Economics of Alternative Beef Production Systems

Dr. Curt Lacy
Extension Economist-Livestock
The University of Georgia
While preparing dinner, Edna accidentally opens up a can of Whoopass.
Alternative Production Systems

- Organic
- Natural
- Grass-fed
- Local
Why consider alternative production systems?

- Changing consumer wants/demands.
- Higher prices?
- Current input market conditions warrant considering examining alternatives.
- Portfolio diversification.
- Long-term “alternative” may become conventional.
Why NOT consider alternative production systems?

- Consumer fads come and go.
- There is a reason more people aren’t doing this.
- The input market could change considerably.
- Lack of technical information.
- Keeping records is not your long-suit.
- You are successfully producing and marketing conventional beef even in today’s business climate.
Major considerations

1. Do you have a market?
2. Do you have a market?
3. Can you market in a timely manner?
4. Are there additional costs?
5. Are there premiums?
6. What’s the downside?
General Observations

- Consumer’s are mostly concerned about
  - Antibiotics
  - Hormones
- They are also concerned about animal welfare.
- They want to help the “small/local” producer.
- They are willing to pay *some* premium for these products.
Common Threads of Most Alternative Production Systems

- Reduction or complete elimination of:
  - Antibiotics
  - Implants
  - Growth promotants (ionophores/ beta-agonists)
  - Animal derived proteins

- Increased record-keeping requirements
- More planning for marketing
Some Economic “Truths”

- Long-term the price of a commodity will approach the total cost of production.
- Most times there is a reason why others are not in a certain enterprise.
- Anything can be profitable if you can charge enough.
Presentation Overview

1. Alternative Program
2. Description/Considerations
3. Economics
Natural Beef
Natural Beef

- Consumer’s definition of “Natural” is different from current USDA definition of minimally processed.
- Approximately 20 different lines of natural beef being offered.
- Natural is essentially grain-fed beef without antibiotics, hormones or ionophores.
Natural Beef

- All natural beef programs place limitations on:
  - Antibiotics
  - Implants
  - Ionophores/Beta-agonists
  - Animal derived proteins

- Usually fed in selected feedlots
Economic Tradeoffs

- **Cow-calf**
  - Reduced implant and antibiotic costs
  - Lower weaning weights (possibly)
  - Increased vet expenses?

- **Finishing Phase**
  - Reduced implant and antibiotic costs
  - Slower growth
  - Higher feed conversion
  - Higher feed expense
  - Increased vet expense
  - “Fall-out” rate around 20%
  - Higher percentage of cattle grading Choice (10-15%)
Cow-calf producers need $4.00-$6.00/cwt. premium for weaned calves.

Backgrounded/preconditioned cattle need $7.00-$9.00/cwt. (depending on morbidity and feed conversion).

Slaughter cattle need $12-$15 carcass cwt. ($7-$9/cwt. live).
Real-world data from South and North Georgia

- North Georgia
  - AN and ANx cow-calf pairs from NW GA Experiment Station (Calhoun) divided into two groups prior to calving (2007).
  - One group treated conventionally the other group treated as natural (no implants, no antibiotics).
  - Both groups weighed at weaning, preconditioned for 60 days and sent to SW IA to be fed in GA Beef Challenge.
### Results from NW GA Cattle (2007)

<table>
<thead>
<tr>
<th>Date</th>
<th>Natural</th>
<th>Conventional</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaning</td>
<td>360.5</td>
<td>372.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Weaning +30d</td>
<td>445.4</td>
<td>468.0</td>
<td>22.6</td>
</tr>
<tr>
<td>Weaning +60d</td>
<td>508.0</td>
<td>537.9</td>
<td>28.9</td>
</tr>
</tbody>
</table>

- 16% fall-out in calf phase from foot-rot on natural calves.
- At weaning needed $4.08/cwt. to cover difference in weight.
- After 60d precon needed $6.34/cwt. to cover difference in weight.
- Carcass data should be available tomorrow 😊
Real-world data from South and North Georgia

