Calf price impacts dairy farm profit too

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Linkage in cattle populations

- Large interrelationship between beef and dairy industry
  - 40% of dairy cows mated to beef sires
  - 35% of animals slaughtered in Ireland originate from the dairy herd
- Quota scenario → many dairy farmers retained beef cross animals on farm
- Abolishment of quotas → all surplus animals sold as soon as possible
Dairy Breeding Objective

• The national dairy breeding objective for Ireland → Economic Breeding Index (EBI)
• Introduced in 2000
• Evolving → reflect overall farm profitability
• 5 sub-indexes
Beef SI:
- Carcass wt
- Carcass conf.
- Carcass fat
- Cow carcass wt

Legend:
- Milk
- Fertility
- Calving
- Beef
- Maintenance
- Health
New Beef trait - Calf Price?

Prerequisite for inclusion of new trait in index:

1. **Economically, environmentally or socially important**
   - 20% of dairy farm income is from sale of calves and cull cows

2. **Easily measurable or be genetically correlated with a measurable trait**
   - Mart data routinely collected by ICBF

3. **Exhibit genetic variation**
Age at Sale - Calves

Majority of calves sold <42d
New Beef trait - Calf Price?

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3. **Exhibit genetic variation**
   - Previous studies shown ample genetic variation
     - \( h^2 = 0.34; \sigma_g = 25.7 \)
Objectives

1. To examine the usefulness of including calf price in the EBI
2. To quantify the impact on genetic gain when calf price replaced progeny carcass traits
   - Carcass weight, conformation and fat score
Materials and methods

- **Selection indexes** were developed for:
  1. All current goal traits in the EBI
  2. Calf price replaced progeny carcass traits
- Previously reported genetic parameters and correlations were used
- **Economic values** were calculated using the Moorepark dairy systems model
- **Relative emphasis** calculated for 5 sub-indexes
Results
Genetic correlations
Between calf price & goal traits

CIV  Milk  MCD  Protein  Fat  SCC  CFat  Loco  Survival  Cowwt  Maint  CD  Mort  CWT  Gest  CConf

Milk  Fertility  Calving  Beef  Maintenance  Health
Response to selection

- **Current EBI:**
  - Increasing calf price by €0.54 per annum
- **Including calf price:**
  - Increases calf price by a further €1.04 per annum to €1.58
  - Little impact on current goal traits but did reduce genetic gain on production traits:
    - Milk: -7.08 kg
    - Fat: -0.18 kg
    - Protein: -0.19 kg
  - Genetic gain in overall profit likely to be reduced
Relative emphasis (%)

- Little change in the overall emphasis on all traits
- Reduced emphasis on the beef sub-index

<table>
<thead>
<tr>
<th>Sub-index</th>
<th>Current EBI</th>
<th>With calf price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>41</td>
<td>44</td>
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<tr>
<td>Fertility</td>
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<td>32</td>
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<td>Calving</td>
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<td>Beef</td>
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<td>Maintenance</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Health</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Conclusions

- Beef component of the dairy herd is an important factor in the EBI.
- The inclusion of calf price in the EBI:
  - will not alter the response to selection for current goal traits dramatically
  - will more accurately reflect on-farm profitability