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UPDATE OF THE NZ NATIONAL BREEDING OBJECTIVE

Interbull Meeting – Nantes – August 2013

Acknowledgements

- Jeremy Bryant – DairyNZ and NZAEL
- Rachel Wood - AEU
- Bevin Harris and Dave Johnson - LIC
- Dave Hayman - Liberty Genetics
- Phil Beatson - CRV Ambreed
- Nicolas Lopez Villalobos and Hugh Blair - Massey University
- Ken Dodds - AgResearch
- Bruce Thorrold - DairyNZ
- Peter Amer
- Bruno Santos
- Cameron Ludemann
- Tim Byrne
- Peter O’Neil

Background



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- The New Zealand dairy industry has been well served by genetic improvement
- Self determined genetic trend – unlike many others
- Pasture based production systems
- Seasonal calving
- Competing AI companies
- Industry good organisation oversight
 - DairyNZ
 - NZAEL

*Dairy***NZ** 

The process



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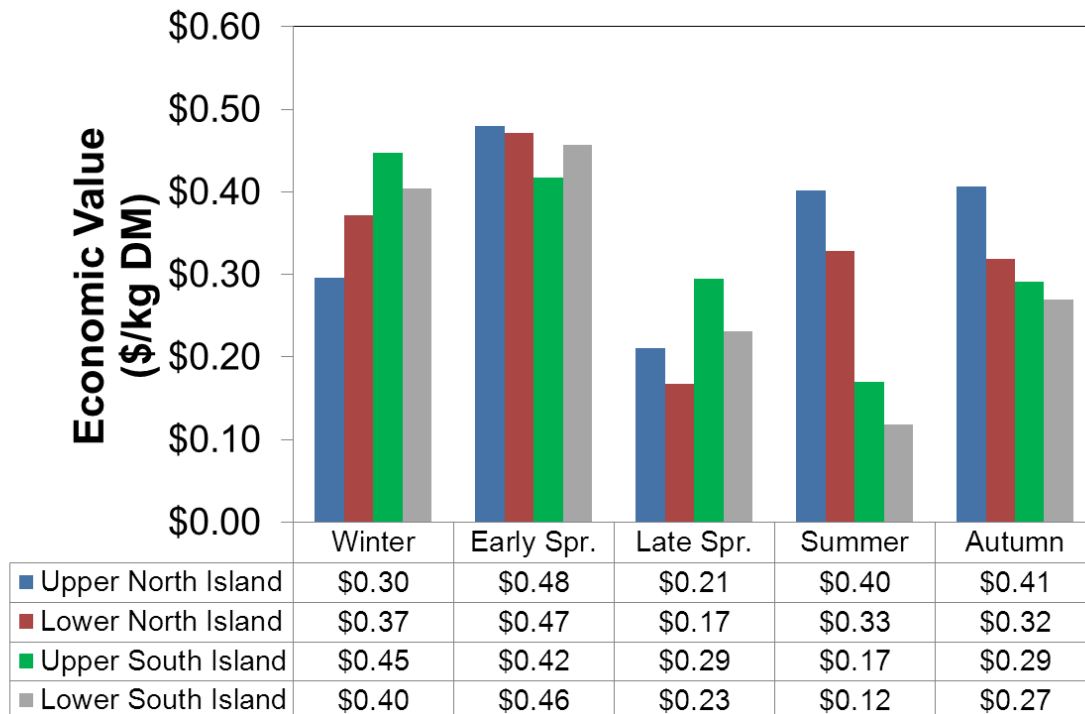
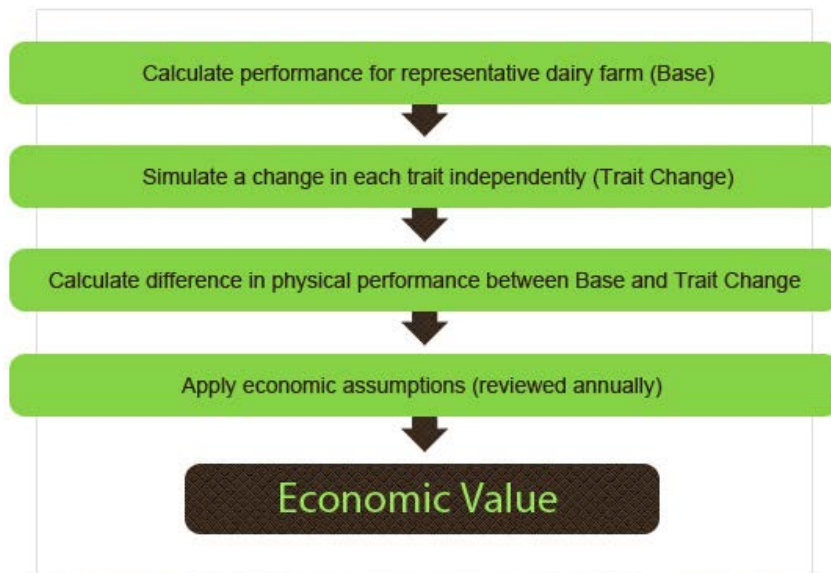
- ❑ Farmer workshops
- ❑ Novel survey based approach - farmer preferences
- ❑ Wide range of views
- ❑ Increasing preference for functional cows
- ❑ New bio-economic model (spreadsheet)
- ❑ International and internal review plus further industry consultation
- ❑ New index weightings released Feb 2012
- ❑ Economic values under development for new traits

