The importance of farm systems thinking in animal recording

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DairyNZ

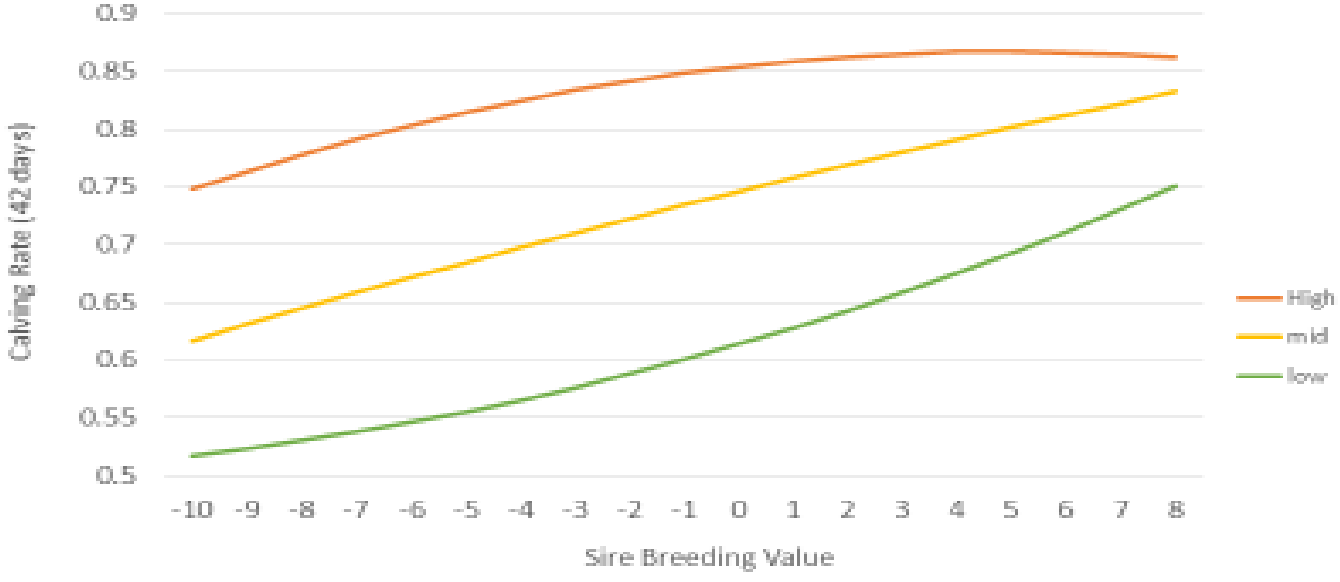
Situation

- Quality phenotypes are foundation
- New traits – fertility & health
  - Managed & (maybe) recorded at individual cow level
  - Assisted by new data capture
- Move towards dedicated ‘data herds’
  - High quality pheno & genotypes

NZ context

- Data quality is variable in National Herd
  - Expansion, large herds, efficient staffing
  - Value in basing AE on subset of herds?
- Importance of reproductive performance
  - $500M/yr lost opportunity
  - On-going issue for farmers
  - Large research investment in divergent lines
    - Test phenotype against BVs
    - Identify better predictor traits
    - Understand physiology of genetics

Sire impact on fertility where herd reproductive performance is, on average, high, mid or low.



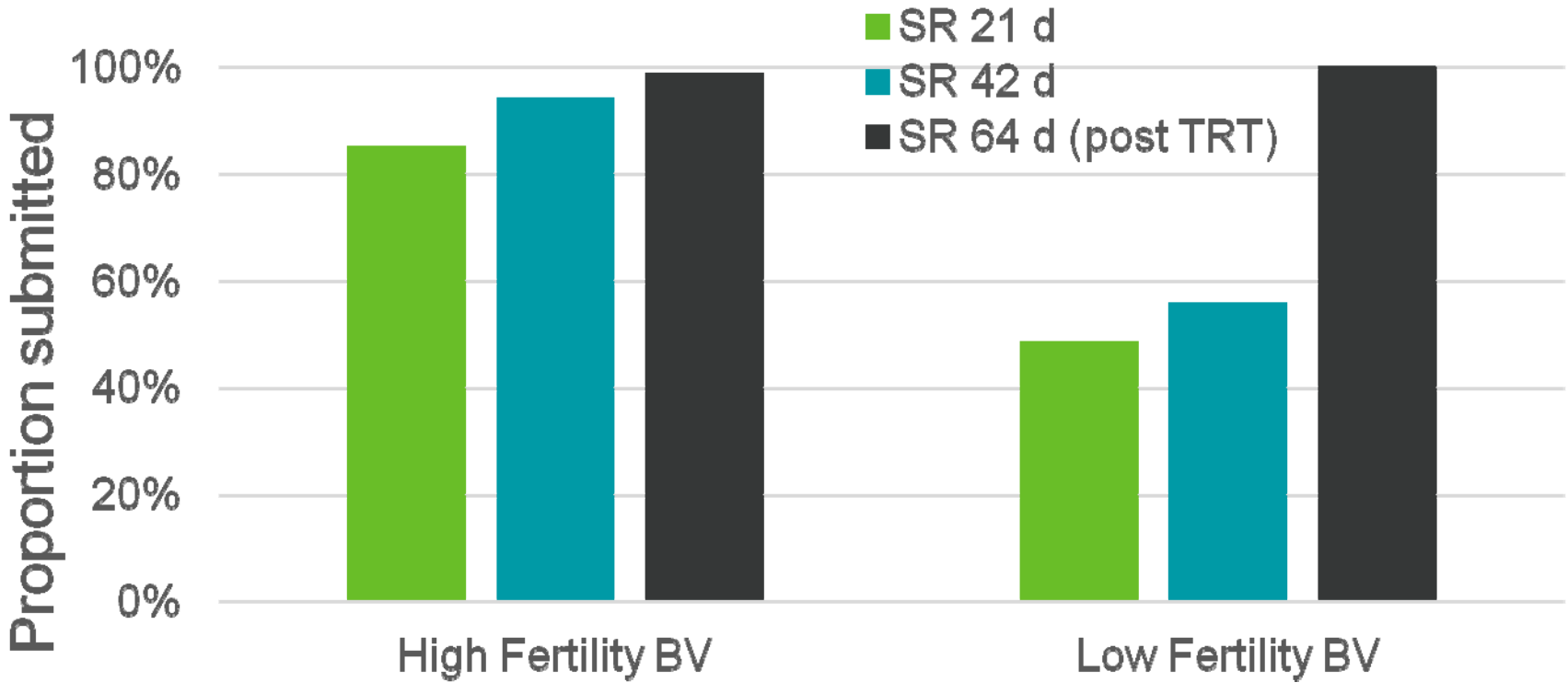
Calving Rate (42 days): The percentage of a sire's daughters who calved within the first 42 days of calving, within their respective herds.

