



Genetics of feeding behaviour in dairy bulls

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Measuring intake is hard

NZ dairy cattle ~75-85% pasture

DMI drives:

- growth
- feed efficiency
- methane

BUT:

- expensive
- hard at scale (especially grazing systems)



Can behaviour explain intake?

Feeding behaviour is:

- Easier to measure
- Biologically linked to intake



Hypothesis: behaviour traits may explain genetic differences in DMI

5 years, detailed feeding data

- 1,284 dairy bulls
- 42,789 daily records
- Individual intake measured (Hokofarm bins)
- Multiple breeds + pedigree

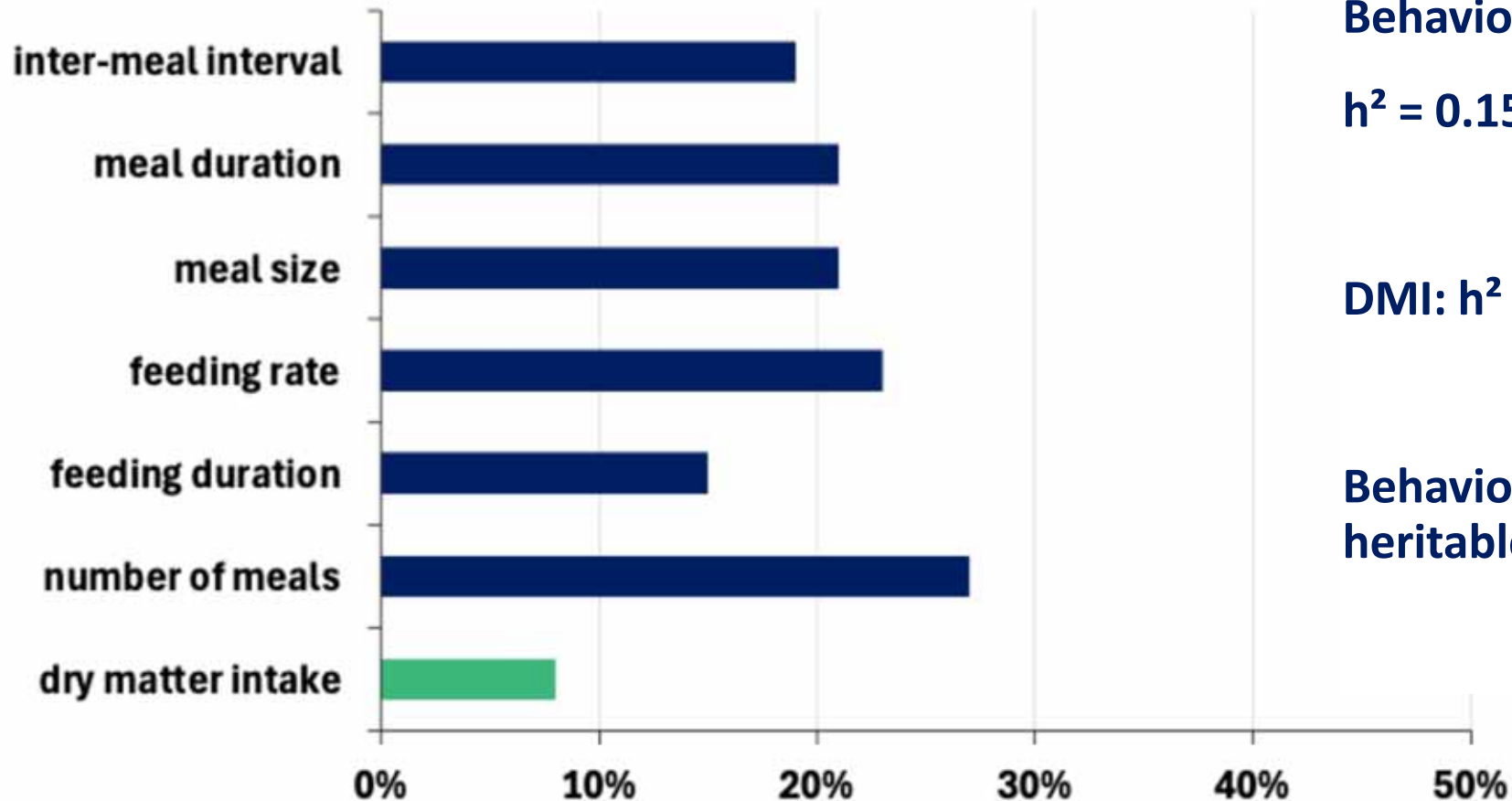


Not just intake but **how they eat**

- dry matter intake (kg/day)
- feeding duration (min/day)
- meal duration (min)
- number of meals
- feeding rate (kg/min)
- inter-meal interval (min)
- meal size (grams)



Are these traits heritable?