*Dairy***NZ** The DairyNZ logo, with 'Dairy' in a grey script font, 'NZ' in a bold green sans-serif font, and a stylized green and blue graphic element to the right.

Key change – feed costs

- Historically a fixed feed constraint
 - ▣ More feed required = less cows = less profit
 - ▣ High cost of feed, same for all stock classes
- New model has region and season specific feed costs
 - ▣ Spring and summer feed costs low (surplus)
 - ▣ Winter and autumn feeds costs high (supplements)





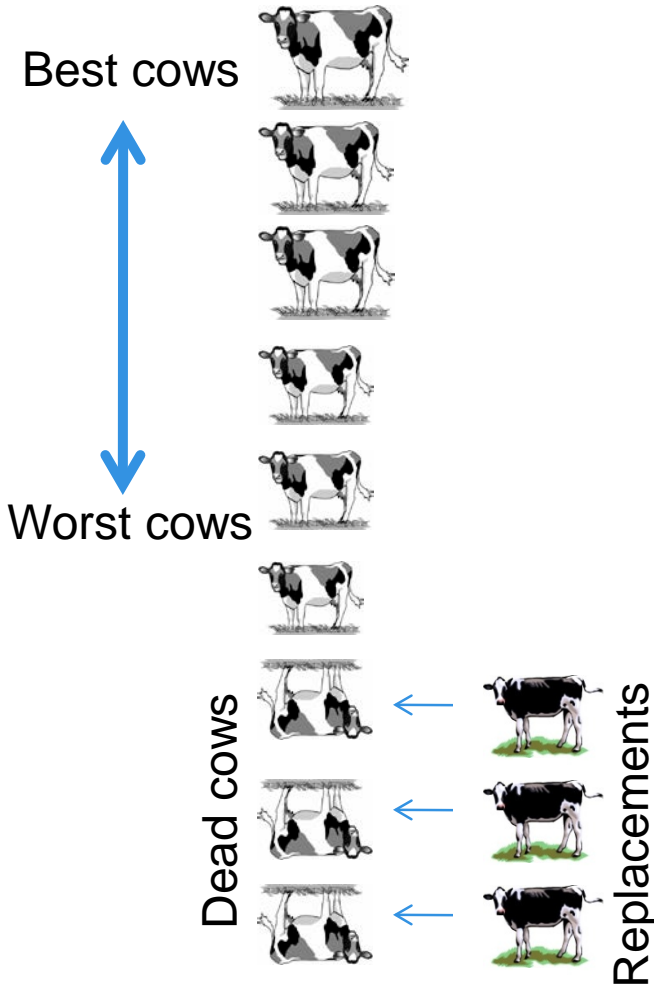
Key change – feed costs

- Used rescaling theory to maintain assumption of fixed farm pasture resource
- Modest impact on existing traits
- Seasonal feed prices useful for new traits
 - Body condition score (mobilisation saves cheap spring feed, and gets replaced with expensive autumn feed)
 - Persistency (persistent cows shift feed requirements to more expensive feed periods)

