# Is Farmeromics

# the missing 'omic'?

Michelle Axford

Maxford@datagene.com.au

AGRICULTURE VICTORIA

Ensuring that recording practices are consistent and accurate will make genetic selection for improving calf health feasible. While the potential

# sure, blame the lazy farmers

SB was higher in smaller calves compared with larger calves. However, in Australia improvement in data recording practices is needed, to facilitate routine genetic evaluations.
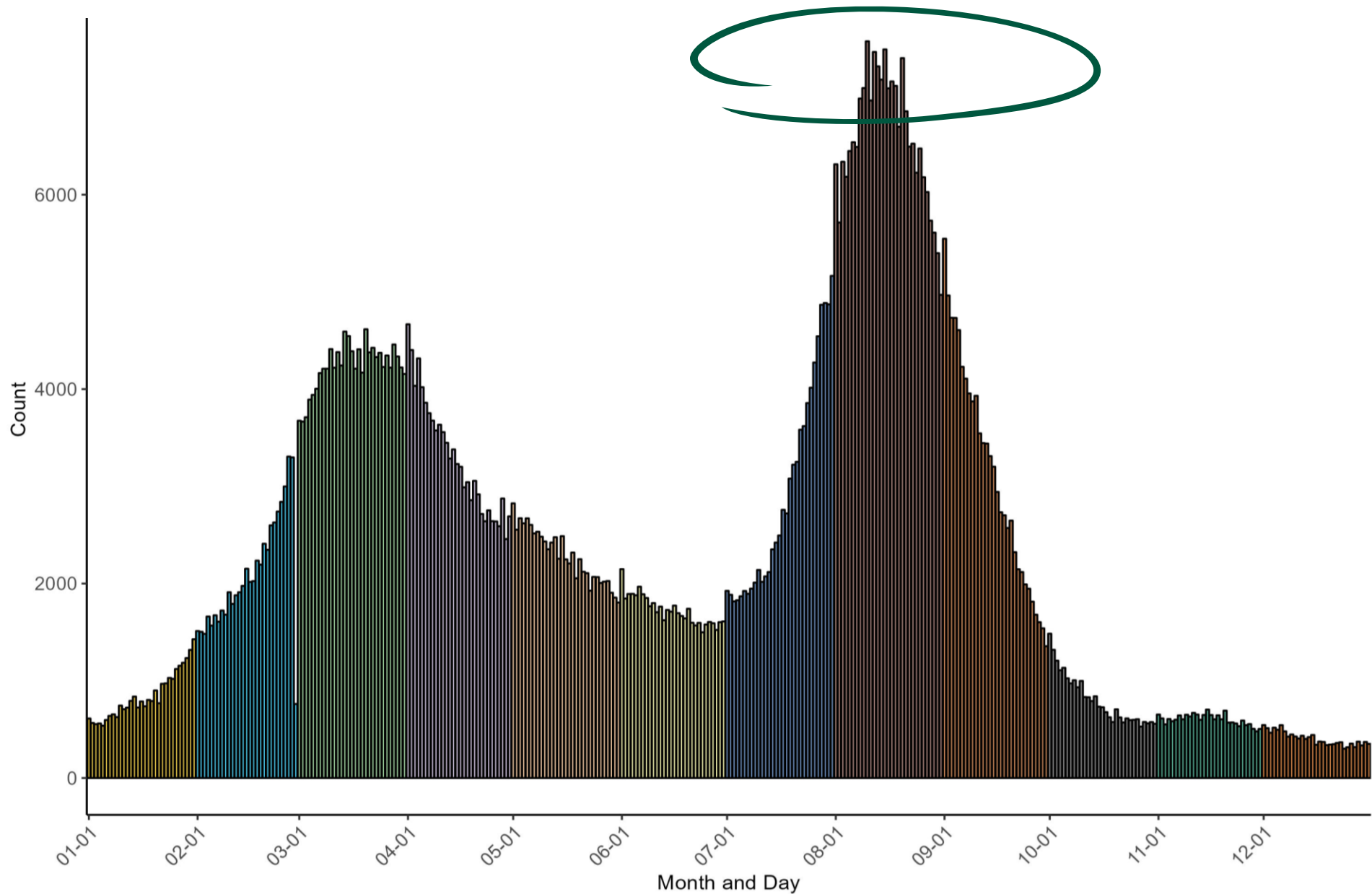
Axford et al., 2024

Calving observations with fate and ease recorded, over time.

