Armstrong and Neely-Kinyon Research Farms Summary

RFR-A16114

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Garry Pellett, Clark BreDahl

Staff

Farm Superintendent ..................Dallas Maxwell
Administrative Specialist……Paulette Cambridge
Agricultural Specialist ............Randy Breach
Crops Specialist ..............Dan Schaben
Iowa On-Farm Ag Specialist ... Jim Rogers
Mark Honeyman ......... Farms Coordinator
Tim Goode ......................... Farms Manager
103 Curtiss Hall
513 Farm House Lane, ISU
Farm and Weather Summary

Dallas Maxwell, superintendent

Farm Comments

Developments. The farm acquired a new weigh wagon for On-Farm studies and had extensive tiling work done at the Neely-Kinyon Farm. Donations received totaled more than $28,500 for both farms.

Field days and tours. The farms held four events with a total of 931 people attending the various field days, conferences, classes, and group tours. Among the farm events were the Wyffels Ag Career Day, IWCC and FFA soil judging contest, and a Weed Field Day led by Aaron Saeugling, extension crop specialist.

New projects. Standability trial, A. Robertson; FACTS (yield forecasting), S. Archontoulis; Soybean breeding, D. Singh; True Army Worm Moth monitoring, A. Sisson; STRIPS bowl study (N/K), M. Helmers; Monarch habitat, R. Hellmich; Monarch Habitat (NK), R. Hellmich; Herbicide rates trial, A. Saeugling and J. Rogers; Cover crop demonstration, A. Saeugling and J. Rogers.

Livestock. Winter snowfall was below normal. Temperatures were moderate with rain in December and January instead of snow. Muddy lots and ice were challenges in the feedlots.

Crop Season Comments

Corn planting was slightly delayed due to weather, but ended up being completed by early May. Harvest started late September with soybean struggling to dry due to the August precipitation and high humidity.

Yields were good with corn averaging 198 bushels/acre and soybean averaging 64 bushels/acre.

Weather Comments

Winter 2015-2016. Last winter seemed to get off to a slow start with an unusually warm December that included over 4.5 in. of rain. Temperatures returned to normal January-February, with approximately 14 in. of snowfall.

Spring 2016. Spring operations started mid-March thanks to favorable weather conditions. April-May conditions caused planting challenges as field working days were reduced due to rainfall events. The staff worked together efficiently and all corn was planted by May 7 and soybean by May 20.

Summer 2016. Except for a “mini” drought experienced June 1-19, rainfall was very favorable for the growing season. The growing season average temperature was 62.8°F. 2016 recorded 17 days over 90°F, which was more than double the amount of days over 90°F in 2015. The Armstrong Farm recorded 11 in. more rain than the Neely-Kinyon Farm.

Fall 2016. October was tricky for harvest. The farm recorded almost 3 in. of rain in October. The soybean struggled to dry down due to late summer rainfall and high humidity during October. The favorable weather in November led to fall field work getting done in a timely fashion.
Table 1. Armstrong Research and Demonstration Farm, Lewis, monthly rainfall and average temperature for 2016.

<table>
<thead>
<tr>
<th>Month</th>
<th>Rainfall (in.)</th>
<th>Deviation from normal*</th>
<th>Temperature (°F)</th>
<th>Deviation from normal*</th>
<th>Days 90° or above above</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>1.37</td>
<td>-0.33</td>
<td>44.3</td>
<td>+7.5</td>
<td>0</td>
</tr>
<tr>
<td>April</td>
<td>6.66</td>
<td>+3.96</td>
<td>51.2</td>
<td>+2.1</td>
<td>0</td>
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<tr>
<td>May</td>
<td>7.84</td>
<td>+3.94</td>
<td>60.6</td>
<td>-0.3</td>
<td>0</td>
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<tr>
<td>June</td>
<td>2.84</td>
<td>-2.16</td>
<td>75.3</td>
<td>+4.8</td>
<td>9</td>
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<tr>
<td>July</td>
<td>6.89</td>
<td>+3.49</td>
<td>73.5</td>
<td>-0.8</td>
<td>1</td>
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<tr>
<td>August</td>
<td>5.39</td>
<td>+1.39</td>
<td>72.4</td>
<td>+0.6</td>
<td>4</td>
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<tr>
<td>September</td>
<td>5.19</td>
<td>+1.69</td>
<td>68.3</td>
<td>+1.6</td>
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<tr>
<td>October</td>
<td>2.96</td>
<td>+0.56</td>
<td>56.9</td>
<td>+5.3</td>
<td>0</td>
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<tr>
<td>Totals</td>
<td>39.14</td>
<td>+12.54</td>
<td></td>
<td></td>
<td>17</td>
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</tbody>
</table>

