The Australian system for managing non-replacement dairy calves

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Overview of presentation

- Background - Australian and New Zealand dairy industries, comparison to Irish industry
- Description of dairy calf management in Australia and NZ
- Animal welfare and public perception risks of calf industry
- Dairy calf legislation
- Dairy calf welfare
- Recent calf research
- Future directions for non-replacement calves

Photo from https://www.farmersjournal.ie/dairy-calf-registrations-up-by-42-000-on-2016-291729
Key points

- Australia and New Zealand have a system for slaughtering non-replacement calves at a young age
- This system has inherent animal welfare and public perception risks
- Regulations/legislation can help to reduce these risks, but some calves will still face significant welfare challenges
- Alternatives to early slaughter could help to reduce the welfare risk to calves, as well as the reputational risk to the industry

Photo: https://www.snopes.com/fact-check/veal-crates/
Some context

Australia

Ireland and the UK

New Zealand

Australian dairy regions
## Irish vs. Australian and NZ dairy industries

<table>
<thead>
<tr>
<th></th>
<th>Ireland</th>
<th>Australia</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of dairy cows</td>
<td>1.4 million</td>
<td>1.5 million</td>
<td>4.8 million</td>
</tr>
<tr>
<td>Number of dairy farms</td>
<td>18,000</td>
<td>5789</td>
<td>11,748</td>
</tr>
<tr>
<td>Average herd size</td>
<td>80 cows</td>
<td>261 cows</td>
<td>414 cows</td>
</tr>
<tr>
<td>Litres milk produced/year</td>
<td>7 billion</td>
<td>9 billion</td>
<td>21 billion</td>
</tr>
<tr>
<td>% milk product exported</td>
<td>&gt;90%</td>
<td>37%</td>
<td>95%</td>
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Australian and NZ bobby calf industry

- Bobby calf = a bovine calf < 30 days old and not accompanied by its mother
- Most bobby calves are male dairy or dairy cross calves
- Typically
  - separated from dam during first day of life
  - fed from a bucket, bottle or calf feeder once or twice daily
  - Kept in small groups in bedded calf sheds
  - transported to abattoir at 5-10 days old for slaughter
Calf sheds

Picture from http://www.ngahiwifarms.co.nz/shelter-for-the-calf/
Calf sheds

Australian bobby calf industry

- Main calf processing abattoirs are in Victoria.
- Some calves from New South Wales and South Australia are processed in Vic.
- All Tasmanian calves are processed in Tasmania.

Australian and NZ bobby calf industry

Australia:
- 400,000-700,000 bobby calves killed in Australian abattoirs per year
- 50,000 + bobby calves do not go through the abattoir
  - some are raised for beef
  - little public information available in Australia

NZ:
- 2 million bobby calves killed/year in NZ abattoirs
- Approx. 2/3 of NZ’s beef kill is from the dairy industry
- This includes cull cows, bobby calves and bull beef
Increased welfare risks for young calves

- Increased risk of poor welfare outcomes due to young age
  - Low body fat reserves
  - Poor herding behaviour
  - Immature immune system
  - Less able to adapt to stressors

Bobby calf legislative requirements

Bobby calves transported to an abattoir must be:

- At least 5 days old
- Fed within 6 hours prior to transport
- Alert, able to stand, and not ill
- Transported for a maximum of 12 hours

- Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock
Bobby calf legislative requirements

- Australia - industry guidelines recommend that calves are fasted for a maximum of 30 hours prior to slaughter (not legislated)
- Max. 24 hours off feed is the upper limit suggested by research

Picture from http://www.dairyspares.co.uk/set-rear-young-calves-milk-bar/
NZ regulations

- NZ regulations similar, though a little stricter than Australia
- NZ tightened bobby calf regulations in 2016 in response to the release of video footage of calf mistreatment
- Maximum time off feed is 24 hours
- Calves must be provided with shelter while waiting for pick up on farm
- Some offences can lead to fines without prosecution e.g. exceeding max transport time, transporting unwell or under age calves

Picture from https://www.stuff.co.nz/business/farming/94130240/bobby-calf-rule-changes-just-weeks-away
EU regulations

- Calves <10 days old can only be transported for <100km
- Must be provided with bedding during transport
- Unweaned calves must be fed and rested for 1 hour after 9 hours of transport
- Can then be transported a further 9 hours until they require at least 24 hours rest
- Must be fed twice daily on farm
The Australian/NZ experience

- Monitoring and regulations decrease welfare risk
- However, individual calves and groups of calves still face significant welfare challenges, especially in relation to transport, fasting and handling
- Social licence = public acceptance of agricultural practices – an ongoing challenge in Australia and NZ
- Scrutiny of the industry likely to increase as consumers become more interested in animal welfare and farming practices

Picture from https://www.weeklytimesnow.com.au/news/tasmanian-country/clovelly-dairy-operation-a-credit-to-the-people-behind-it/news-story/1a177418aa9485f8a3a5f637fceec0ad
Social licence risks to the dairy industry

Current bobby calf research

- Aim: to establish the welfare status of Australian bobby calves at the point of slaughter
- Blood collected from >4500 bobby calves at 3 Australian abattoirs
- Blood tests measured indicators of:
  - Energy status
  - Hydration
  - Colostral immunity
  - Muscle fatigue/damage
Preliminary results

5-10 day old bobby calves at 3 Australian abattoirs

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<td>Colostral immunity</td>
<td>Total protein</td>
<td>67 %</td>
<td>&gt;52</td>
<td>58.7</td>
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Results - summary

- Results suggest that most calves had adequate hydration and energy
- Poor colostral immunity in around 33% of calves; similar proportion to a recent on farm study in Australian heifer calves
- No measurements of stress or behaviour taken
- Further analysis will assess the effects of
  - distance travelled
  - time in the supply chain, and
  - weather conditions

on blood parameters
Alternatives to bobby calves, future trends

- Likely a combination of strategies
- Solutions may include
  - Sexed semen
  - Dual purpose breeds or dairy-beef crosses
  - Premium meat products e.g. rosé veal, Wagyu x dairy beef
  - High welfare/natural dairy products with premium price e.g. calf at foot dairies
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Acknowledgements

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Thank you to my supervisors and to the people who provided me with technical assistance during the research project.
Questions?

Photo from https://hoards.com/flex-313-Calf-and-Heifer.html
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