



National Animal Welfare RD&E Priorities Workshop

Drewe Ferguson

www.csiro.au



Task – Review current themes

(state of play, gaps, gamechangers)

1. Animal Welfare Assessment
2. Pain Assessment & Management
3. Management, Housing & Husbandry
4. Transport, Euthanasia & Slaughter Impacts

Lets be honest.....can't really do this justice in 20 min!

So here are a couple of points/thoughts relevant to each.

1. Animal Welfare Assessment

Assessment of affective states is still paramount

- Emphasis on more practical and validated measures
- Validation - integration of behavioural and neurophysiological responses

New tools in the toolkit

- Animal sensor technologies (eg. RFID/smart tags)
 - Enables measurement of freely behaving animals in their natural environment
 - Provides capacity to measure “what” they’re doing and possibly “how” they are behaving.
- Novel biomarkers (unleash Alan T and Dominique)



Positive welfare - what does this mean and how can we prove it?

- Recognition of animal sentience within new legislation
- Consumer demand

2. Pain Assessment and Management

Trends

- Positive outcome – uptake of pain relief for cattle and sheep in Australia.
- EU – removal/banning of painful procedures (no pain). Some countries going above the base EU animal welfare legislation/regulations.

Interesting R&D

- Novel analgesics (eg. cannabinoids) and long term relief
- Improved delivery (eg. transdermal, self-medication)
- Multimodal pain management (handling distraction, social transmission, alternatives eg TENS (transcutaneous electrical nerve stimulation))

2. Pain Assessment and Management

Gene editing (CRISPR)

- Emerging breeding technologies to obviate the need to perform procedures such as dehorning (cattle) and castration (pigs).
- Also relevant in improving resilience traits (disease resistance, heat tolerance)
- Still plenty of technological and commercialisation risks to navigate (IP ownership, is it GMO or non GMO?).



3. Management, Housing and Husbandry

Challenging to overview given large sectoral diversity but at a high level.....

Environmental enrichment is still a key focus

- intensive and extensive production systems

Understanding individual differences

- Variation in choices (eg use of the range in layers)

Sustainable intensification

- What does this look like? Managing health and welfare risks is still the Achilles heel of intensive systems

Navigating climate change in animal production

4. Transport, Euthanasia and Slaughter

Transport

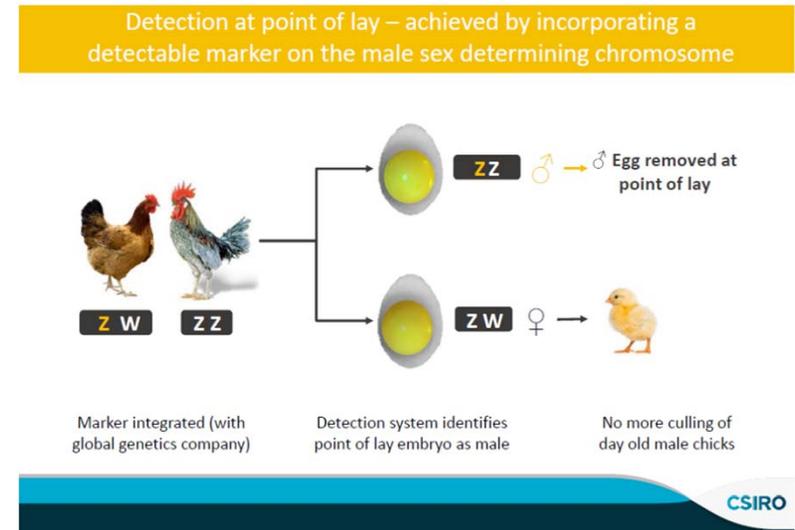
- Ongoing R&D and regulatory control regarding transport (nothing really new)
- Design of t'port, abb facilities

Euthanasia

- Egg sexing (transgenic breeding)
- On-farm culling - alternatives to CO₂ (novel gas mixtures, decompression - LAPS)

Religious slaughter

- Ongoing efforts to develop religiously and ethically acceptable stunning alternatives.



Doran et al 2017

Summary

- These 4 priority themes will continue to remain important in the context of animal welfare. Perhaps needs some fresh thinking around reframing them in a more integrated context.
- Advances are occurring at an incremental rate (is this fast enough?).
- Gamechangers (gene editing maybe?).

Some further thoughts.....

We still tend to operate within a reductionist paradigm and perhaps we need to tackle animal welfare using a more holistic or systems-based approach.

- Accelerating impact through integration of multiple solutions
- Adapting the animal (breeding) + adapting the production system (management)

Might be outside my remit but.....

Given the scope and function of the NAWRDE Strategy, there will be ongoing challenges identifying leading and/or appropriate cross-sectoral opportunities.

- most of the supported R&D to date has been relatively small review/scoping type studies.

Are we maximising the value from the strategy? Is it time to re-examine the strategy?

- Purpose and scope
- Strategy
- Function

Thanks

