

Stakeholder engagement to support the development of next generation decision support tools

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Positive support for
“next gen” tools
BUT
data use & business
stage influenced
demand

Data access,
integration &
variability in
recording a key
barrier to develop &
use ‘next-gen’ tools

Opportunity to
provide input highly
valued by all
participants

Why are we thinking about next-generation (“next gen”) tools?

- Cow’s future performance influenced by :



Genetic effects

- Breeding values
- Inbreeding
- Heterosis (Hybrid vigour)



Non-genetic effects

- Lactation number
- Calving date
- Illness
- Pregnancy



Farming System/Environment

- Feeding system
- Climate
- Management decisions

- Combining multiple information sources could support more informed decision making
- Current management tools (in Australia) do not jointly consider all these sources.



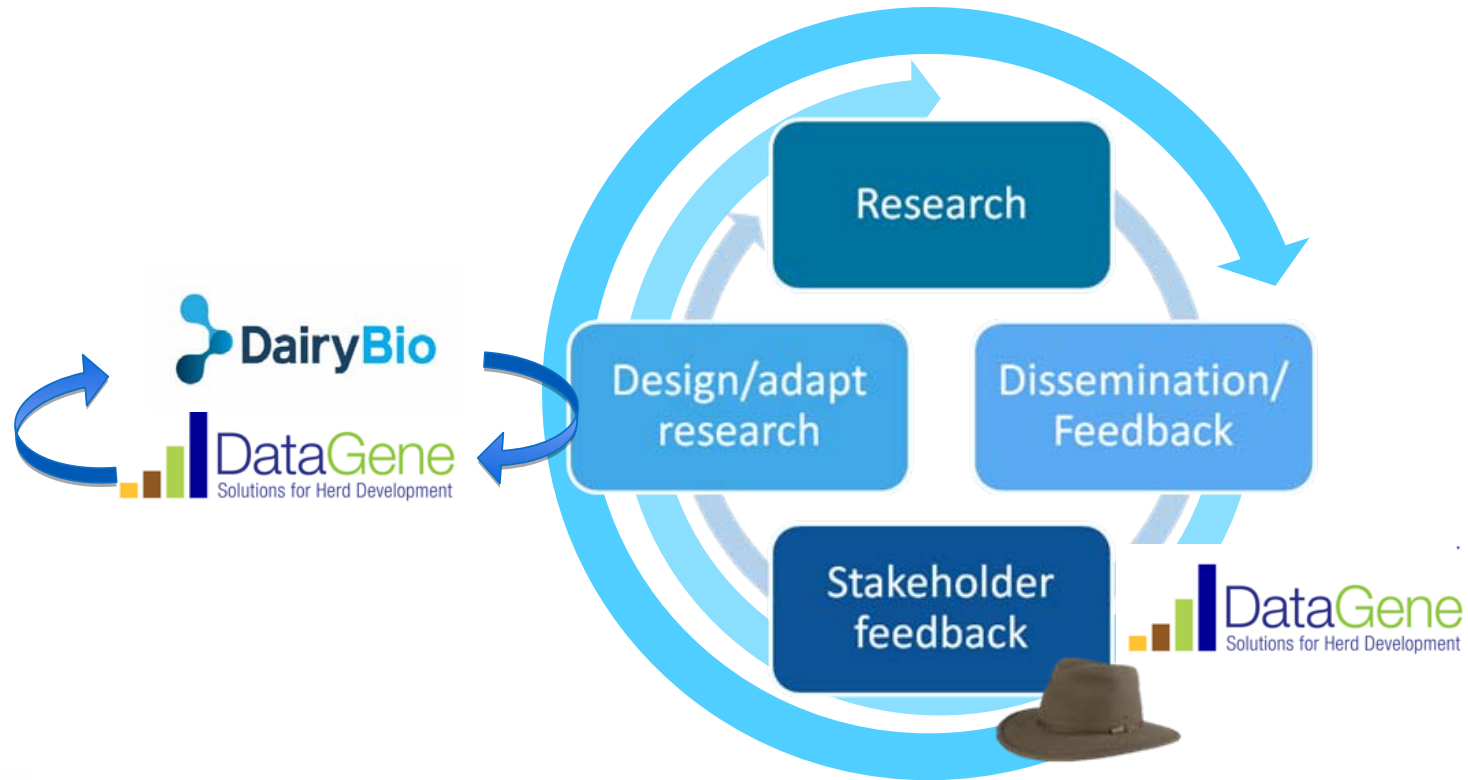
Goal:

- To seek early stakeholder feedback and input on 'next-gen' decision support tools being considered for development.
- Focused on applications in culling decisions & mating decisions.

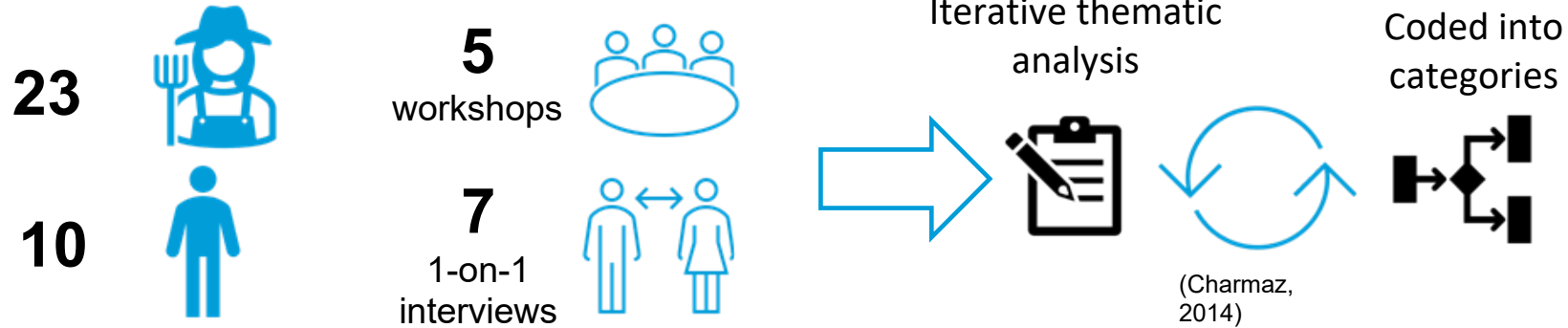
Why?

