Natural Beef

What, Why, Who, How

John Dhuyvetter, NDSU Ext, NCREC
What is Natural Beef?

1 billion $ sales – 2% of market – growing 20+%/yr
What is Natural Beef

- USDA
  - Minimally processed
  - No artificial ingredients

- Market Differentiated (Natural Branded Beef)
- Added Label Claims if documented with verification
  - No antibiotics
  - No hormones
  - No animal by products
  - Humanely raised
  - Environmentally sustainable
  - Source and Age
  - Breed

- USDA hearings on definition of “Natural”
Natural Beef Strategies

- Never Ever
- Extended Withdrawal
- Laboratory Tested
Natural is different than ..

- Organic Beef
  - Organic Foods Protection Act
  - National standards
  - Certified by USDA accredited certifying agency
  - Specified criteria
    - Organic feed
    - Welfare
    - No antibiotics, pesticides, implants
    - No GMO

- Grass Fed Beef
  - 90% of lifetime feed supply from forages
  - USDA defined
Market drivers for beef

- Availability
- Price/value
- Palatability – taste/tenderness
- Convenience
- Healthfulness – nutrients/safety
- Social responsibility – environment/animal care
- Brands – recognition/loyalty

“Sell them what they want and are willing to buy”
Healthy Food, Happy Cows, Clean Environment, Caring People

- Safe, healthy, wholesome
- Humanely raised and handled
- Animal welfare and compassionate care
- Natures way
- Sustainable ranching
- Environmental stewards
- Families and communities
- Family Farms and Ranches
Consumers say

- If regular sirloin cost $4.00/lb, and natural costs $5.60/lb, I would buy…..

<table>
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<tr>
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<th>Kansas City</th>
<th>Dallas</th>
<th>Okla City</th>
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<tbody>
<tr>
<td>Natural</td>
<td>57</td>
<td>82</td>
<td>47</td>
</tr>
<tr>
<td>Regular</td>
<td>43</td>
<td>18</td>
<td>53</td>
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</table>

- Okla. State Univ. 2001
New market opportunities

- Driven by apparent customer demand
- Several companies expanding into natural beef
  - ND Natural Beef LLC
- Potential for adding value - premiums??
- Supplying “Natural” feeder calves
- Feeding and Selling “Natural” beef
- Best management practices need attention
Growing Natural Beef Market

- Tyson (natural CAB)
- Swift
- Coleman
- Meyers Natural Angus
- Laura’s Lean
- Maverick Ranch
- Oregon County Beef
- Creekstone Farms
- Painted Hills
- BR3
- PM Beef
- Ninman Ranch
- ND Natural Beef, LLC
NORTH DAKOTA NATURAL BEEF, LLC

“Never- Ever”
ND Natural Beef - Specifications

- Natural
  - No growth promoting implants
  - No MGA or Prostiglandin
  - No antibiotics
  - No ionophores (Rumensin, Bovatec, Cattlyst)
- Genetics
  - No bos indicus
- Feeding
  - Minimum of 100 days on concentrate diet feeding
  - Minimum of 50% corn or corn by-products in diet
- Age
  - No more than 24 months
Additional program affiliations

- **Certified Humane** (Meyer Natural Angus)
  - Bio-Security Policy
  - Feed and Water
  - Body Condition Scoring
  - Facilities
  - Waste Management
  - Pest Control
  - Animal Health Procedures
  - Casualty Stock Policy
  - Emergency Action
  - Records
  - Employee Training

- **Food Alliance** (Country Natural Beef)
  - Sustainable agricultural practices
  - Environmentally friendly
  - Socially responsible
Marketing Natural Cattle

- Natural Beef Branded Programs buy compliant fed cattle
- Compliant cattle must be according to the program’s protocols
  - Genetics, husbandry, feeds, antibiotics, implants, vit E, country of origin, age, …. (allowable and approved feeds and products lists)
  - Documentation/pre-approval
  - Supplier affidavit
- Most purchased for processing “slots”
  - Contract for price and delivery
- Base price + natural premium + grid adjustments
  - $10 – 14/cwt carcass weight
Supplying “Natural” feeder calves

- Many North Dakota calves are managed as natural calves
  - No implants
  - Few treated with antibiotics
    - Must identify these animals and records
  - Creep feeds without ionophores
  - Receiving diets may not contain antibiotics
  - Supplements may not contain animal byproducts
  - Good vaccination essential
  - Some latitude for parasite control
- “Owner Certified Natural” (Superior Video Auction)
- Some potential for premiums
  - $2-5/cwt weaning 500 to 600 lbs
  - $3-7/cwt backgrounded/yearling 800-1000 lbs
Natural feeding