Key change - survival



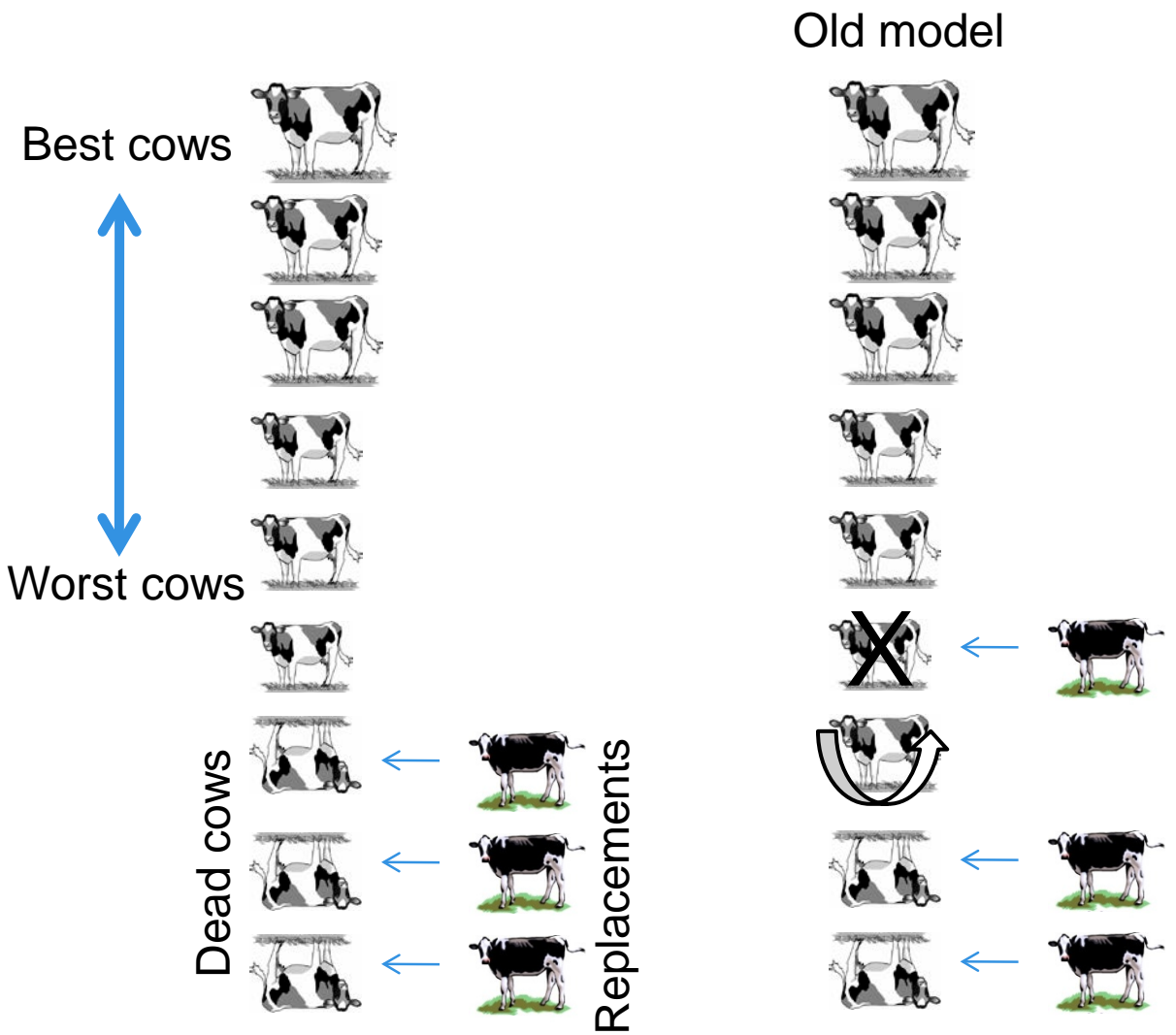
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Key change - survival