- South Georgia
  - Cattle fed in Southwest IA as part of GA Beef Challenge
  - AN and ANx calves
  - Same producer
  - 2 years
## Results from Feeding South GA Cattle in Natural Program

<table>
<thead>
<tr>
<th>Item</th>
<th>2006-2007 67 head</th>
<th>2007-2008 71 head</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steers (44)</td>
<td>Heifers (23)</td>
</tr>
<tr>
<td>ADG</td>
<td>2.85</td>
<td>2.78</td>
</tr>
<tr>
<td>Feed:gain</td>
<td>7.13</td>
<td>7.11</td>
</tr>
<tr>
<td>%Choice</td>
<td>77%</td>
<td>100%</td>
</tr>
<tr>
<td>%Prime</td>
<td>5%</td>
<td>17%</td>
</tr>
<tr>
<td>% Y3 or less</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Backfat</td>
<td>.47</td>
<td>.46</td>
</tr>
<tr>
<td>Average age at slaughter</td>
<td>765 d</td>
<td>653</td>
</tr>
</tbody>
</table>
# Results from Feeding South GA Cattle in Natural Program

<table>
<thead>
<tr>
<th>Item</th>
<th>2006-2007</th>
<th></th>
<th>2007-2008</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steers</td>
<td>Heifers</td>
<td>Steers</td>
<td>Heifers</td>
</tr>
<tr>
<td>Carcass weight</td>
<td>702</td>
<td>645</td>
<td>694</td>
<td>624</td>
</tr>
<tr>
<td>Feed cost of gain ($/Cwt.)</td>
<td>$69.19</td>
<td>$69.02</td>
<td>$76.20</td>
<td>$75.00</td>
</tr>
<tr>
<td>Total cost of gain ($/Cwt.)</td>
<td>$84.70</td>
<td>$84.85</td>
<td>$94.46</td>
<td>$93.14</td>
</tr>
<tr>
<td>% Individually treated</td>
<td>6%</td>
<td></td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>Average Carcass Price ($/Cwt.)</td>
<td>$167.55</td>
<td>$163.94</td>
<td>$157.24</td>
<td>$157.26</td>
</tr>
<tr>
<td>Profits ($/head)</td>
<td>$56.01</td>
<td>$18.71</td>
<td>($112.53)</td>
<td>($127.05)</td>
</tr>
</tbody>
</table>
Other Considerations on Natural Cattle

- Often no CAB premium.
- Probably no Prime premium.
- Select discount may not be as severe.
- Delays in slaughter can increase Y4s.
- Heifers can be a problem → Light carcass discount = $20-$30/cwt. vs. $15 in conventional.
Grass Fed Beef Economics
Producing and Marketing Grass-fed Beef

- Can be marketed direct to consumers. Must develop a market and get the cattle killed and processed.
- There are a few companies buying/procuring grass-fed beef.
- Usually marketing is arranged well in advance of slaughter (6-9 months).
- Base carcass price around $175/cwt.
- Usually require at least a semi-load.
- Trucking can be an issue.
Producing and Marketing Grass-fed Beef

- Many have breed requirements (AN or ANx).
- May or may not “pre-enroll” finishing animals.
- Some allow minimal supplementation (0.5% BW), others none.
- NO sub-therapeutic antibiotics. Some allow minimal treatments.
- NO implants or other growth promotants.
Producing and Marketing Grass-fed Beef

- What is your forage base?
- What are your forage management skills?
- What are your supplementation options when grass is short?
- If marketing direct to consumers:
  - How are your people skills?
  - Can you retail the product?
  - What are your slaughter and processing options?
Example Budget of Grass-fed Beef Finishing

