2013

Armstrong and Neely-Kinyon Research Farms Summary

Armstrong and Neely-Kinyon Research and Demonstration Farms

Bernard J. Havlovic
Iowa State University, bhavlovi@iastate.edu

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Abstract
Farm and Weather Summary; Research Farm Reports; Acknowledgements; Information on Experiments in Previous Annual Progress Reports

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Armstrong and Neely-Kinyon Research Farms Summary

RFR-A1280

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                                 Mark Bentley, Clarke BreDahl, Gary Pellett

Staff
Farm Superintendent......... Bernie Havlovic
Livestock Specialist ........... Dallas Maxwell
Livestock Specialist ........... Randy Breach
Crops Specialist ............... Kirk Schwarte
Iowa FARM Ag Specialist..... Jim Rogers
Admin Specialist........... Leann Plowman-Tibken

                     Farms Coordinator .......... Mark Honeyman
                         Farms Manager .......... Dennis Shannon
                                      103 Curtiss, ISU
Farm and Weather Summary

Bernie Havlovic, farm superintendent

Farm Comments

Developments. New entrance signs were installed at both the Armstrong and Neely-Kinyon Research Farms. The farm installed 2,500 ft of drainage tile at the Neely-Kinyon Farm to improve soil drainage in the field plots and pasture. The Armstrong Farm shop, a metal storage building and a grain bin were cleaned and painted this past summer. A metal 10 ft x 24 ft portable shade structure was fabricated for use in the pasture grazing trials. Offices and hallways of the farm’s Wallace Learning Center had carpet replaced, received a new coat of paint, and tile was laid in the entry and kitchen areas. New equipment purchases this past year included a John Deere 6410D feed wagon tractor, a 472 bushel Brent grain cart with scale, a 350 bushel Hillbros gravity wagon, and a Ford F250 pickup.

Field Days and Tour. The farms held seven events, with a total of 942 people attending the various field days, conferences, classes, and group tours.

New Projects. Bio char on horticultural crops, C. Haynes; Micro nutrients for soybeans, A. Mallarino; Foliar fertilizer applications of micronutrients to soybeans, A. Mallarino; Post applied nitrogen to continuous corn, J. Sawyer; Goss’s wilt control in continuous corn, A. Robertson; Sorghum trials for biomass (2), M. Salaz-Fernandez; Colored plastic mulches for high tunnel tomato production, A. Nair; Late season lettuce production in a high tunnel, A. Nair; Blackberry trellising system evaluation, G. Nonnecke; Floral provisioning study, M. Gleason; Post herbicides for horseweed control in soybeans (2), M. Owen; ISA BASF soybean study, D. Mueller; Corn and soybean insect control studies (2), E. Hodgson; Development of ISU breeding bulls, JR Tait; Pasture vs. feedlot finishing of heifers, M. Honeyman; Multi mineral injection study for feedlot cattle, S. Hansen.

Livestock. Mild winter temperatures and below normal snowfall created good winter feedlot conditions. Spring pasture grazing conditions were good but deteriorated steadily as the hot and dry summer months progressed. By summer’s end the feedlot conditions were very dusty and pastures were short of grass.

Crop Season Comments

Corn planting started on April 23 and was completed on May 16. Corn yields on the farm averaged 138 bushels/acre and were the second lowest in the farm’s 19-year history.

Soybean planting started on May 9 and was completed on May 22. The average soybean yield of 43 bushels/acre was also well below the farm’s average.

Weather Comments

Winter 2011-2012. Below normal snowfall and mild temperatures prevailed this past winter. The year’s lowest temperature of -2.8°F was recorded on February 12.

Spring 2012. Record high temperatures brought an unusually early spring but a killing frost on April 11 harmed to the farm’s horticultural crops and shrubs. Below normal spring rainfall combined with warm temperatures allowed for early planting of row crops. By the end of spring, corn and soybean crop development was ahead of normal.

Summer 2012. The pattern of record setting warm air temperatures continued into the summer months. Daily maximum high temperatures exceeding 90°F occurred on 67 days during the growing season. Recorded summer rainfall was only 60 percent of
normal with no rainfall recorded for the month of July. By the end of summer, drought stress symptoms to corn and soybeans were evident in most area fields.

Fall 2012. Drought conditions persisted into the fall months. The stressed crops matured early and corn and soybean harvest was completed earlier than normal. Soil moisture levels were estimated to be well below normal by the end of the growing season.

Table 1. Armstrong Research and Demonstration Farm, Lewis, monthly rainfall and average temperatures for 2012.