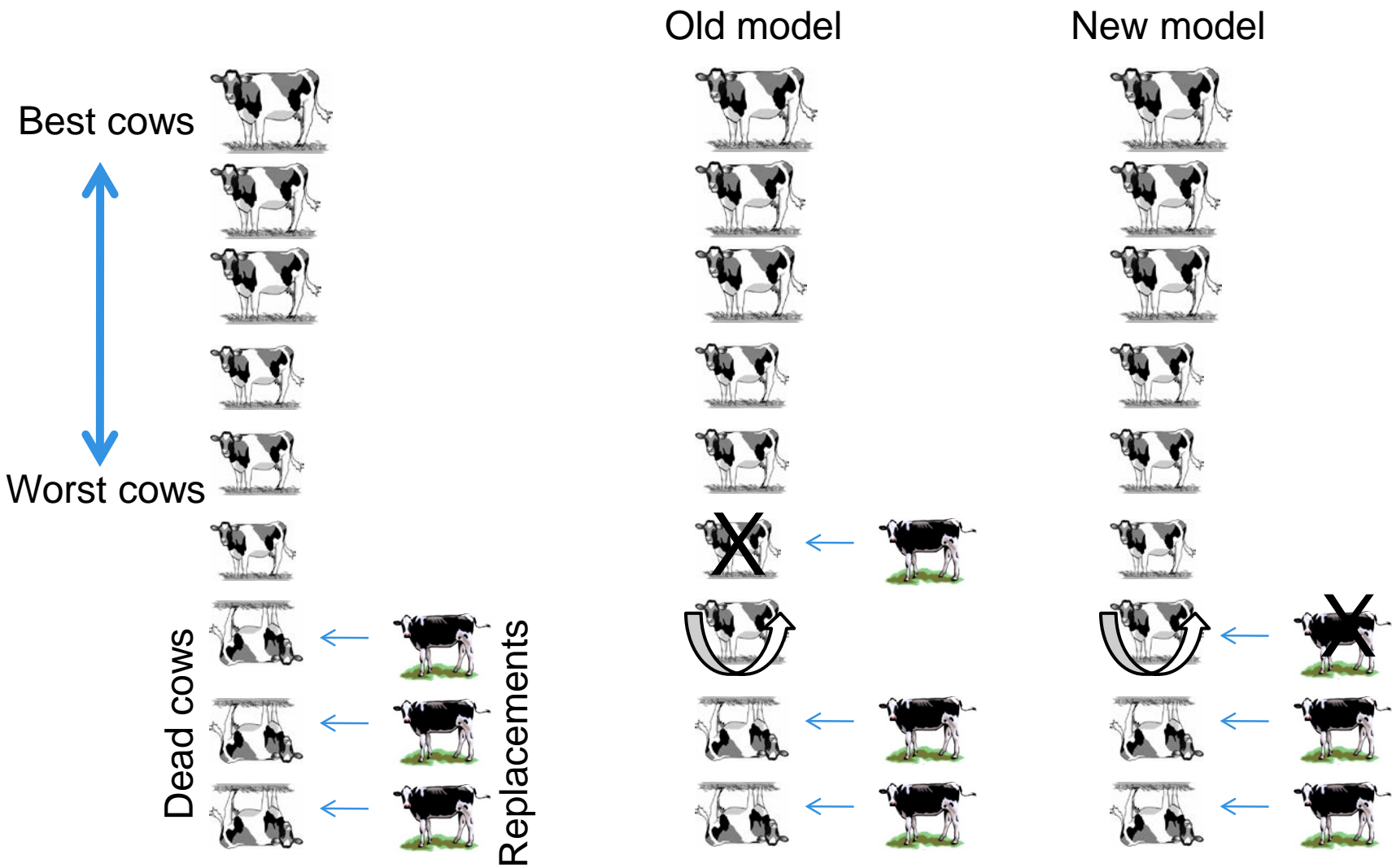
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Key change - survival