Cows on test (Herd Imp Rep)  Percent of cows on test with calving records

Axford et al, 2023
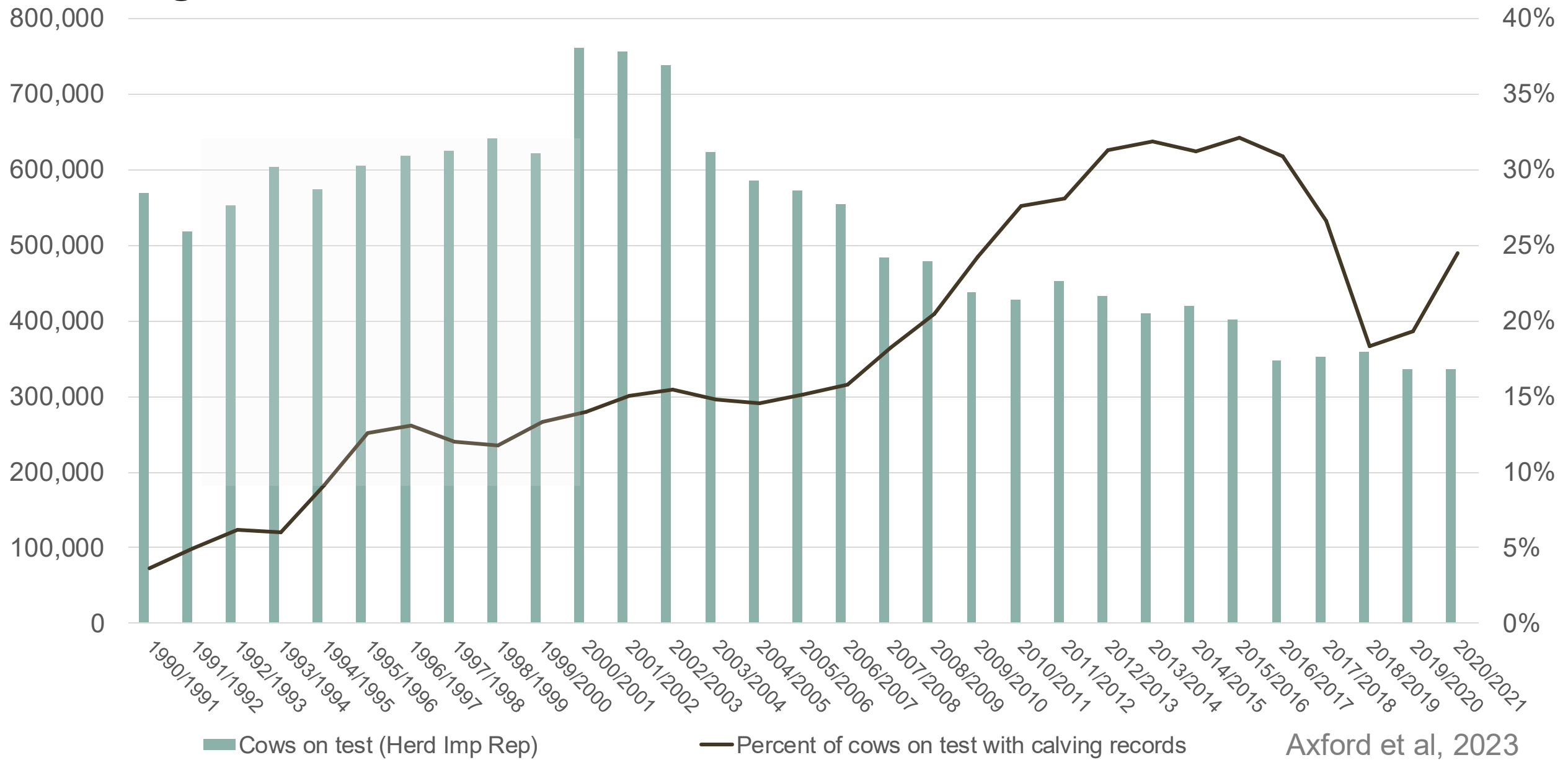
# Distribution of calving dates

DataGene CDR 2014-2023

# can we advance our research with 'farmeromics'

# Farmeromics

## "the study of farmer-driven, biological data recording, at scale"

# Farmeromics

What problems do farmers want to fix, using data?

What is the motivation to record?

**farmer-driven,**

# Farmeromics

What data do you want?