*Normal rainfall hand recorded at the Armstrong Research Farm every day at 8:00 A.M.
### Research Farm Projects

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Researcher(s)</th>
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</thead>
<tbody>
<tr>
<td>Biochar biomass study on marginal soils</td>
<td>D. Laird</td>
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<tr>
<td>Black cutworm moth monitoring</td>
<td>A. Sisson</td>
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<tr>
<td>Blackberry trellising study</td>
<td>G. Nonnecke</td>
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<tr>
<td>Corn fungicide “Cardinal” trial</td>
<td>A. Robertson</td>
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<tr>
<td>Corn hybrid x date of planting study</td>
<td>M. Licht</td>
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<tr>
<td>Corn rootworm research</td>
<td>P. Weber</td>
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<tr>
<td>Cover crop demonstration</td>
<td>A. Saeugling/J. Rogers</td>
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<tr>
<td>Cover crop x tillage &amp; N starter</td>
<td>J. Sawyer</td>
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<tr>
<td>Cover crops seeding into standing corn and soybeans</td>
<td>E. Juchems</td>
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<tr>
<td>Crop residue removal research</td>
<td>M. Al-Kaisi/A. Mallarino/J. Sawyer</td>
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<tr>
<td>Evaluation of farm energy usage for drying corn</td>
<td>M. Hanna</td>
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<tr>
<td>FACTS (yield forecasting) study</td>
<td>S. Archontoulis</td>
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<tr>
<td>Feedlot runoff study</td>
<td>S. Shouse</td>
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<tr>
<td>Herbicide rate trial</td>
<td>A. Saeugling/J. Rogers</td>
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<td>Home demonstration garden</td>
<td>C. Haynes</td>
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<td>ISU bull development project</td>
<td>J. Williams/J. Reecy</td>
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<td>K-fertility x placement study</td>
<td>A. Mallarino</td>
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<td>Lime study</td>
<td>A. Mallarino</td>
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<td>Long term organic rotation study</td>
<td>K. Delate</td>
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<td>Long-term tillage/crop rotation study (3)</td>
<td>M. Al-Kaisi</td>
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<td>Miscanthus grass establishment study-Armstrong</td>
<td>E. Heaton</td>
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<td>Monarch habitat (ARF and N-K)</td>
<td>R. Hellmich</td>
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<tr>
<td>Neonicotinoid trial</td>
<td>D. Mueller</td>
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<tr>
<td>Nitrogen rates x nitrogen application timing study</td>
<td>J. Sawyer</td>
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<tr>
<td>Nitrogen rates/crop rotation study</td>
<td>J. Sawyer</td>
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<tr>
<td>On-farm corn and soybean management studies (6)</td>
<td>J. Rogers/A. Saeugling</td>
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<td>Organic grape study</td>
<td>K. Delate</td>
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<td>Organic soybean disease control study</td>
<td>K. Delate</td>
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<td>Organic vegetable production with cover crops</td>
<td>K. Delate</td>
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<tr>
<td>Phosphorous x placement study</td>
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<td>Potassium x corn hybrid (old k) study</td>
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<td>Sorghum as a biomass crop</td>
<td>M. Fernandez</td>
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<td>Soybean breeding study (4)</td>
<td>D. Singh</td>
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<td>Soybean cultivar x date of planting study</td>
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<tr>
<td>Soybean fungicide evaluations</td>
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<tr>
<td>Standability study</td>
<td>A. Robertson</td>
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<td>Starter application study</td>
<td>M. Licht</td>
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<tr>
<td>STRIPS bowl (ARF and N-K)</td>
<td>M. Helmers</td>
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<tr>
<td>True armyworm moth monitoring</td>
<td>A. Sisson</td>
</tr>
<tr>
<td>Weather station</td>
<td>E. Taylor</td>
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</tbody>
</table>
Acknowledgements