- Conventional diets with grain most common
  - Several new additives on the market
  - Feed companies support natural feeding
- Little restriction on diet formulation
  - No inophores or animal by products
- Grain levels may be lowered slightly in finishing ration
  - From 85-90% to 80-85% concentrate
  - Maintain more stable rumen ph
  - Reduce risk of bloat and other problems
- WDGS preferred feed
  - Rumen stabilization
- Typically lower ADG and FE,
  - Higher COG
  - Higher BE
Natural feeds

- Feed resources
  - GMO vs non-GMO, not an issue
- Grains
  - Corn, barley, peas, oats
- Co-products
  - Wide variety available
  - Highly digestible fiber
- Forages
  - Quality important
  - Vegetative vs. mature hay/residues
- Supplements
  - Yeasts, enzymes
  - Fermentation products
  - Minerals and vitamins
Non-approved feed supplements

- Ionophores, Antibiotics, Animal Byproducts
Health management

- Vaccinations encouraged
  - Work with local veterinarian
  - 4-way MLV, pasturella, 7-way, mycoplasma?, deworm?
  - cow herd, branding, preweaning, receiving
- Treat calves needing therapy
  - Identify calf and keep records
  - Market these calves in conventional channels
- BQA procedures
- Minimize stress
  - Pre wean castrate, dehorn
  - Bedding and protection
  - On ranch preconditioning
- Good mineral and nutrition
Ionophores -

- Improve gain 1-6 %
- Improved efficiency 6-8%
- Estimated returns $12/hd

- Manage digestive upsets
  - Bloat
  - Acidosis
  - coccidiosis
Carrington REC – ionophore feeding research project

- 128 preconditioned steers-16 pens
- Cattle sources
  - Carrington Research Ext Center
  - Eastern Dakota Feeder Calf Club
- Four treatments (4 reps/tmt)
  - Conv suppl, 85% grain- NEg 57 Mcal
  - Nat suppl, 85% grain – NEg 57 Mcal
  - Nat suppl, 70% grain – NEg 52 Mcal
  - Nat suppl, 55% grain - NEg 47 Mcal
Trial protocol

- Fenceline bunk fed TMR once daily
- 28 day weights, feed intake, feed eff calc
- Cattle were not implanted
- Calves bedded with straw
- Wind protection with wind fence and trees
- Carcass data collected at slaughter
- Economics calculated for feed cost/lb gain
Supplements used in natural feeding

- **Rumensin®** used in control ration
  - Improves feed efficiency
  - Reduces bloat potential
  - Elanco Animal Health

- **Bovi-Sacc ®**
  - Combination of yeast, enzymes, microbials
  - Yea-Sacc ® and Fibrozyme ®
  - Supports rumen stability and digestion
  - Alltech, Inc.
**Diets for naturally fed cattle**

(Percent dry matter basis)

<table>
<thead>
<tr>
<th></th>
<th>C-85</th>
<th>N-85</th>
<th>N-70</th>
<th>N-55</th>
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<tbody>
<tr>
<td>Barley</td>
<td>60.6</td>
<td>60.4</td>
<td>39.7</td>
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<tr>
<td>Peas</td>
<td>12.9</td>
<td>12.9</td>
<td>12.7</td>
<td>8.27</td>
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<tr>
<td>Corn Sil</td>
<td>15.3</td>
<td>15.3</td>
<td>22.5</td>
<td>22.0</td>
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<tr>
<td>Oat Hay</td>
<td>9.4</td>
<td>9.4</td>
<td>23.0</td>
<td>37.6</td>
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<tr>
<td>Suppl</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
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</table>
Results

- Start Date: Dec 10
- Days on feed:
  - C85 - 154
  - N85 - 154
  - N70 - 180
  - N55 – 210
- No difference in disease or treatment %
  - 6.3 to 9.7% treated
## Performance of natural fed steers

<table>
<thead>
<tr>
<th></th>
<th>C-85</th>
<th>N-85</th>
<th>N-70</th>
<th>N-55</th>
<th>P Value</th>
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<tbody>
<tr>
<td><strong>Initial wt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DMI, lb/d</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Final wt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMI, lb/d</td>
<td>21.7</td>
<td>21.4</td>
<td>21.7</td>
<td>22.0</td>
<td>.80</td>
</tr>
<tr>
<td>P Value</td>
<td>.99</td>
<td>.78</td>
<td>.78</td>
<td>.80</td>
<td></td>
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ADG and feed efficiency for naturally fed cattle

![Bar chart showing ADG and Feed Efficiency for different groups: C-85, N-85, N-70, N-55. The chart indicates differences between groups with letters a, b, c.](chart.png)
Carcass traits of natural fed steers