## biological data

What data might be available?

OFFICIAL

# Farmeromics

Do the recording practices fit?

**recording, at scale"**
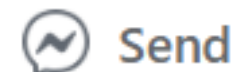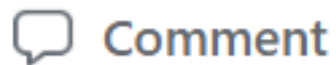
Have we asked?

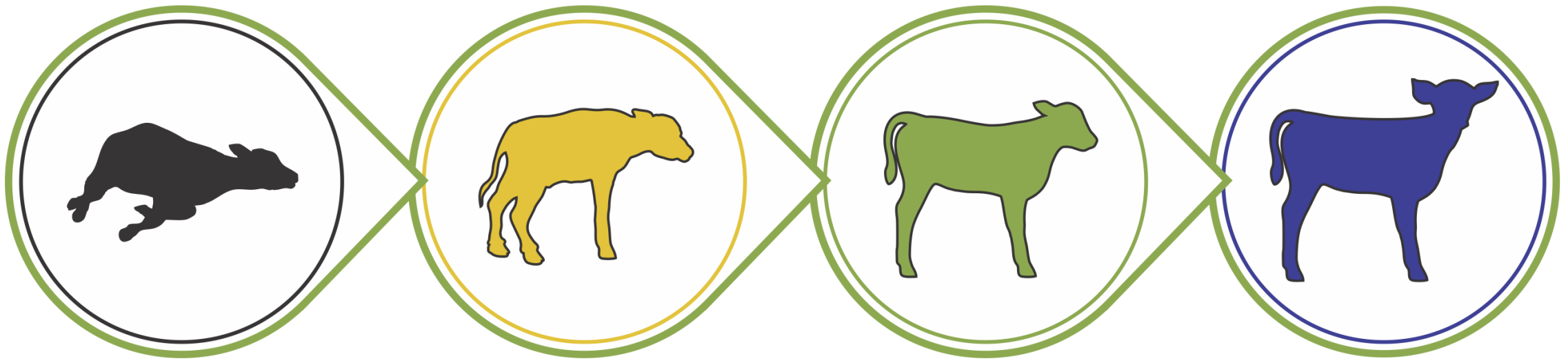OFFICIAL

# Example 1: Calf vitality



January 21, 2018 · 

Anybody else's calves acting stupid tonight? Or is it just mine?