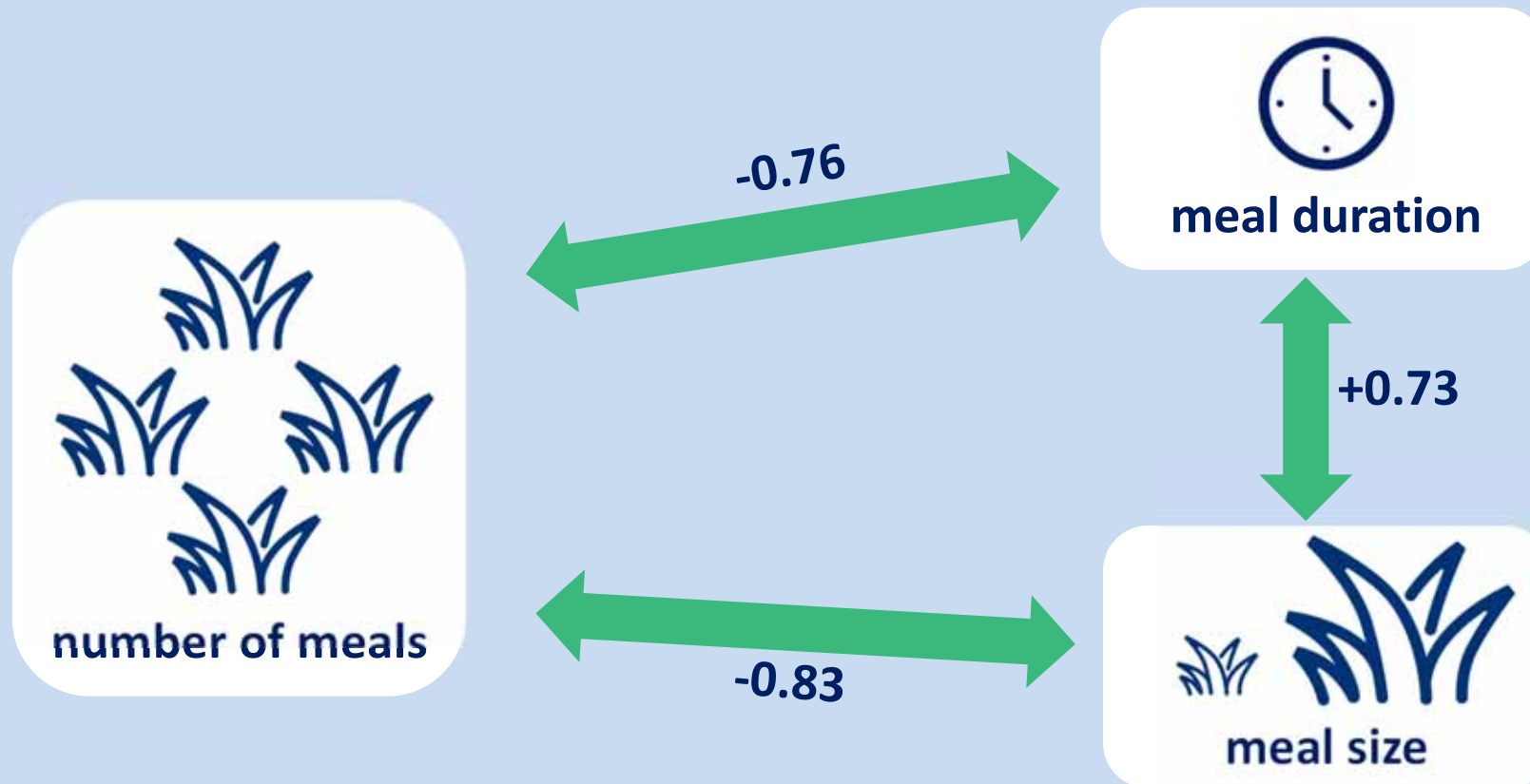
Behaviour traits:

