Andrew Jackson Demonstration Farm
Purpose and Goals

The Andrew Jackson Demonstration Farm (AJDF) was established to provide a site to demonstrate new farming practices. Like the public, the AJDF Corporation is concerned with food safety and water quality, as well as keeping agriculture productive and profitable. The following goals help guide the AJDF Corporation in carrying out the various demonstrations and educational activities on the farm:

*To provide a link between researchers and farmers.
*To help farmers evaluate and adopt emerging technologies.
*To increase public awareness of food production practices.

The AJDF Board of Directors manages and oversees the operation of the farm. As part of this process, they solicit public and private organizations to develop demonstrations that address current issues in agriculture. Technical assistance is provided by Iowa State University Extension and the Soil Conservation Service. Assistance with operating capital is provided by the ISU Agricultural Foundation through a revolving loan program.

This booklet summarizes some of the current demonstration projects at the farm. The Andrew Jackson Demonstration Farm welcomes inquiries about the demonstration projects and educational activities. Please feel free to visit with the board of directors about the projects. Additional information can be obtained by contacting the AJDF Corporation, c/o ISU Extension, 201 West Platt, Maquoketa, IA 52060.

1993 Board of Directors

Gerald Cornelius - President
Charlie Schneckloth - Vice President
Wayne Kieffer - Secretary
Don Casteel - Treasurer
Bud Knake
Gary Kunde
Floyd Peters

The board of directors would like to thank the ISU Agriculture Foundation for their support of the Andrew Jackson Demonstration Farm.
1993 Membership

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Don Casteel Gerald Cornelius John Deppe
J.C. & Arlene Engel Hawkeye Bank of Maquoketa Bill Goettler
Loras Hartung Larry Hingtgen James Howell
Larry & Sharon Jepsen Warren Johnson Wayne Kieffer
Harold Kiel Keith Kleis Leonard W. Klunder
Bud Knake Joe Kueter Tom Kueter
Gary Kunde William Kuper Bill Lamb
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Mark Miller Norlin Mommsen Pat O'Rourke
Harris Penrose Floyd Peters M.O. Pitcher
Don Reuter Joey Sander Charlie Schneckloth
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Sprenger Erwin Stamp Bill Sheehan Springer
Thomas Stewart Dale Stillmunkes Darold Stuhr
Brian & Dave Tabor Steve Tebbe Jim Till
Ed Tubbs Cletus Victor John Wilson
Hawkeye Bank of Dubuque John Fagerland

Field Days and Educational Activities

The annual field day was held on August 18. The Jackson County Cattlemen served a beef dinner and those in attendance were enlightened as to the progress of AJDF demonstration projects. Tour speakers included representatives from ISU Extension, Soil Conservation Commission and agribusiness.

The Eastern Iowa Angus Tour scheduled a stop at the AJDF on September 11. Tony Harvey, Field Specilaist Dairy/Beef presented a program on the heifer development project.

Improvement Projects

During the past year, the roof on the cattle shed was replaced with a $3508.26 steel roof. This should allow this building to remain in service for many more years. Through the year, many individuals volunteered labor to clean up the farm and to remove old fence.

Annual Report Staff

Don Casteel, AJDF Treasurer Financial Statement
Warren Johnson, SCS Compost Project
Virgil Schmitt, ISU Spec. Crops Crops Projects
Tony Harvey, ISU Spec. Dairy/Beef Heifer Project
Gary Vogt, ISU Spec. Farm Management 1994 Budgets
Rich Hainstock, ISU County Director Report Preparation

1993 Financial Statement
Andrew Jackson Demonstration Farm

**Beginning Networth 12/1/92:**

**Assets:**
- Checking Account $1,464.74
- Savings Account $0.00
- Accounts Receivable $25,045.62
- Corn (7165 bushels @ $2.10) $15,046.50
- Hay (13 bales @ $35) $3,930.00
- Hay (300 bales @ $1.25) $375.00
- Livestock Equipment $800.00

  Subtotal $46,661.86

**Liabilities:**
- ISU Ag Foundation $17,500.00
- Outstanding Bills $6,263.62

  Subtotal $23,763.62

**Net Worth:**

$22,898.24

**Ending Net Worth (12/1/93)**

**Assets:**
- Checking Account $8,470.69
- Accounts Receivable (hay sold) $2,705.00
- L.P. Gas (prepaid) $603.68
- Corn (now sold) $13,117.61
- 2865.96 bu@$2.25 (bin inv) $7,594.79
- Hay - 100 large bales @ $30.00 $3,000.00
- Livestock Equipment $700.00
- Tractor and loader $6,000.00
- Mower $330.00
- Bred Heifers (9) 8 (now sold) $7,250.00
  - 1 inventory $800.00

  Subtotal $50,571.77

**Liabilities:**
- Ag Foundation $20,000.00
- Outstanding bills:
  - Custom farm $4,750.00
  - Reseed N.K. 423.50
  - Advertise-Shopper 3.00 $5,176.50

  Subtotal $25,176.50

**Net Worth:**

$25,395.27

**Change in Net Worth:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Beginning Net Worth</th>
<th>Ending Net Worth</th>
<th>Change in Net Worth</th>
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<tbody>
<tr>
<td>Beginning Net Worth</td>
<td>$22,898.24</td>
<td></td>
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</tr>
<tr>
<td>Ending Net Worth</td>
<td></td>
<td>$25,395.27</td>
<td>$2,497.03</td>
</tr>
<tr>
<td>Change in Net Worth</td>
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</tbody>
</table>

**Note:** Assets do not include the following improvements which were made to the farm. These improvements are not recoverable by the corporation.