- To ensure tools align to needs of dairy farmers.

Collaborative co-innovation cycles



Approach



Semi-structured facilitation style

- What information was being used to make decisions on culling and mating?
- Understand farmer interest in next generation management tools
 - for culling & mating decisions

Main Categories

- Current practices → use of data
- Demand/interest for new tools
- Barriers to engagement
- Tool features and preferences
- Other insights

Current decision making for breeding and culling

- Big variation exists in on-farm approach to decision making.
- Often advisor involvement in mating/breeding decisions (i.e. semen salesperson)
- Several potential data user groups identified

‘Data-driven’

- Responded to targeted emails
- Described systems, processes and strategies for decision making
- Multiple farm software programs
- Used multiple information sources, typically compiled in excel
- Described data management as labour intensive

‘Data-dippers’

- Recording some data
- Data not often used in decision making
- Shared some features of ‘data-driven’ and ‘data-disconnected’
- Can move between groups

‘Data-disconnected’

- Limited data recording or use of data in decision making
- Could have smaller herd size
- Group recognised by both farmers & advisors
- Make decisions on limited/incomplete data

Is there demand for new tools?

- Participants responded positively to proposed new tools and opportunity to bring genetic, non-genetic & environment together & felt no existing tool does this.
 - ‘Data Driven’ > ‘Data Dippers’ > ‘Data Disinterested’
- Demand/interest in tools influenced by herd level, economic, business and social factors.
 - Businesses in growth phase less interested in decision support tools
 - Capacity for voluntary culling
- **BUT.....**

What are the barriers to developing and using tools?

“I was thinking the last 20 years have been very, very bad for data in Australia because now we've got data sitting in many places and almost no one's talking to each other”

Quote from service provider

Key barriers

Data access and integration



- Farmers **do not want** to duplicate data entry.
- Data siloed at individual farm & industry level.
 - Existing data not used in decision making.
- No single database currently integrates all the information needed to develop this tool.
 - Of 11 data sources stakeholders thought should be included: only 4 easily accessible, 4 partial/limited availability, 3 no availability.
 - Only 2 changes to data accessibility by 2026.



Variation in data recording practices



- Big variation in recording practices from farm to farm.
- Any tool developed needs to be able to handle variation in data recording practices in industry.
- Farmers who would benefit most are likely to be those that don't record much data.
 - lack of data could be barrier to tool usefulness.

Is there a clear preference for a mating tool or a culling tool?

- Recurring theme was how interlinked mating and culling decisions are
 - What is the optimum herd age structure?
 - What is the optimum replacement rate?
 - Outcome: developed flow chart to illustrate linkages
- If preference existed, varied by region & business
- Mating or culling focus may initially be informed by data availability.

Other learnings

- Semi-structured approach created opportunity to uncover ‘nuggets of information’
 - Genomics, inbreeding, education, sexed semen adoption
- Tapping into existing events provided more diverse participant profiles
- Service providers engagement strong & rich information source
- Positive feedback from participants on the discussions and workshops

Next steps?

- Leaning into co-innovation cycle → key findings presented back to funders

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- Valuable insights into current data practices, farmer interest & other issues BUT....
- Delivering a ‘next-gen’ tool accessible to most farmers not yet possible
 - Value in continuing tool development today limited by data
 - Other work possible to answer questions raised

Acknowledgements



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Additional content



Desired features of new tools

The below tables highlight some of the requested data integration and features of tools. Green, orange & red boxes indicate the availability of this information in DataGene's Central Data repository now and by June 2026 (DairyBio end)¹

Data sources/integration	Available Now	Available June 2026
Herd test data	Green	Light Blue
Other milk records (robots, inline meters)	Red	Yellow
MIR data	Yellow	Green
Mastitis, cellcount	Green	Light Blue
Other health information (lameness, metritis, antibiotic use)	Yellow	Light Blue
Fertility, insemination, calving events	Green	Light Blue
Pregnancy scanning data	Yellow	Light Blue
Collars & smart tech data	Red	Light Blue
On-farm software recording systems	Yellow	Light Blue
Genetics data	Green	Light Blue
Temperature- humidity records (daily)	Red	Light Blue



Tool features	Available June 2026	Future
Consider lifetime data not current lactation only	Green	Light Blue
Realistic economic parameters	Yellow	Light Blue
Consider systems model – capture flow on effect of decisions (I.e. Impact of lower conception rates with sexed semen & change in marginal value of pregnancy over lactation)	Yellow	Light Blue
Starting parameters that a farmer/user can manually adjust	?	Light Blue
Use a dashboard for visualisation	?	Light Blue
Traffic light system so manage groups not individual cows	?	Light Blue

¹Subject to revision after feedback

Illustration of linkages between mating & culling decisions

What is my optimum voluntary cull rate?
What is my optimum replacement rate?