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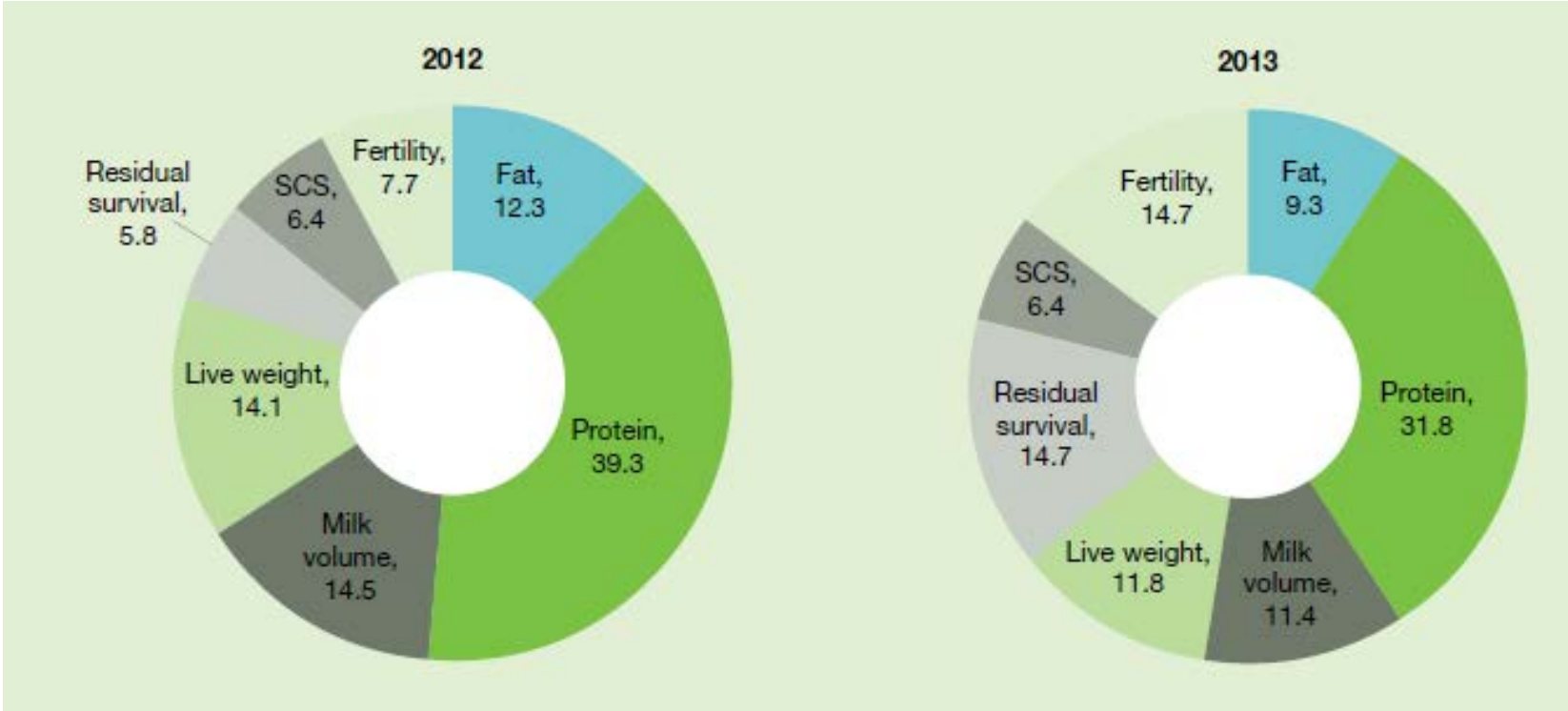
Key change - survival

- Survival now has a higher economic value, because
 - ▣ saved cost of a replacement is high
 - ▣ benefits from voluntary culling are more modest
- Survival EV contributes to the economic values of
 - ▣ Fertility (many cows culled for poor fertility)
 - ▣ Somatic cell score (many cows culled for high SCC)