5 Comments

👍 Like          💬 Comment          Send
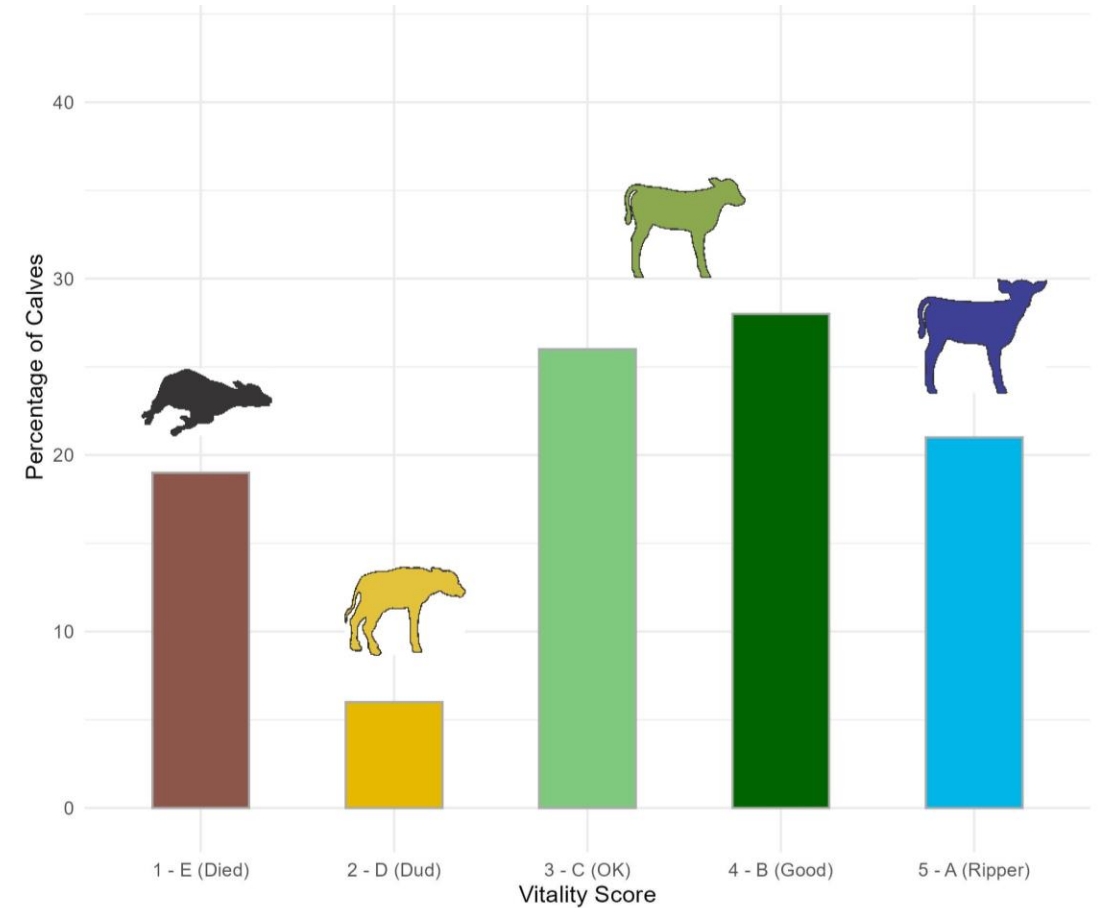
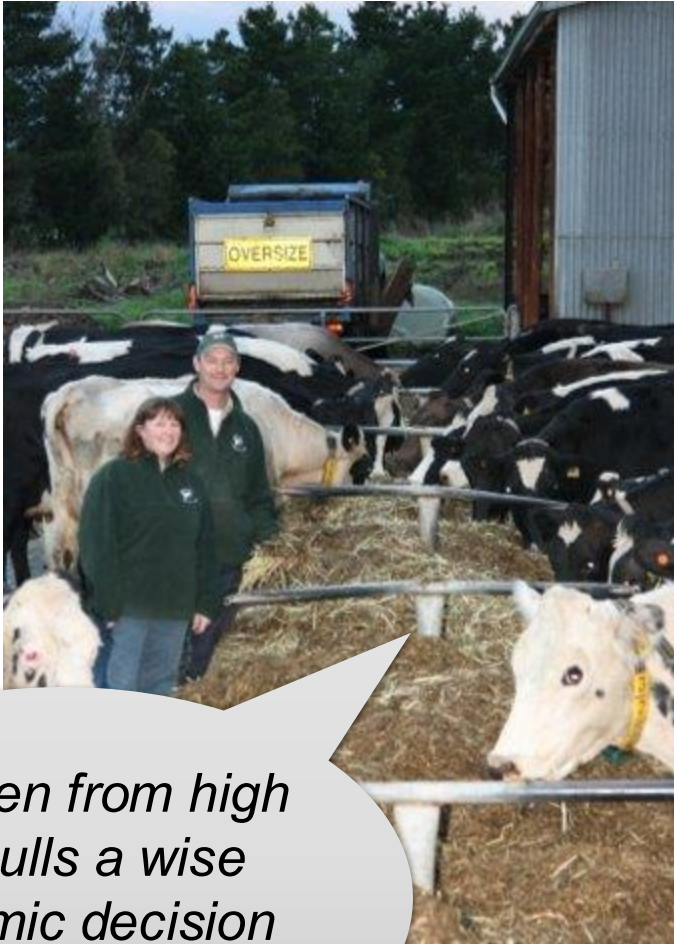# Example 1: Calf vitality



Dead   Dud   OK   Ripper

# Example 1: Calf vitality

- Idea developed with calf participants

- Highest heritability (11%)

    - Subjective scoring, continuous trait

    - Avoids 'diagnosis'

    - Favourably correlated with health and scours

- Trait with the most community interest

- Only half of the participants recorded

- Would require farm software upgrades to scale its collection



Axford et al, 2025

# Example 2: Feeding the Genes



Are daughters of high merit bulls more likely to crash and burn?

Do genetics make a difference in all feeding systems?

Is semen from high merit bulls a wise economic decision for my farm?

Do I need to feed high rates of supplements to benefit from high merit bulls?