- Weaned 500-550# pound calf in July.
- Placed on bermuda/millet pasture until fall (2 head/acre)
- Grazed on winter annuals until late spring (1 head/acre).
- 1% of BW Soyhulls
- Hay for 90 days during transition periods.
# Example Grass-fed Beef Finishing Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Number of Units</th>
<th>$/Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf</td>
<td>Cwt</td>
<td>5.25</td>
<td>$ 100.00</td>
<td>$ 525.00</td>
</tr>
<tr>
<td>Procurement</td>
<td>Head</td>
<td>1.00</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Bermuda pasture</td>
<td>Acres/calf</td>
<td>0.50</td>
<td>$ 150.00</td>
<td>$ 75.00</td>
</tr>
<tr>
<td>Millet pasture</td>
<td>Acres/calf</td>
<td>0.50</td>
<td>$ 200.00</td>
<td>$ 100.00</td>
</tr>
<tr>
<td>Winter annual</td>
<td>Acres/calf</td>
<td>1.00</td>
<td>$ 200.00</td>
<td>$ 200.00</td>
</tr>
<tr>
<td>Soy hulls</td>
<td>Tons</td>
<td>1.07</td>
<td>$ 250.00</td>
<td>$ 268.31</td>
</tr>
<tr>
<td>Hay</td>
<td>Tons</td>
<td>0.72</td>
<td>$ 125.00</td>
<td>$ 89.44</td>
</tr>
<tr>
<td>Vaccination, dewormer, etc.</td>
<td>Head</td>
<td>1.00</td>
<td>$ 5.00</td>
<td>$ 5.00</td>
</tr>
<tr>
<td>Mineral</td>
<td>Lbs.</td>
<td>67.50</td>
<td>$ 0.30</td>
<td>$ 20.25</td>
</tr>
<tr>
<td>Labor</td>
<td>Head</td>
<td>2.00</td>
<td>$ 9.00</td>
<td>$ 18.00</td>
</tr>
<tr>
<td>Repairs</td>
<td>Head</td>
<td>1.00</td>
<td>$ 5.00</td>
<td>$ 5.00</td>
</tr>
<tr>
<td>Land rent</td>
<td>Acres</td>
<td>1.00</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Head</td>
<td>1.00</td>
<td>$ 5.00</td>
<td>$ 5.00</td>
</tr>
<tr>
<td>Operating Interest</td>
<td>%</td>
<td>$ 655.50</td>
<td>7.50%</td>
<td>$ 36.37</td>
</tr>
<tr>
<td>Death Loss</td>
<td>%</td>
<td>$ 1,311.00</td>
<td>2.00%</td>
<td>$ 13.11</td>
</tr>
<tr>
<td>Trucking</td>
<td>Cwt.</td>
<td>10.65</td>
<td>$ 10.00</td>
<td>$ 106.50</td>
</tr>
<tr>
<td>Total Variable Cost</td>
<td></td>
<td></td>
<td></td>
<td>$ 1,466.98</td>
</tr>
<tr>
<td>Breakeven Sales Price Liveweight</td>
<td></td>
<td></td>
<td></td>
<td>$ 137.74</td>
</tr>
<tr>
<td>Breakeven Sales Price Carcass (60% dressing)</td>
<td></td>
<td></td>
<td></td>
<td>$ 229.57</td>
</tr>
<tr>
<td>Total Cost of Gain</td>
<td></td>
<td></td>
<td></td>
<td>$ 174.44</td>
</tr>
<tr>
<td>Feed-Only Cost of Gain</td>
<td></td>
<td></td>
<td></td>
<td>$ 135.69</td>
</tr>
</tbody>
</table>
Main Points

- Producers should carefully pencil grass-fed beef production.
- Key items are:
  - Sales weight
  - Forage availability and costs
  - Allowed supplements
  - Market access
Organic Beef
Organic Beef

- Rapidly growing market, …recent high prices may have tempered demand some.
- Can be grass-fed or grain-fed.
Organic Beef Cliff Notes

- No antibiotics, no growth hormones.
- Organic pastures (no pesticides, no commercial fertilizers, no sewage sludge, no GMOs and no ionizing radiation).
- Pastures must be free of prohibited products for 3 years.
- Cattle must receive 100% organic feed but can receive certain vitamin and mineral supplements.
Organic Standards

- Animals must be raised under organic management from the last third of gestation.
- Must have access to pasture.
- Before being labeled organic, government approved inspector inspects the farm. Handling or processing facilities must also be certified organic. Certified through AMS.
Organic Beef Economics