Effective trait emphasis



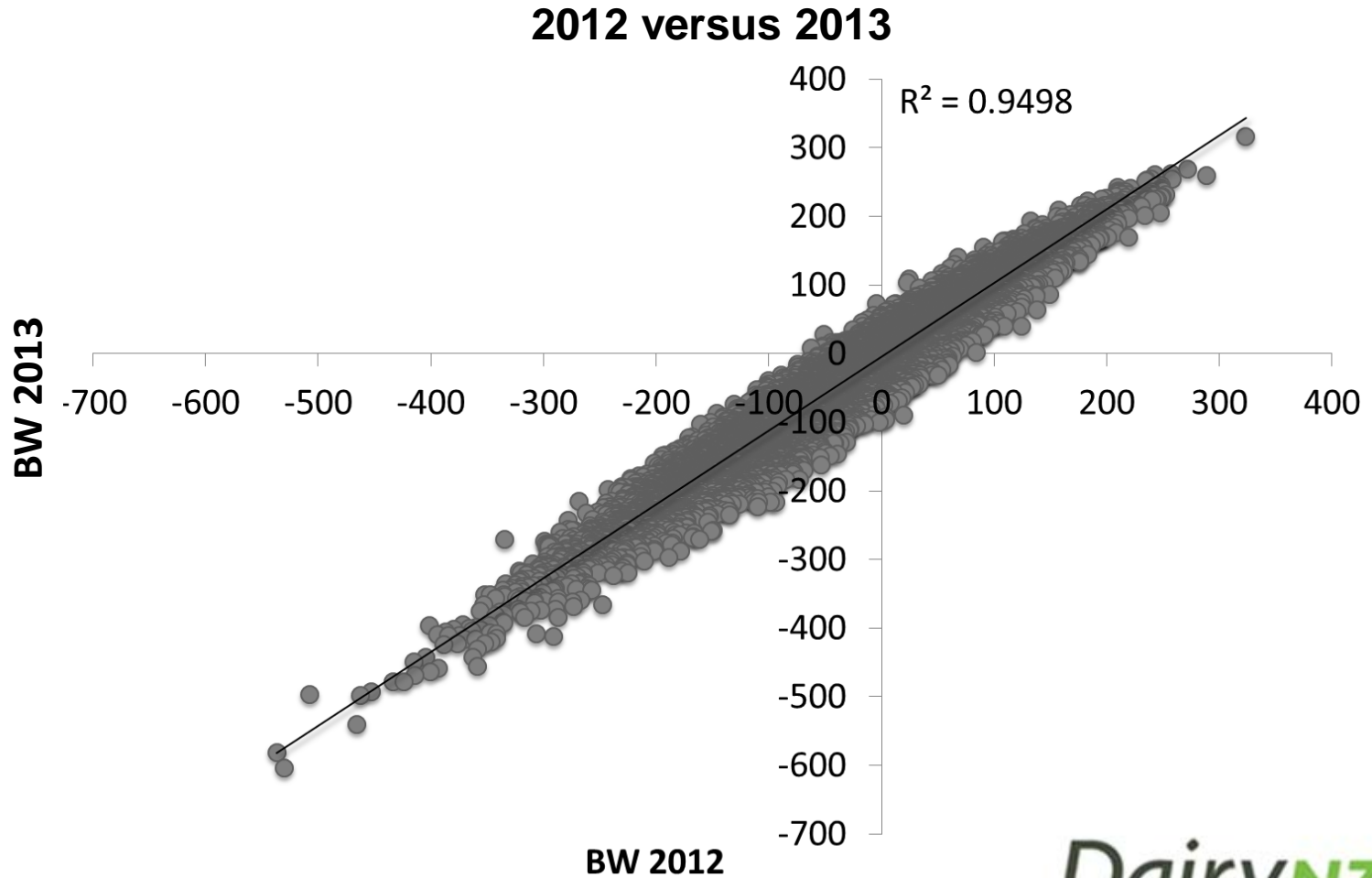
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Correlation



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Effect on breed averages



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- Jersey (+9.2) and KiwiCross (+5.0)
- Friesian (-12.4), Ayrshire (-10.6) and Other (-19.2)
 - largely due to the increased emphasis on fertility in BW