Shivvers Manufacturing
Atlantic Chamber of Commerce
KJAN Radio, Atlantic
Landus Coop, Atlantic
Practical Farmers of Iowa
Iowa Beef Center
Leopold Center for Sustainable Agriculture
Cyclone Seed and Chemical
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Lyman Vet Clinic
Wyffels Hybrids
Marlin Rossell
AgriVision, Massena
Pioneer Seed Co.
Sandbothe Firestone
Iowa Western Community College
Southwest Iowa Tiling

Atlantic News Telegraph
KMA Radio, Shenandoah
Dennis Jipsen Seeds
East Pottawattamie SWCD
Cass County Master Gardeners
Iowa Farmer Today
Scoular Grain
Spring Meadows Nursery
Farm Credit Services, Red Oak
21st Century Coop
Mike Muhlbauer
Becks Hybrids
Lindeman Ford Tractor, Atlantic
BASF/ASA
Cass County NRCS
Lamb Tiling

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

Comparison of Untreated Mature Switchgrass and Cornstalks
as Roughage in Beef Cattle Feedlot Diets A.S. Leaflet R2953 ..........................ISRF15-12
Effect of Calcium Hydroxide Treatment on Switch Grass A.S. Leaflet R2943 ....ISRF15-12
On-Farm Corn, Soybean, and Alfalfa Fertilizer Trial RFR-A1557 ........................ISRF15-12
Monarch Oviposition and Larval Survival on Nine Native Milkweed Species
RFR-A1508 ..................................................ISRF15-12
Integrating Strips of Native Prairie into Rowcrop Agricultural Fields RFR-A1572 ....ISRF15-12
Soybean Date of Planting and Maturity in Southwest Iowa RFR-A1565 ....ISRF15-12
Cover Crop Options and Mixes for the Upper Midwest: Is a Winter Rye Monoculture the
Only Option RFR-A1526 ........................................ISRF15-12
Corn Date of Planting and Maturity in Southwest Iowa RFR-A1564 ........................ISRF15-12
Iowa Soils RFR-A1507 ..........................................ISRF15-12
Chronology of the Wallace Foundation for Rural Research and Development,
Armstrong Research Farm, and Neely-Kinyon Research farm RFR-A1501 ........ISRF15-12
Comparison of Organic and Conventional Crops at the Neely-Kinyon
Long-term Agroecological Research Site RFR-A1568 ....................................ISRF15-12
On-Farm Sulfur Fertilization of Corn and Soybean Trials RFR-A1560 ....ISRF15-12
Long-term Tillage and Crop Rotation Effects on Soil Carbon
and Soil Productivity RFR-A1548 ................................................ISRF15-12
Elite Soybean Test—South RFR-A1376 ..................................................ISRF14-12
Effectiveness of Foliar Fungicides by Timing on Northern Leaf Blight
on Hybrid Corn in Southwest Iowa RFR-A1465 .........................................ISRF14-12
On-Farm Corn Row Spacing Trials RFR-A1433 ........................................ISRF14-12
Effects of Label Dose Permethrin Use in Yearling Angus Beef Bulls
on Reproductive Function and Testicular Histopathology A.S. Leaflet R2958 ....ISRF14-12
Corn and Soybean Yield Response to Micronutrients
in Southwest Iowa RFR-A1466 ..................................................................ISRF14-12
Diesel Fuel Consumption During Field Operations RFR-A1374 ........................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
Corn and Soybean Production with a Winter Rye Cover Crop-A1280 ........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
Broadcast and Band Phosphorus and Potassium Placement for Corn
and Soybean Managed with Till or No Till RFR-A1197 ............................ISRF11-12