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Armstrong and Neely-Kinyon Research Farms Summary

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Armstrong and Neely-Kinyon Research Farms Summary

Abstract
Contains the Farm and Weather Summary for the Armstrong and Neely-Kinyon Research Farms, and a list of Information on Experiments in Previous Annual Progress Reports.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences | Natural Resources and Conservation
Armstrong and Neely-Kinyon Research Farms Summary

RFR-A1485

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Staff

Farm Superintendent ........... Bernie Havlovic
Livestock Specialist .......... Dallas Maxwell
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.

<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</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>0.79</td>
<td>-1.38</td>
<td>32.7</td>
<td>-4.0</td>
<td>0</td>
</tr>
<tr>
<td>April</td>
<td>4.38</td>
<td>+0.99</td>
<td>48.5</td>
<td>-0.5</td>
<td>0</td>
</tr>
<tr>
<td>May</td>
<td>3.48</td>
<td>-1.07</td>
<td>62.1</td>
<td>+1.2</td>
<td>1</td>
</tr>
<tr>
<td>June</td>
<td>9.93</td>
<td>+5.37</td>
<td>70.5</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>July</td>
<td>2.28</td>
<td>-2.28</td>
<td>69.8</td>
<td>-4.5</td>
<td>0</td>
</tr>
<tr>
<td>August</td>
<td>11.07</td>
<td>+7.19</td>
<td>72.4</td>
<td>+0.6</td>
<td>0</td>
</tr>
<tr>
<td>September</td>
<td>6.25</td>
<td>+2.61</td>
<td>63.3</td>
<td>-3.3</td>
<td>0</td>
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<tr>
<td>October</td>
<td>4.52</td>
<td>+2.25</td>
<td>59.9</td>
<td>+8.3</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>42.70</td>
<td>+13.68</td>
<td>59.9</td>
<td>-2.2</td>
<td>1</td>
</tr>
</tbody>
</table>

*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
<table>
<thead>
<tr>
<th>Project/Demonstration (continued)</th>
<th>Project Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home demonstration garden</td>
<td>C. Haynes</td>
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<tr>
<td>Home demonstration orchard</td>
<td>B. Havlovic</td>
</tr>
<tr>
<td>ISU bull development project</td>
<td>J. Williams/J. Reecy</td>
</tr>
<tr>
<td>K-fertility × placement study</td>
<td>A. Mallarino</td>
</tr>
<tr>
<td>Long term organic rotation study</td>
<td>K. Delate</td>
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<tr>
<td>Long-term tillage/crop rotation study (3)</td>
<td>M. Al-Kaisi</td>
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<tr>
<td>Marrone corn fungicide evaluation study</td>
<td>A. Robertson</td>
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<tr>
<td>Micro-nutrients on soybeans</td>
<td>A. Mallarino</td>
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<tr>
<td>Miscanthus grass establishment study-Armstrong</td>
<td>E. Heaton</td>
</tr>
<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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<tr>
<td>Organic grape study</td>
<td>K. Delate</td>
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<tr>
<td>Organic soybean disease control study</td>
<td>K. Delate</td>
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<tr>
<td>Organic vegetable production with cover crops</td>
<td>K. Delate</td>
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<tr>
<td>P-fertility × placement study</td>
<td>A. Mallarino</td>
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<tr>
<td>Potassium × corn hybrid study</td>
<td>A. Mallarino</td>
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<tr>
<td>Prairie grass buffer strip study</td>
<td>M. Helmers</td>
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<tr>
<td>Sorghum as a biomass crop</td>
<td>M. Fernandez</td>
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<tr>
<td>Soybean cultivar × date of planting study</td>
<td>M. Licht</td>
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<tr>
<td>Soybean fungicide evaluations</td>
<td>D. Mueller</td>
</tr>
<tr>
<td>Soybean thrips monitoring project</td>
<td>M. Irizarry</td>
</tr>
<tr>
<td>Spring Valley flowering shrub trial</td>
<td>B. Havlovic</td>
</tr>
<tr>
<td>Tomato grafting study in a high tunnel</td>
<td>A. Nair</td>
</tr>
<tr>
<td>Utilization of switch grass in a feedlot ration</td>
<td>C. Clark</td>
</tr>
</tbody>
</table>
Acknowledgements

Shivvers Manufacturing
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Leopold Center for Sustainable Agriculture
All American Seeds
Tri-County Steer Futurity
Steve Jorgensen
Wyffels Hybrids
Marlin Rossell
AgriVision, Massena
Pioneer Seed Co.

Atlantic News Telegraph
KMA Radio, Shenandoah
Dennis Jipsen Seeds
East Pottawattamie SWCD
Cass County Master Gardeners
Iowa Farmer Today
Pan Am Seed/Ball Seed Company
Spring Meadows Nursery
Farm Credit Services, Red Oak
Lyman Vet Clinic
Mike Muhlbauer
Helena Chemical Company
Lindeman Ford Tractor, Atlantic
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