<table>
<thead>
<tr>
<th></th>
<th>C-85</th>
<th>N-85</th>
<th>N-70</th>
<th>N-55</th>
<th>P Value</th>
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<tr>
<td>Hot Carc,</td>
<td>707.4</td>
<td>690.0</td>
<td>687.3</td>
<td>678.0</td>
<td>.62</td>
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<tr>
<td>Marb Sc</td>
<td>454</td>
<td>481</td>
<td>421</td>
<td>421</td>
<td>.16</td>
</tr>
<tr>
<td>Fat Th, in</td>
<td>.46(^a)</td>
<td>.43(^a)</td>
<td>.36(^b)</td>
<td>.32(^b)</td>
<td>.02</td>
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<tr>
<td>REA, sq in</td>
<td>11.9</td>
<td>12.1</td>
<td>11.8</td>
<td>11.4</td>
<td>.08</td>
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<tr>
<td>KPH, %</td>
<td>2.3(^a)</td>
<td>2.2(^a)</td>
<td>1.8(^b)</td>
<td>2.3(^b)</td>
<td>.01</td>
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<tr>
<td>Yld Grade</td>
<td>2.97</td>
<td>2.77</td>
<td>2.58</td>
<td>2.70</td>
<td>.27</td>
</tr>
<tr>
<td>% Choice</td>
<td>75.0</td>
<td>69.8</td>
<td>59.3</td>
<td>62.8</td>
<td>.67</td>
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Feed costs for naturally fed cattle

- C-85
- N-85
- N-70
- N-55

$/lb gain
Cost increase for natural feeding over conventional feeding

- C-85
- N-85
- N-70
- N-55

$/hd
Conclusions – Dr Vern Anderson

- Natural fed steers can be competitive in performance and cost at the same energy levels
  - Implant vs. no implant may alter results
  - Preconditioning period critical

- Increasing forage decreases rate of gain and increases cost
Implants - OSU

- **Feedlot**
  - Increase gain: 15-20%
  - Improve efficiency: 8-20%
  - Estimated returns: $30-60/hd

- **Calfhood**
  - Increase gain: +20lbs
  - Estimated returns: $11/hd

- **Lifetime**
  - Estimated returns: $55/hd
Univ of WY Implant study

- 80 Angus x Gelbvieh steers
- CON – no implant
- IMP – 1 TBA+E implant
- $12 CH-SE spread
- $30 implant response

<table>
<thead>
<tr>
<th></th>
<th>CON</th>
<th>IMP</th>
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<tbody>
<tr>
<td>ADG</td>
<td>3.08</td>
<td>3.74</td>
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<tr>
<td>DMI</td>
<td>21</td>
<td>23</td>
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<tr>
<td>F/G</td>
<td>6.8</td>
<td>6.1</td>
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<tr>
<td>Weight</td>
<td>1229</td>
<td>1323</td>
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<tr>
<td>Carcass</td>
<td>729</td>
<td>782</td>
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<tr>
<td>Price</td>
<td>132</td>
<td>127</td>
</tr>
<tr>
<td>Value</td>
<td>$965</td>
<td>$995</td>
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Response to Implants - ISU

- Comparison of Estrogen reimplant (E/E), Combination reimplant (ET/ET) and delayed implant (C/ET) vs Controls - Treatments increased returns $20.64, $61.11 and $61.51 per head
- Equally treated comparisons as part of a 7-trial ISU summary
## Backgrounding

<table>
<thead>
<tr>
<th></th>
<th>Nat</th>
<th>Con</th>
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<tbody>
<tr>
<td>Price</td>
<td>112.5</td>
<td>110.0</td>
</tr>
<tr>
<td>Gain</td>
<td>2.5</td>
<td>2.8</td>
</tr>
<tr>
<td>Days</td>
<td>80</td>
<td>71</td>
</tr>
<tr>
<td>Death</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>COG</td>
<td>.733</td>
<td>.648</td>
</tr>
<tr>
<td>BE</td>
<td>1.02</td>
<td>$.97</td>
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## Finishing

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<th>Con</th>
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<td>Price</td>
<td>1.05</td>
<td>1.00</td>
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<tr>
<td>Gain</td>
<td>3.2</td>
<td>3.7</td>
</tr>
<tr>
<td>Days</td>
<td>156</td>
<td>135</td>
</tr>
<tr>
<td>Death</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>COG</td>
<td>.66</td>
<td>.57</td>
</tr>
<tr>
<td>BE</td>
<td>.83</td>
<td>.89</td>
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+$37

+$75
Summary

- Growing market
- Biggest premium for “best” natural cattle
  - Health
  - Carcass
  - Performance
- Understand requirements of the market
  - Communication with marketers and programs
- Be a good record keeper
- Coordinate placement and slots for fed cattle
Questions?