- Barn roof and repair $3,508.26
- Fencing $605.00

Andrew Jackson Demonstration Farm
Compost Project
AJDF Corporation and Soil Conservation Service

The proposed compost project was designed to evaluate the effects of compost on soil tilth and fertilizer levels.

The four plots are located on the east side of the road below the new transfer station.

The proposal called for four 1/4 acre plots to be laid out and soil samples taken in the Fall of 1992. This was completed.

The compost was applied in the Spring of 1993 on the four plots at the following rates:

- Plot 1 (102) - 0 tons
- Plot 2 (202) - 20 tons
- Plot 3 (201) - 40 tons
- Plot 4 (101) - 60 tons

Tillage was done to incorporate the compost and the corn planted. Corn was planted on June 10th due to the extremely wet spring conditions.

Hand yield checks were done to see the results of the project. The results were as follows:

- 102 - Check 79.3 bu/ac dried corn
- 101 - 60T/ac. 84.9 bu/ac dried corn
- 202 - 20T/ac. 93.9 bu/ac dried corn
- 201 - 40T/ac. 85.7 bu/ac dried corn

The plots were not replicated as helped since the amount of compost was limited. Purchased 60 tons of compost from the Cedar Rapids Solid Waste Agency.

Plots are to be sampled again in 1994.
Summary of AJDF Crops Projects for 1993

General Comments

In general, 1993 was as frustrating for the crops program at the Andrew Jackson Demonstration Farm (AJDF) as for most traditional farmers. Lack of timeliness, due to nearly continuous rain, prevented or rendered useless many projects. A summary follows.

Forages

Economics of Cash Alfalfa Production - Gary Vogt prepared a one-page front-and-back analysis comparing various options for conservation compliance, which included various levels of alfalfa production. This information was presented at the August Field Day. Alfalfa production compared very favorably.

Direct Seeding of Alfalfa - The Spring direct seedings on the AJDF were a virtual failure, as were seedings on many other farms. These areas were destroyed and reseeded in August; a late-spring seeding demonstration at the field day was rained out. Although the stand is not perfectly uniform, it is quite acceptable.

Interseeding Marginal Alfalfa Stands - Marginal alfalfa stands were interseeded with red clover, perennial ryegrass, and alfalfa. The alfalfa was interseeded in a stand established in 1992; the interseeding did not establish, either due to competition from the original plants or due to reasons other seeding did not establish. The red clover and perennial ryegrass established fairly well; the perennial ryegrass was expected to only last through 1993 while the red clover was expected to last through 1994. A Fall survey of the fields indicated a high likelihood that many, if not all, the fields established in 1992 and before had deteriorated through the summer of 1993 and will need to be rotated in 1994.

Corn

Phosphorus and Potassium Placement demonstrations were abandoned as starter placement was impossible; the saturated ground could not support the planter loaded with fertilizer.

Anhydrous Ammonia (NH₃ - 82-0-0) versus Ureated Ammonium Nitrate (UAN - 28-0-0) applied at planting time demonstrations were abandoned as the saturated ground could not support the UAN tank.

Rootworm Management demonstrations were abandoned as planting did not occur until nearly mid-June, and the rootworm larvae had starved to death on about June 5.
Soybeans

**Nitrogen Application to Soybeans at Pod Set** - Although the request for spraying was submitted in late August, the spraying did not occur until literally a few days before the first killing frost. As there was not possibility of obtaining meaningful results in this scenario, no data or observations were collected.
**Multiflora Rose Control**

**Multiflora Rose** were treated on June 23 and evaluated on July 23 and August 23, 1993. Although this was later than normal, the plants were at the proper stage (blooming) when sprayed; the weather apparently delayed normal progress of the plants. The purpose was to observe and demonstrate the effectiveness of a variety of general-use pesticides to control multiflora rose. Eight treatments were applied to eight sets of three roses. The following treatments and methods were used in the demonstration:

1. Ally - 1 ounce Ally + 1 pint of X-77 in 100 gallons of water applied foliarly to the point of drip-off.
2. Banvel - 1% solution applied foliarly to the point of drip-off.
3. Weedon (2,4-D) - 1% solution applied foliarly to the point of drip-off.
4. Banvel + Weedon - 0.5% dicamba + 0.5% 2,4-D solution applied foliarly to the point of drip-off.
5. Crossbow - 1% solution applied foliarly to the point of drip-off.
6. Roundup - 1% solution applied foliarly to the point of drip-off.
7. Spike 20P - 0.25 ounce per plant applied to the soil at the crown of the plant.
8. Tordon RTU - applied to four cut stems per plant.