$h^2 = 0.15-0.27$

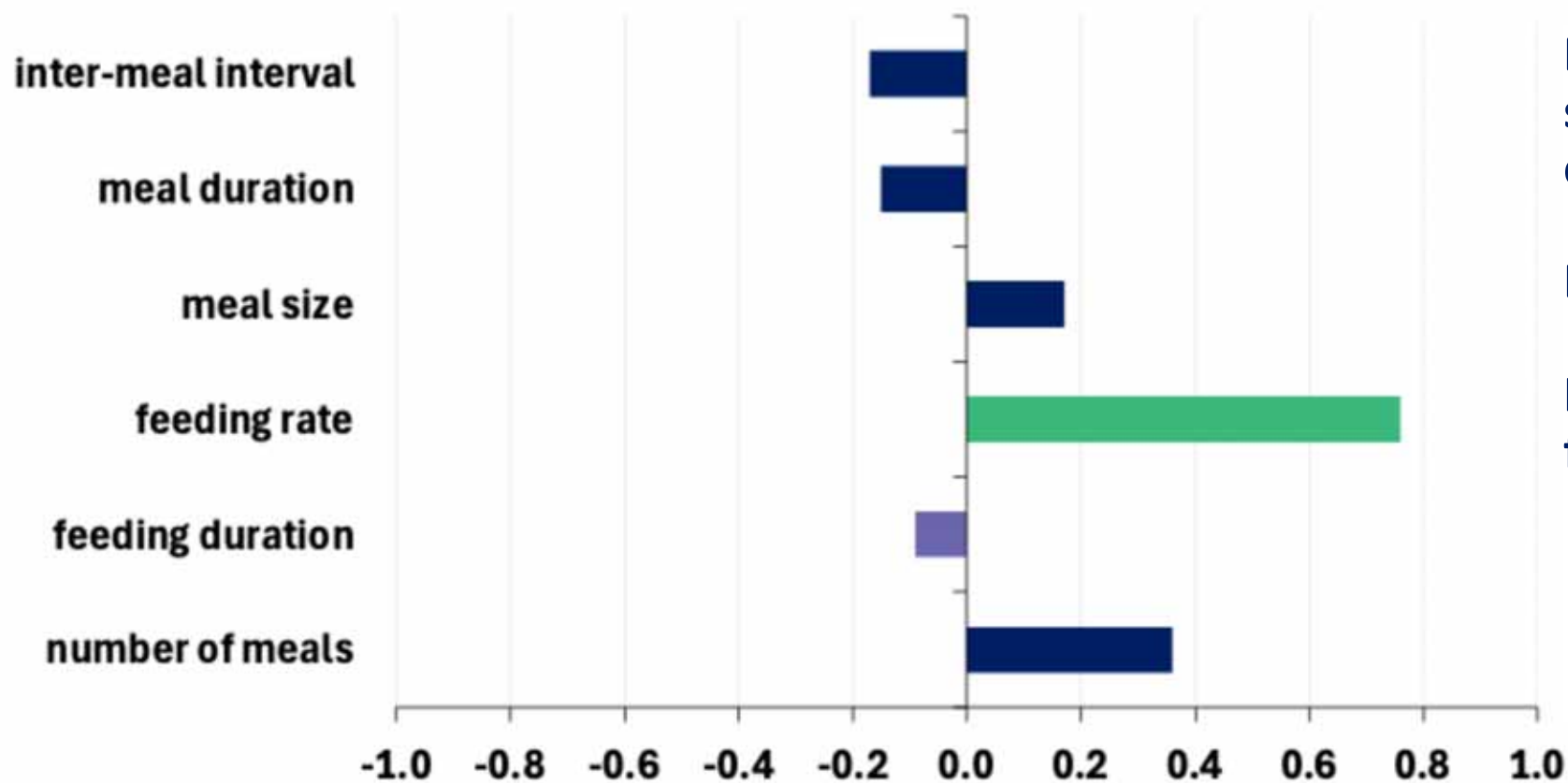
DMI: $h^2 = 0.08$

Behaviour traits = more heritable than intake

Animals have distinct eating strategies



It's not how long they eat – it's how fast



DMI vs feeding rate:
strong genetic
correlation (0.76)