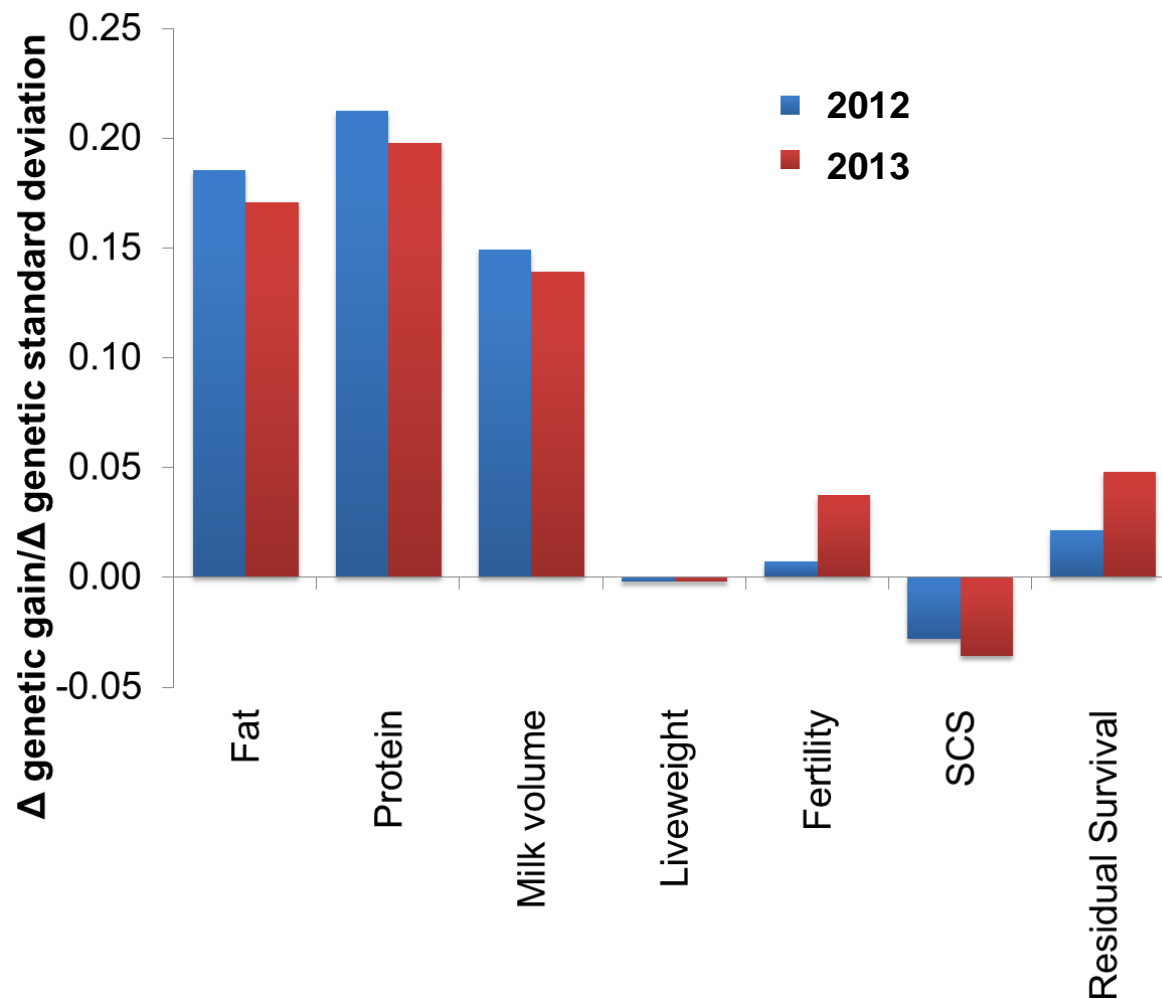
Top 100 bulls

Breed	2012	2013
Friesian	45	41
Jersey	23	28
Crossbred	32	31

Theoretical rates of genetic gain



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Summary



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- Timely review of NZ breeding objective
- Benefits from a broad, more independent team
- Meaningful change
- More fertile and functional cows
- In line with farmer preferences
- More work to do
 - Body condition score!