DeSireBull™ – a bull selection decision support tool powered by BREEDPLAN

Laura Penrose ¹ & Dr Brad Walmsley ¹, ²

¹ NSW Department of Primary Industries, Livestock Industries Centre, Armidale, NSW, 2350 Australia
² Animal Genetics and Breeding Unit, University of New England, NSW, 2351, Australia
OVERVIEW

What’s the problem?
• Complexity of genetic information
• Suboptimal selection decisions

How do we fix it?
• Alternatives to aid selection decisions

What does it mean?
• Provide some flexibility without completely compromising genetic gain
The main focus
Complexity of genetic information

- Estimated breeding values (EBVS)
- Accuracies
- Selection Indexes
- Percentile values
Complex information

EBV Percentiles for PEPPERMILL GROVE N0044 (AI)

- Gest Length - Longer
- Birth Wt - Heavier
- 200 Day Wt - Lighter
- 400 Day Wt - Lighter
- 600 Day Wt - Lighter
- Mat Cow Wt - Lighter
- Milk - Lower
- Scrotal Size - Smaller
- Carcase Wt - Lighter
- Eye Musc Area - Smaller
- Rump Fat - Leaner
- Retail Yield - Lower
- Marble Score - Lower
- Marble Finessness - Lower
- Self Replacing Index - Lower
- Fullblood Terminal Index - Lower
- F1 Terminal Index - Lower

50th Percentile is the Breed Avg. EBVs for 2017 Born Calves

http://abri.une.edu.au/online/
What about other traits I desire?

I want to increase carcase weight.
The result

- Sub-optimal selection decisions
- Decreased rate of genetic gain
- Decreased productivity and profitability
The solution

Finding a balance

Integrity of analysis

Simplicity of delivery
## Index subgroups

### TRAIT CLASSIFICATION

<table>
<thead>
<tr>
<th>Group</th>
<th>Trait</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth &amp; calving</td>
<td>Birth weight, Calving ease (dir &amp; mat)</td>
</tr>
<tr>
<td>Carcase</td>
<td>Dressing %, Meat %, Rump fat, IMF</td>
</tr>
<tr>
<td>Efficiency</td>
<td>MCW, RFI</td>
</tr>
<tr>
<td>Fertility</td>
<td>SS, Days to calving</td>
</tr>
<tr>
<td>Growth</td>
<td>200 (dir &amp; mat)/400/600 day weight</td>
</tr>
</tbody>
</table>

### PRODUCTION SYSTEM CLASSIFICATION

<table>
<thead>
<tr>
<th>Group</th>
<th>Trait</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-farm</td>
<td>Birth weight, Calving ease (dir &amp; mat), 200 (dir &amp; mat)/400 day weight, SS, Days to calving, MCW, RFI-p</td>
</tr>
<tr>
<td>Off-farm</td>
<td>Dressing %, Meat %, Rump fat, IMF, RFI-f, 600 day weight</td>
</tr>
</tbody>
</table>
Scenario testing

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>Index</td>
<td>Sub-Group</td>
</tr>
<tr>
<td>Sub-Group</td>
<td>Sub-Group</td>
<td></td>
</tr>
<tr>
<td>I &amp; I</td>
<td>I &amp; S</td>
<td>S &amp; S</td>
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</tbody>
</table>
Response per year

- Seedstock Index selection
Response per year

- Seedstock Index selection
- Commercial Index selection
Response per year

- Seedstock Index selection
- Commercial Index selection
- Commercial SG selection (on/off farm)
Response per year

- Seedstock Index selection
- Commercial Index selection
- Commercial SG selection (trait groups)
- Commercial SG selection (on/off farm)
Search and compare bulls on genetic merit with DeSireBull. Australia’s new online search platform for cattle breeders.
What we know will work..
### Subgroup trait classification

<table>
<thead>
<tr>
<th>Index Subgroup</th>
<th>BREEDPLAN trait (EBV)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birth &amp; calving</strong></td>
<td>Birth weight, Calving ease direct, Calving ease maternal</td>
</tr>
<tr>
<td><strong>Carcase</strong></td>
<td>Dressing %, Meat %, Rump fat, Intra-muscular fat</td>
</tr>
<tr>
<td><strong>Growth</strong></td>
<td>200DW Direct, 200DW maternal, 400DW, 600DW</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td>Mature cow weight, Residual feed intake</td>
</tr>
<tr>
<td><strong>Fertility</strong></td>
<td>Scrotal size, Days to calving</td>
</tr>
</tbody>
</table>
What works for producers?
Visual elements

Australian Business Research Institute (ABRI), 2019

Irish Cattle Breeding Federation, 2019
The DeSireBull difference

Dynamically refine your search with our purpose built EBV Subgroups

We simplify complex genetic data to show you where the value counts

We summarise index components into a single star rating, so you can easily see how bulls stack up
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**The DeSireBull difference**

- **Birthing and Calving**
  - 22%

- **Growth**
  - 83%

- **Carcase**
  - Intramuscular Fat (%)
    - Lower: 60%
    - Higher: 40%

- **Eye Muscle Area (sq cm)**
  - Smaller: 38%
    - Larger

- **Rump Fat (mm)**
  - Leaner: 99%
    - Fatter

- **Retail Beef Yield (%)**
  - Lower: 65%
    - Higher: 35%
The DeSireBull difference

Dynamically refine your search with our purpose built EBV Subgroups

We simplify complex genetic data to show you where the value counts

We summarise index components into a single star rating, so you can easily see how bulls stack up

Index
Heavy Grain (HGrn)

INDEX RATING

<table>
<thead>
<tr>
<th>Star Rating</th>
<th>Value</th>
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<tbody>
<tr>
<td>* * * *</td>
<td>3.5</td>
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INDEX MERIT
Heavy Grain (HGrn)

<table>
<thead>
<tr>
<th>Lower</th>
<th>Avg</th>
<th>Greater</th>
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<tbody>
<tr>
<td>$125</td>
<td>25%</td>
<td>$102</td>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>10%</td>
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<tr>
<td></td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>76%</td>
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</table>
Additional search criteria
Project aim

A decision support tool that will:
• Simplify the bull selection process
• Match available bulls
• Compare and benchmark
• Provide feedback
Industry outcomes

• Increase demand for and adoption of genetic evaluation (BREEDPLAN)
• Increase productivity and profitability of Australian beef
Summary

Subgroup selection:
- Nucleus drives response
- $Index selection enables optimal genetic gain
- Commercial subgroup selection allows some flexibility
- Genetic gain not completely compromised

DeSireBull™
- Simplify selection decisions
- Allow producers some flexibility in decision process
- Improve rates of genetic gain, productivity and profitability