Why?

- Do low performing herds suffer from mis-management?
  - Poor oestrus detection
  - Poor Body Condition Score

- Or high performing herds benefit from intervention?

Divergent Fertility Lines
% Submitted for mating



Why??

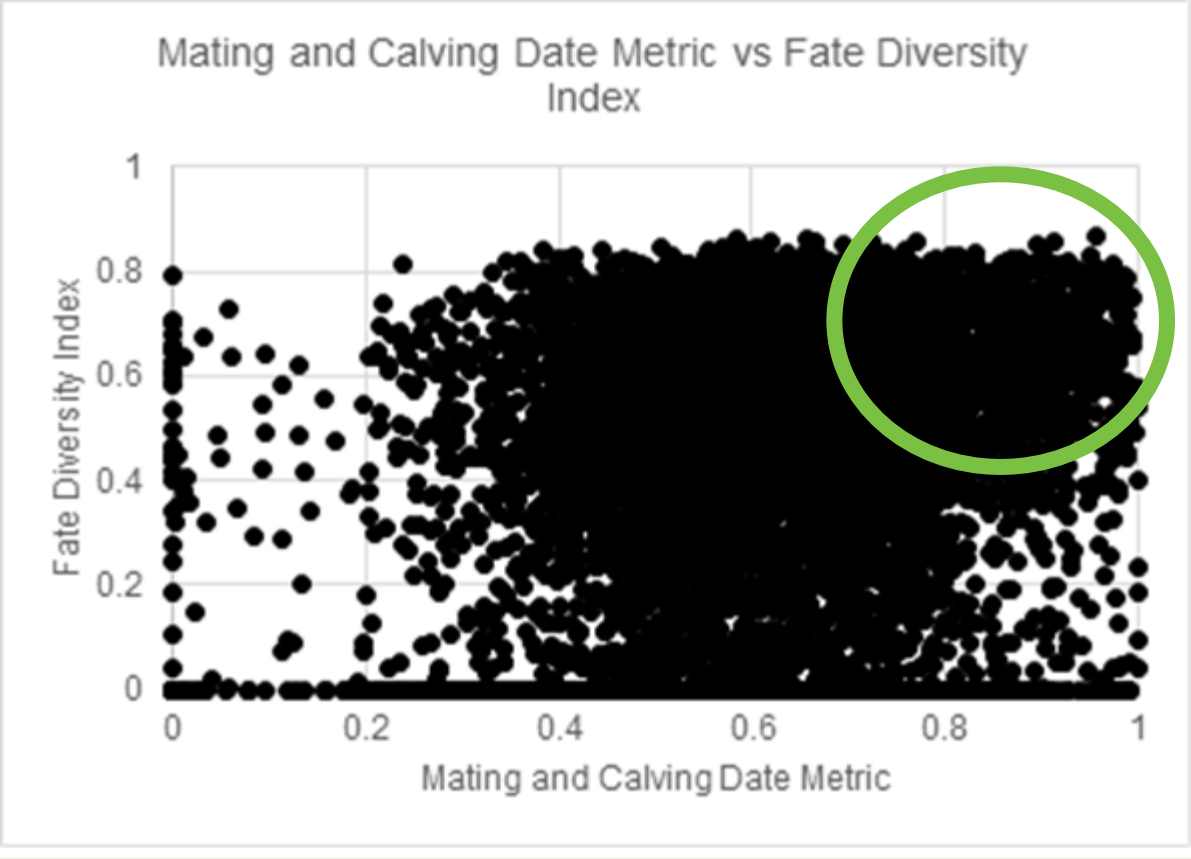
On-Farm Intervention

- All heifers
  - Calve early – longer to mating
  - Separate heifer mob – might be milked OAD
- Non-cycling or low BCS heifers
  - Milk OAD – might be in separate mob
  - Preferentially fed
  - Run with bull
  - CIDR/PG

My contention

- Divergent lines show a large difference in fertility
  - Greater than predicted by modelling
- Quite possible that the smaller genetic effect in high performing herds is due to management intervention
  - including at individual cow level
  - and unrecorded
- So, likely that the genetic effect in mid-lower herds is closer to the ‘true’ signal
  - Economic cost
  - Genetic standard deviation & heritability

Herds with the best data



Two questions

- What data do we need to have from within a herd?
  - Preferential treatment
  - Hormonal treatments
- Which herds do we want data from?
  - Representative – current situation
  - Low intervention – future?