<table>
<thead>
<tr>
<th></th>
<th>Rainfall (in.)</th>
<th>Temperature (°F)</th>
<th>Days 90° or above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>2012</td>
<td>Deviation from normal</td>
<td>2012 Deviation from normal</td>
</tr>
<tr>
<td>March</td>
<td>2.19</td>
<td>+0.02</td>
<td>56.0 -2.7</td>
</tr>
<tr>
<td>April</td>
<td>1.02</td>
<td>-2.37</td>
<td>56.6 +2.8</td>
</tr>
<tr>
<td>May</td>
<td>2.41</td>
<td>-2.14</td>
<td>68.5 +0.9</td>
</tr>
<tr>
<td>June</td>
<td>4.48</td>
<td>-0.08</td>
<td>75.3 +2.2</td>
</tr>
<tr>
<td>July</td>
<td>0.00</td>
<td>-4.56</td>
<td>82.3 +6.5</td>
</tr>
<tr>
<td>August</td>
<td>2.56</td>
<td>-0.82</td>
<td>74.2 +3.1</td>
</tr>
<tr>
<td>September</td>
<td>1.63</td>
<td>-2.01</td>
<td>64.9 +4.5</td>
</tr>
<tr>
<td>October</td>
<td>3.43</td>
<td>+1.01</td>
<td>51.7 +2.7</td>
</tr>
<tr>
<td>Totals</td>
<td>17.72</td>
<td>-11.45</td>
<td>66.3 +5.4</td>
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</tbody>
</table>

*Normal rainfall recorded at the U.S. Weather Bureau Station, Atlantic, IA.*
## Research Farm Projects

<table>
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<th>Project Leader</th>
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<td>All-America selections garden</td>
<td>B. Havlovic</td>
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<tr>
<td>Bailey flowering shrub and hardy rose demonstrations</td>
<td>B. Havlovic</td>
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<td>Ball seed/Pan American seed flower trial</td>
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<td>D. Laird</td>
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<td>Bio char biomass study on garden plants</td>
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<td>Blackberry trellising study</td>
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<td>Beef multi-mineral injection for quality grade enhancement</td>
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<tr>
<td>Corn herbicide evaluations</td>
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<tr>
<td>Corn hybrid x crop rotation study</td>
<td>J. Sawyer</td>
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<tr>
<td>Corn and soybean cover crop x nitrogen study</td>
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<tr>
<td>Corn fungicide “Cardinal” trial</td>
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<tr>
<td>Corn residue management study</td>
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<tr>
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<td>M. Al-Kaisi/A. Mallarino/J. Sawyer</td>
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<td>High tunnel bramble trial</td>
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<td>High tunnel tomato trial with plastic mulch</td>
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<td>High tunnel rainwater catchment study</td>
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<td>Nitrogen rates on continuous corn study</td>
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<td>No-till pasture renovation demonstration</td>
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<td>Organic grape study</td>
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<td>Organic soybean disease control study</td>
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**Research Project/Demonstration (continued)**

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<th>Project Description</th>
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<td>Organic vegetable production with cover crops</td>
<td>K. Delate</td>
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<td>Pasture finishing of beef cattle study</td>
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<td>Phosphorous in feedlot manure fertility study</td>
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<td>Soybean fungicide evaluations</td>
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<tr>
<td>Spring Valley flowing shrub trial</td>
<td>B. Havlovic</td>
</tr>
</tbody>
</table>

## Acknowledgements

Pat Lewis Trucking  
Atlantic Chamber of Commerce  
KJAN Radio, Atlantic  
West Central Coop, Atlantic  
Practical Farmers of Iowa  
Iowa Beef Center  
Leopold Center For Sustainable Agriculture  
All-America Seeds  
Tri-County Steer Futurity  
Adair County Pork Producers  
Pfizer Animal Health  
A&M Green Power, Massena  
Pioneer Hi-Bred International, Inc.  
Steve Jorgensen

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, Red Oak  
Adair County Beef Producers  
Fort Dodge Animal Health  
Lindeman Ford Tractor, Atlantic  
Titan Equipment, Avoca

*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 ¾ mile north.
Information on Experiments
in Previous Annual Progress Reports

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
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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
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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
Soybean Plant Density Effect on Oil Composition ....................................ISRF09-12
Comparison of Organic and Conventional Crops at the Neely-Kinyon
    Long-term Agroecological Research Site RFR-A9105 .........................ISRF09-12
Long-term Evaluation of Tillage Systems and Fertilizer Placement
    Methods for Corn and Soybeans RFR-A9104 ......................................ISRF09-12
Seasonal and Rotational Influences on Corn Nitrogen
    Requirements RFR-A9076 ........................................................ISRF08-12
Nitrogen Fertilization of Corn Crown with a Cover Crop RFR-A9075 ...............ISRF09-12
Effectiveness of Foliar Fungicides by Timing on Hybrid Corn in
    Iowa RFR-A9080 ...............................................................ISRF09-12
Durability of Corn Expressing Bacillus thuringiensis Insecticidal
    Proteins in Single and Staked Events RFR-A9100 ................................ISRF09-12
Companion Planting: A Method for Sustainable Pest Control
    RFR-A9099 .................................................................ISRF09-12
Pumpkin and Winter Squash Weed Control RFR-A9037 ................................ISRF09-12
High Tunnel Tulip Production RFR-A9006 .............................................ISRF09-12