# Example 2: Feeding the Genes

- Aimed to answer farmer questions

- Feeding system data wasn't easily accessible

  - Short survey **5** questions
  - Carefully crafted invitation to targeted herds
  - Multi-disciplinary team that included well-known spokespeople
  - High response rate (24%)
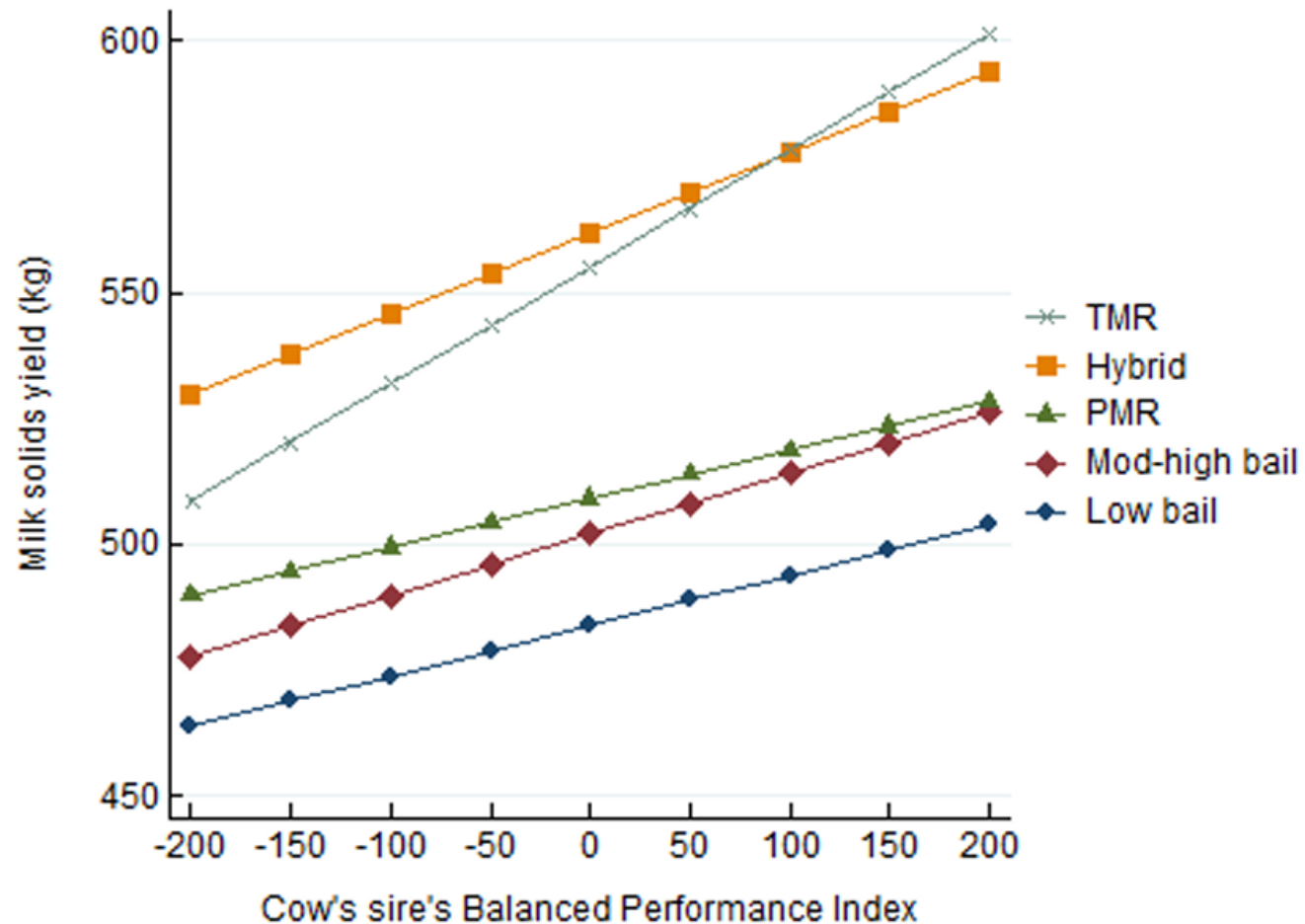


Morton et al, 2013

# Have you examples where farmers have

- changed something that lifted a project's practicality and/or efficiency,

- revealed new data through discussion,

- fine-tuned the research question, or

- made the discoveries more meaningful.

# Is it worthwhile studying

- What problems do farmers want to fix, using data?

- What is the motivation to record?

- What data might be available?

- Do the recording practices fit?

- How do we ask?

# Can we avoid writing
# the easiest sentence to write?

# Farmeromics

## "the study of farmer-driven, biological data recording, at scale"