DMI vs duration: ~0

High-intake bulls eat
faster - not longer

Implications for efficiency + methane

Feed intake hard to measure → limits breeding

Behaviour traits: potentially measurable via sensors

Feeding rate: promising proxy for intake

Links to:

- feed efficiency
- methane

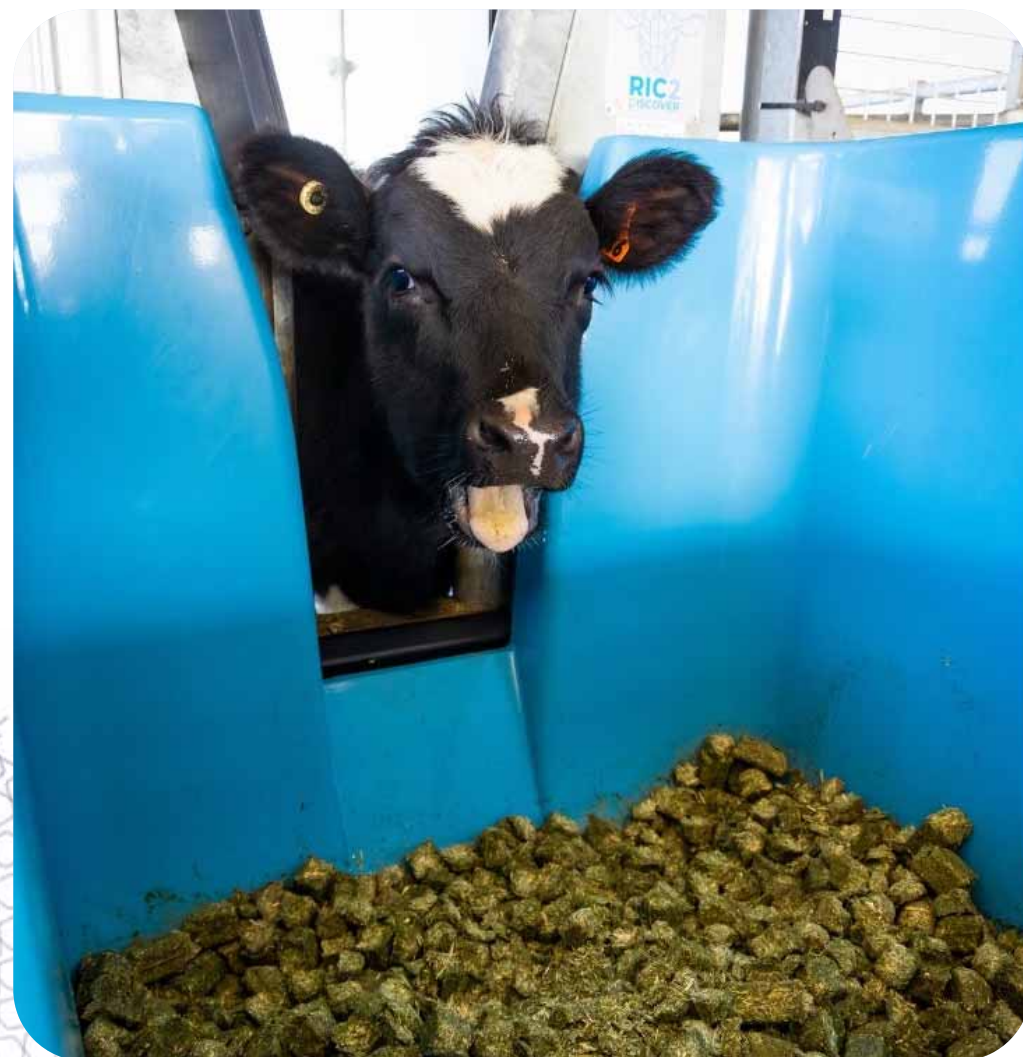


What did we learn?

Bulls genetically predisposed to higher intake: eat faster, not longer

Most behaviour traits: describe how animals eat

NOT how much they eat



Thank you

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