Genetics and the Bull Purchase Decision

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Intended Audience
- Oklahoma Beef Producers
  - Bull Breeders
  - Cow-Calf Producers
- Expansion opportunities
  - Continuing Education Courses
  - Multi-State Extension Beef Conferences
- Goal
  - Provide valuable information on a new technology to producers
  - Increase profitability
New genetic testing technology
  › Genotype of cattle
  › Age of producers

Beef production is important in Oklahoma
  › Oklahoma ranks in the top 3 states by cows per sq. mile
  › 48,000 cattle producers

Genetic change is an important drive of profit
  • Offspring value
  • Calves
  • Replacement female selection
  • Fertility
  • Growth Rate
  • Calving ease

Genetic information is appearing in bull sale catalogs and being directly marketed to producers

Costs of a breeding mistake are great
**Beef Production – a Sire Selection Mistake is Costly**

- Production Lag – time lag between the time production decisions are made and the output is produced.
  - Beef – 2 years
  - Chicken – slightly more than one month
- Yearling bull: 10-15 cows
- 2-3 year old bull: 20-25 cows


# Extension Information for Producers

**CF Crossover 5908 (AMC-NHC)**
- **CAVED:** 9/23/08
- **AAA:** 16437512
- **TATTOO:** 5908
- **OWNERS:** Frey Angus (Clarence), Mulhall, OK

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<table>
<thead>
<tr>
<th>Trait</th>
<th>BW</th>
<th>WW</th>
<th>YW</th>
<th>Milk</th>
<th>CW</th>
<th>Marb</th>
<th>REA</th>
<th>Fat</th>
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<tbody>
<tr>
<td>EPD</td>
<td>+0.5</td>
<td>+47</td>
<td>+95</td>
<td>+28</td>
<td>+18</td>
<td>+.51</td>
<td>+.37</td>
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| **BW 73** | | | | | | | | **$Wran $Footfat $Grid $Searf**
| | +20.57 | +26.38 | +20.48 | +53.89 |

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**BT Crossover 753N AMC-NHC**
- +14509065
- BT Royal Pride 237G
- Roth Exacto 0288

**CF Traveler 6602**
- 14537983
- CF Traveler Max 900

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### Performance Traits

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<th>Trait</th>
<th>RR</th>
<th>FAT</th>
<th>ADG</th>
<th>REA</th>
<th>TEH</th>
<th>HP</th>
<th>MRRB</th>
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<th>%CH</th>
<th>MCE</th>
<th>YG</th>
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**Ingenity**

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Image of a black cow and calf.
Genetic Tools

- Igenity
  - 14 Quantitative traits
- Pfizer Animal Genetics
  - Tenderness
  - Marbling
  - Feed Efficiency
- MMI genomics
  - Marbling
  - Tenderness

What has Research Shown?

- 1,668 Feedlot Steers & Heifers
  - Value of Leptin Genotype
  - Using genotypic information to select and feed certain genotypes:
    - $23.00/head – Steers
    - $28.00/head – Heifers
  - If cattle were marketed by genotype profits of the premium genetic cattle can increase to $60.00

What has Research Shown?

- 590 Feedlot Steers & Heifers
  - Value of Leptin Genotype
  - Increase value up to $48.00/head


Igenity (1-10 Score)

- Fat Thickness
- Marbling Score
- Quality Grade
- Rib Eye Area
- Yield Grade
- Average Daily Gain
- Tenderness
- Residual Feed Intake
- Dry matter Intake
- Heifer Pregnancy Rate
- Stayability (longevity)
- Maternal Calving Ease
- Docility
Igenity (1-10 Score)

- The higher the value – indicates that the animal has the potential for more of that trait.
Incorporating Genetic Information

- Use all information provided
- Production Goals
  - Cow-herd maturity
    - Mature cows – large calves
    - Younger herd – low birth weight
  - Marketing of Calves
    - Weaned & Sold
    - Preconditioned
    - Retained to Finish
      - Sold live
      - Sold on a grid

Example

- 57 year old male rancher
- 35 Cows
- Cow herd has a smaller frame size
- Does not have hired laborer
- Sells calves at weaning

What can he expect to pay for a new bull?
Conclusion

- Genetic tests aid in Selection Decisions
- Evaluate business goals and production design
- Genetic information provides important information in addition to EPDs, Ultrasound, and Test Performance.