were above normal averaging 62 bushels/acre.

### Weather Comments

*Winter 2012-2013.* Near normal snowfall amounts and average air temperatures prevailed this past winter. The year’s lowest temperature of -9.3° was recorded on January 21.

*Spring 2013.* Well below normal spring air temperatures and above normal precipitation delayed spring fieldwork. A 5-inch snowfall on May 2 further delayed the planting of area corn and soybeans by up to two weeks.

*Summer 2013.* Air temperatures were above normal throughout the summer allowing for crops to develop at a rapid pace despite the late planting dates. June rainfall was normal but July and August rainfall totals were only 30 percent of normal. By the end of summer, soil moisture levels were considered short and corn and soybean development was slightly behind normal.

*Fall 2013.* Fall rainfall totals were above normal and late fall air temperatures below normal causing a late start to soybean and

corn harvest. Corn grain moisture levels remained high and harvest was not completed until late November. The late season rainfall

helped to replenish the area's soil moisture levels.

**Table 1. Armstrong Research and Demonstration Farm, Lewis, Iowa, monthly rainfall and average temperatures for 2013.**

Month	Rainfall (in.)		Temperature (°F)		
	2013	Deviation from normal	2013	Deviation from normal	Days 90° or above
March	1.45	-0.72	35.7	-6.4	0
April	5.06	+1.67	47.6	-1.4	0
May	7.09	+2.45	62.2	+1.3	1
June	6.01	+1.45	72.3	+1.8	7
July	0.45	-4.02	75.2	+0.9	8
August	1.28	-2.60	74.1	+2.3	7
September	4.38	+0.74	69.2	+2.4	3
October	4.97	+2.55	50.9	-0.7	0
Totals	30.69	+1.52		+0.2	26

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

## Research Farm Projects

<b>Research Project/Demonstration</b>	<b>Project Leader</b>
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 marginal soils	D. Laird
Bio char biomass study on garden plants	C. Haynes
Blackberry trellising study	G. Nonnecke
Cattle pasture worming trial	P. Gunn
Colored bell pepper yield trial	A. Nair
Corn hybrid × crop rotation study	J. Sawyer
Corn and soybean cover crop × nitrogen study	J. Sawyer
Corn fungicide “Cardinal” trial	A. Robertson
Corn residue management study	A. Saeugling
Corn rootworm research	P. Weber/A. Gassmann
Corn planting date trial	B. McArtor/A. Saeugling
Cover crops in an organic crop rotation	K. Delate
Cover crop evaluations in a corn/soybean rotation	T. Kaspar/A. Lenssen
Cover crops seeding into standing corn and soybeans	M. Helmers
Cover crops for vegetable production	A. Nair
Crop residue removal research	M. Al-Kaisi/A. Mallarino/J. Sawyer
Easy Elegance shrub rose trial	B. Havlovic
Evaluation of farm energy usage by corn dryer	M. Hanna
Evaluation of farm energy usage with diesel tractors	M. Hanna
Feedlot manure accumulation study	S. Shouse
Floral provisioning study	M. Gleason
Foliar fertilization of soybeans	A. Mallarino
Forestry biomass study	J. Randall
Grafted tomato trial	C. Haynes
High tunnel bramble trial	B. Havlovic
High tunnel tomato trial with plastic mulch	A. Nair
High tunnel late season lettuce production	A. Nair
Home demonstration garden	C. Haynes
Home demonstration orchard	B. Havlovic
Iowa Gold specialty soybean trial	K. Scholbrock
ISU bull development project	A. Markey/J. Reecy
K-fertility × placement study	A. Mallarino
Long-term organic rotation study	K. Delate
Long-term tillage/crop rotation study (3)	M. Al-Kaisi
Micronutrients on soybeans	A. Mallarino
Miscanthus grass establishment study-Armstrong	E. Heaton
Nitrogen rates/crop rotation study	J. Sawyer
“On Farm” corn and soybean management studies (6)	J. Rogers/A. Saeugling
Organic grape study	K. Delate
Organic soybean disease control study	K. Delate

<b>Research Project/Demonstration (continued)</b>	<b>Project Leader</b>
Organic vegetable production with cover crops	K. Delate
P-fertility × placement study	A. Mallarino
Pelleted fiber feeding trial for finishing cattle	C. Clark
Phosphorous in feedlot manure fertility study	A. Mallarino
Potassium × corn hybrid study	A. Mallarino
Residual herbicide effects on cover crops	B. Hartzler
Soil hydrogel amendment study on corn and soybeans	C. McGrath
Sorghum as a biomass crop	M. Fernandez
Soybean fungicide evaluations	A. Robertson
Spring Valley flowering shrub trial	B. Havlovic

### 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, Red Oak
Adair County Pork Producers	Adair County Beef Producers
Merial	Lyman Vet Clinic
Iowa Agricultural BioFibers	Mike Muhlbauer
Marlin Rossell	Sorenson Equipment, Harlan
AgriVision, Massena	Lindeman Ford Tractor, Atlantic
Pioneer Seed Co.	Titan Equipment, Avoca
BASF/ASA	Steve Jorgensen

*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

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 N0-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
Sorghum Biomass Yield Trial for Ethanol Production RFR-A1088 .....	ISRF10-12
Miscanthus Establishment and Survival RFR-A1077 .....	ISRF10-12
Modified Oil Soybean Test---South RFR-A1083.....	ISRF10-12
Soil pH change as Affected by the Lime Source and Application Rates RFR-A1095 .....	ISRF10-12
Pest Damage Effects: Evaluating the Benefits of Perimeter Trap Cropping and Row Intercropping RFR-A1092.....	ISRF10-12
Early Planting of Tomatoes in a High Tunnel with Plant Coverings RFR-A1089 .....	ISRF10-12
Effects of Leaf Removal on Fruit Quality of Wine Grapes Grown in Iowa RFR-A1046.....	ISRF10-12
Performance and Carcass Traits of Market Beef Cattle Supplemented Self-Fed Byproducts on Pasture: Final Report ASL R2592 .....	ISRF10-12