**Demonstration Results**

On July 23, there were no signs of life in plants treated with Ally, Weedon, or Crossbow. The plants treated with Banvel, Banvel + Weedon, Roundup, Spike 20P, and Tordon RTU were all extremely sick.

On August 23, all plants were dead except for "glimmers" of life in those treated with Tordon RTU, Spike 20P, and Banvel. It would be surprising if any of the plants survive into 1994.

Although the costs and speed of the treatments varied, all provided very acceptable control.
Overview

In December 1992 six area cattle producers delivered 35 heifers and the Andrew Jackson Demonstration Farm purchased 9 for a total of 44 heifers. This compares with 38 heifers the previous year.

The heifers were fed a corn and hay diet along with mineral and salt. The hay was a legume-grass mixture, packaged in large round bales and stored inside. The hay tested 17.4% crude protein (100% dry matter basis) using NIR analysis. The diet contained 13% crude protein (100% dry matter basis) and had a NEg of .58 megacal/pound.

The heifers were fed in a solid concrete lot with access to loafing sheds open to the south. The individual diets offered during various stages were as follows.

<table>
<thead>
<tr>
<th>Warm-up Period</th>
<th>Test Period</th>
<th>Post Text Period</th>
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<tbody>
<tr>
<td>11/30-1/3</td>
<td>1/4-4/26</td>
<td>Before Grazing</td>
</tr>
<tr>
<td>9.5 lb hay</td>
<td>11.1 lb hay</td>
<td>6.0 lb hay + small pasture</td>
</tr>
<tr>
<td>7.6 lb corn</td>
<td>8.1 lb corn</td>
<td>8.4 lb corn</td>
</tr>
</tbody>
</table>

The heifers were rotated between 2 brome/clover pastures and a permanent blue grass pasture. Average mineral consumption was approximately .12 pounds per head per day. Heifers were dewormed, poured for lice, and given booster shots for Hemophilus, IBR, PI-3, BVD, Blackleg, and Pasteurella.

AI sires consisting of Black Angus, Red Angus, and Salers were offered to consignors. The AI sires had to be in the top 15% of their breed for EPD birthweight and calving ease. They needed a minimum EPD accuracy of .75. A Black Angus clean-up bull was rented for use until early August.
Estrus synchronization was accomplished by feeding MGA at .5 mg/hd/day for 14 days. Seventeen days later, the heifers were injected with Lutalyse. Starting the next day and continuing for three days, heifers were detected for standing heat and inseminated 12 hours later. On the fourth day, heifers not detected in heat were mass inseminated. All heifers ran with the cleanup bull for 59 days. The total length of the breeding season amounted to 63 days (counting AI days).

Demonstration Results

This was a uniform group of heifers. The 44 heifers varied only 260 pounds in starting weight. A summary of the average weigh-in information compared with 1992 follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>1992</th>
<th>1993</th>
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<tbody>
<tr>
<td>Initial weight, lb.</td>
<td>552</td>
<td>614</td>
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<tr>
<td>Frame height, in</td>
<td>45.5</td>
<td>46.2</td>
</tr>
<tr>
<td>Frame score</td>
<td>5.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Condition score</td>
<td>4.3</td>
<td>4.8</td>
</tr>
<tr>
<td>Ave. birth date</td>
<td>Apr. 1, '91</td>
<td>Mar. 25, '92</td>
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Heifers were targeted to gain 1.6 to 1.9 pounds per day. The target breeding weight was assumed to be 70% of the estimated mature weight. Actual gains during the various stages of the development period compared with 1992 follow:
The following outlines the estrus synchronization program and the resulting pregnancy rates. One of the heifers was removed by the owner before the breeding regime began. Forty-three head were put through the breeding program. It was impossible to calculate the synchronized pregnancy rate and mass pregnancy rate from the pregnancy examination results. The following summarizes the reproduction results.

<table>
<thead>
<tr>
<th>Year</th>
<th>1992</th>
<th>1993</th>
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<tbody>
<tr>
<td>No. heifers at breeding</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Sync. estrus response rate, %</td>
<td>70.2</td>
<td>81.4</td>
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<tr>
<td>Overall pregnancy rate, %</td>
<td>94.6</td>
<td>93.0</td>
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Total development costs in this project averaged $262.42 per heifer over the 335-day period. Feed and pasture costs represented about 56% of the total.
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<tbody>
<tr>
<td>1993</td>
<td>194</td>
<td>150</td>
<td>108.98</td>
<td>48.31</td>
<td>39.01</td>
<td>13.19</td>
<td>3.00</td>
<td>3.86</td>
<td>12.56</td>
<td>11.63</td>
<td>5.42</td>
<td>262.42</td>
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</table>

The average corn price in 1992 was $2.56 per bushel compared to $2.20 for the 1993 heifers. This resulted in lower cost per ton of dry matter of $4.48 in 1993 compared to 1992 ($82.02 compared to 86.50). In addition, the 1993 heifers consumed 3.6 pounds less dry matter per head per day, almost all in hay, for a total of 600 pounds less dry matter consumption per head for the drylot period.