Profile

Passion of animals began for Aprille while growing up, enjoying the company of pigs at ‘Porkdale Piggery’ in Perth and sheep and the rest of her fury friends on a farm in the central wheat belt. After leaving school early, she started work but after a number of years her passion for animals was rekindled.
The Buck Stops Here!

- stress of semen collection

Aprille Chadwick
How stressful is it?

Electro-ejaculation

Versus

Artificial vagina

+
Background

- Stress and Animal Welfare
- Cashmere Industry
  - Sire Reference Scheme
- Reproductive Technology
  - semen collection methods
- Evidence of stress
  - Previous research
  - Stress and reproduction
  - Human experience
Benefits to Industry

- Adoption of ‘Lower Stress’ technologies
  - Improved animal welfare
  - Reduced costs $\downarrow$
  - Improves accessibility
  - Positive society attitude
  - Opportunity for growth
Materials and Methods

- **Animals**
  - 3x3 Latin square design, n = 9
  - habituation to handling
  - test procedure

- **Treatment Groups**
  - natural mating, AV, EEJ

- **Evaluation**
  - stress hormone
  - Behaviour
## Mean buck behaviour during test

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Natural</th>
<th>AV</th>
<th>EEJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>test duration (sec)</td>
<td>82.5*a</td>
<td>43*b</td>
<td>275.3*c</td>
</tr>
<tr>
<td>mounts</td>
<td>3.3</td>
<td>1.7</td>
<td>No expression of sexual behaviour</td>
</tr>
<tr>
<td>licking</td>
<td>1.8</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>lateral approach</td>
<td>2.2</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>pawing</td>
<td>0.2</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>flehmen</td>
<td>0.3</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

* Superscript with different letter denotes significance
## Mean buck behaviour during test

<table>
<thead>
<tr>
<th></th>
<th>Natural</th>
<th>AV</th>
<th>EEJ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>low beat</strong></td>
<td>0.5</td>
<td>0</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>high beat</strong></td>
<td>-</td>
<td>-</td>
<td>9.8</td>
</tr>
<tr>
<td><strong>bleat intensity (dB)</strong></td>
<td>56.3*a</td>
<td>-</td>
<td>88.6*b</td>
</tr>
<tr>
<td><strong>struggles</strong></td>
<td>No stressful behaviour observed</td>
<td>No stressful behaviour observed</td>
<td>5.3</td>
</tr>
<tr>
<td><strong>muscle contraction</strong></td>
<td>-</td>
<td>-</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>voltage (V)</strong></td>
<td>-</td>
<td>-</td>
<td>3.1</td>
</tr>
</tbody>
</table>

* Superscript with different letter denotes significance
Cortisol response

![Graph showing cortisol response over time for different groups: AV, EEJ, and Natural. The x-axis represents time in minutes, and the y-axis represents cortisol concentration in ug/L. The graph illustrates peaks and troughs in cortisol levels for each group.]
Conclusions

So far .....

- EEJ prevents the expression of sexual behaviour, compared to AV where most sexual behaviour is expressed.

- EEJ is the only technique where bucks expressed stressful behaviour.

- Semen collection via AV is quicker than EEJ when bucks are habituated to humans.
Acknowledgements

Thank you to Steve Gray, Paul Hamilton,

My supervisors:
Drs Dominique Blache & John Milton

And the rest of the UWA crew to help make the experiment possible

Thanks to RIRDC and UWA for funding this research