The evolving landscape of beef from the dairy herd: A perspective from Ireland

Ross Evans ICBF
Dairy herd birth trends

• 2023 Beef sired births now more than dairy sired
• 60% of beef carcasses now of dairy origin
• Herd size 69 to 101 cows
Sire recording levels

- Farmers did not see huge benefit to recording beef sires up to now
- AI replacing some of the natural service sire market
- National genotyping program will increase sire recording levels
Insemination trends

- Beef inseminations now close to dairy
- Sexed dairy semen on an upward curve
The challenge!

- Farmers prioritised calving traits, Milk and fertility over beef merit of calves
- Net stagnant carcass merit from dairy cow progeny
Even though!

Dairy breeding index has included a beef component for almost 20 years
The proposed solution

A Trilogy of breeding tools

Farm best practice

Objectives

- €500/ha per hectare
- Beef and Dairy integration
- Improve beef merit of dairy-beef calves
- Promote best practices
  - Grass management, calf rearing, health
- Reduce environmental impact

AgTech – it’s in our DNA
Dairy Beef Index (DBI)

- Identifies beef bulls suitable for the dairy herd
  - Calving traits
  - Carcass traits
  - Carbon traits

- Launched in 2019
- Updated in 2023 to include age at slaughter, TB, Carbon
Mating advice

1. Farmer chooses sires and usage rates
   • Farmer chooses females for dairy, beef, culling, crossbreeding....

2. Linear programming algorithm factors:
   • Female predisposition to difficult calving + sire’s calving difficulty genetic merit
   • Hitting the carcass spec

3. Farmer can save on database and send to technician handheld

4. 42% of cows were put through Sire Advice in 2024
Commercial Beef Value and NGP

Thursday 08:18 Session 1a: Decision Support Tools of the Future – Promoting Sustainability Farm Management
Margaret Kelleher: The Commercial Beef Value (CBV) encourages the adoption of sustainable and profitable practices in beef production.

Thursday 16:45 Session 9: Genomic’s impact on Livestock Sustainability
Mark Waters: Unlocking Genetic Potential: The National Genotyping Programme for Ireland’s Cattle Herd
**Progeny testing programme**

**Common herds**
- 490 herds in dairy
- 614 herds in beef
- 290 herds in both
- 25 straws: 5x5
  - ~ 22k straws

**Common sires**
- 44 sires in 2024 from 6 breeds
- 377 sires tested in both programs
Initiatives with Meat Processors

Genotyping

- Breed surety
- Genetic merit

Sensory attributes of meat

- Tenderness
- Juiciness
- Flavour

Trained panel MEQ EBVs

Climate

Leverage the database
Genetics, diet, systems

- Estimate Animal Growth Profile
- Predict Energy Demand (for Maintenance and Gain)
- Infer DMI using assumed diet energy density (MJME/kg DM)
- Predicted daily entering CH4 from DMI (differes for different diets)
- Predict other GmG

Carbon footprint / Carbon efficiency

<table>
<thead>
<tr>
<th>Greenhouse Gas Output per animal (expressed in kg of CO2 equivalent)</th>
<th>106</th>
<th>3203</th>
<th>4446</th>
<th>3360</th>
<th>93%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas Output per kg Carcass Weight (expressed in kg of CO2 equivalent per kg Carcass Weight)</td>
<td>106.23</td>
<td>13.17</td>
<td>11.11</td>
<td>96%</td>
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<tr>
<td>Greenhouse Gas Output per kg Live weight (expressed in kg of CO2 equivalent per kg Live weight)</td>
<td>106</td>
<td>5.42</td>
<td>6.99</td>
<td>5.89</td>
<td>96%</td>
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</tbody>
</table>
Other initiatives.....

Methane PTAs

Improving male fertility

2024 Heterospermic semen field trial

- 2k greenfeed animals on TMR diet
- Expansion to grass diet phenotypes
- Cow phenotypes
Summary

• Dairy herd has expanded by ~24% since 2015
• Beef from dairy now 60% of all beef processed
• Strategy focusing on both beef sire and dairy cow beef merit
• Breeding goals for beef herd and dairy herd now more aligned
• Meat processors now engaged and see benefit of genetic solutions
• Utilizing the cattle breeding database for more than just genetic gain
Thank You