- Slightly higher weed management costs ($2-$4/acre).
- Lower fertilizer costs (about $25/acre).
- Lower total costs ($7-$12/acre).
- Similar forage production*
- Higher calf cost (+9-11%) compared to conventional cattle.
Comparison of Organic and Conventional Cow-Calf (Central Florida) – 500 cows

<table>
<thead>
<tr>
<th>Item</th>
<th>Organic</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected Weaning Weight</td>
<td>475</td>
<td>550</td>
</tr>
<tr>
<td>Acres Required</td>
<td>1,625</td>
<td>1,750 (125 for hay)</td>
</tr>
<tr>
<td>Tons of hay purchased</td>
<td>625</td>
<td>0.00</td>
</tr>
<tr>
<td>Cost/Cow</td>
<td>$479.04</td>
<td>$490.71</td>
</tr>
<tr>
<td>Cost/calf marketed</td>
<td>$598.80</td>
<td>$613.39</td>
</tr>
<tr>
<td>Cost/cwt. produced</td>
<td>$132.70</td>
<td>$122.98</td>
</tr>
</tbody>
</table>
## Comparison of Grass-fed and Grain-fed Organic Cattle

<table>
<thead>
<tr>
<th>Item</th>
<th>Organic Grass-fed</th>
<th>Organic Grain-Fed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slaughter weight</td>
<td>1,030</td>
<td>1,250</td>
</tr>
<tr>
<td>Profit ($/head)</td>
<td>$378.92</td>
<td>$180.65</td>
</tr>
<tr>
<td>Breakeven ($/Cwt.)</td>
<td>$155</td>
<td>$185.65</td>
</tr>
</tbody>
</table>
Oh, BTW

- Assumes land already in production.
- **ASSUMES ACCESS TO ORGANIC FEEDSTUFFS AND HAY.**
- Assumes no health problems.
- $200/liveweight = $2,000 plus per slaughter animal,.. Are you kidding me??
- How many of these can you sell?
Organic Summary

- At today’s fertilizer prices, organic may not be such a big adjustment.
- Probably more potential for grass-fed organic vs. grain-fed organic.
- Three-year transition period still a big deal!!
- Overall cow-calf costs can be very similar between organic and conventional.
- Vet costs and forage production are likely major cost variables.
- Finishing costs are considerably more than conventional.
- Definitely want a market before venturing too far down this path.
- May be some potential for organic calf producers to supply organic grass and grain finishers.
Local Beef
Local Beef and Food Products

- Increasing numbers of consumers want to know where their food comes from.
- Consumers want “local” for different reasons:
  - Protest against “industrial agriculture” and “factory food”,
  - Believe it is fresher,
  - Believe it reduces fuel consumption (fossil fuel emissions, etc),
  - Believe it is safer,
  - Desire to help “Family Farms”
Local Beef and Food Products

- Increasing number of food-service requests for local food:
  - Local school boards
  - Colleges
  - Restaurants
Local Marketing Considerations

- May allow producers to direct-market finished beef.
- Access to slaughter and processing facilities?
- Live vs. retail trade?
- Can you meet the demand?
- How are your people skills?
Why NOT Consider Marketing Local

- Usually requires dealing direct with customers.
- Payment could take longer.
- No P&S bonding requirements on individuals buying your beef.
- Possible increased expectations of the “Ranch Experience” as opposed to simply a transaction.
Why Consider Marketing Local

- No label requirements.
- However, can use other labels to add value, e.g., “Local Natural”, “Local Grass-fed”, “Local Organic”, etc.
- Market development can be less expensive.
- Possibly lower transportation and marketing costs.
Overall Summary for Alternative Production Methods

- Alternative production methods offer increased marketing opportunities.
- Allow larger producers to diversify.
- Allow smaller producers to find a niche.
- Usually have higher costs and breakevens than conventional production.
- Marketing and processing usually major limiting factors.
- In today’s input market, probably worth considering.
QUESTIONS?