



NEW ZEALAND
AGRICULTURAL GREENHOUSE GAS
Research Centre

Measuring methane in young bulls – progress to date and next steps

Lorna McNaughton

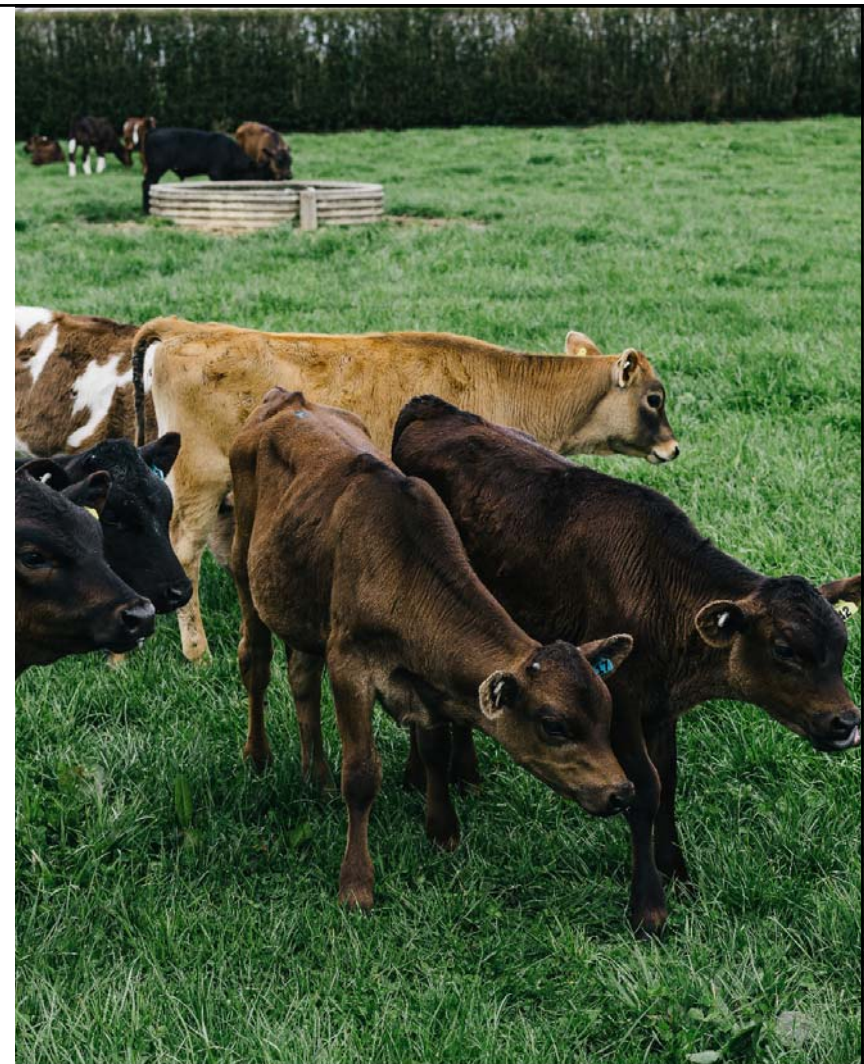


Peter Van Elzaker

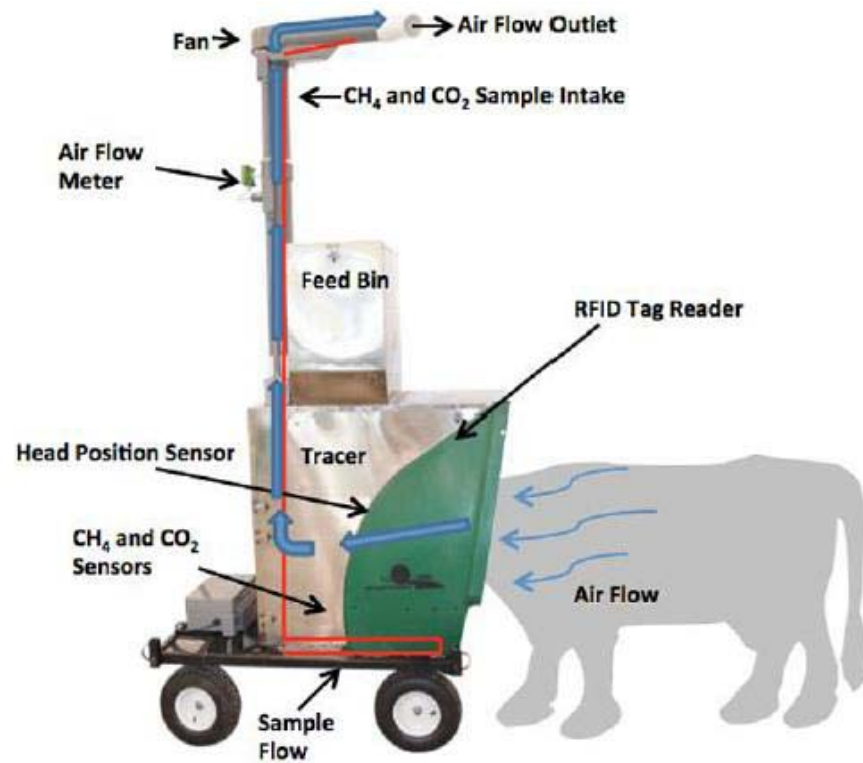


Timeline – elite future sires

Winter/Spring	Bulls born
Summer	Bulls arrive at LIC/CRV
Summer/Autumn	Methane testing – LIC
Winter/Spring	Methane testing – CRV
Spring	Used in progeny test herds



Greenfeed for methane measurement



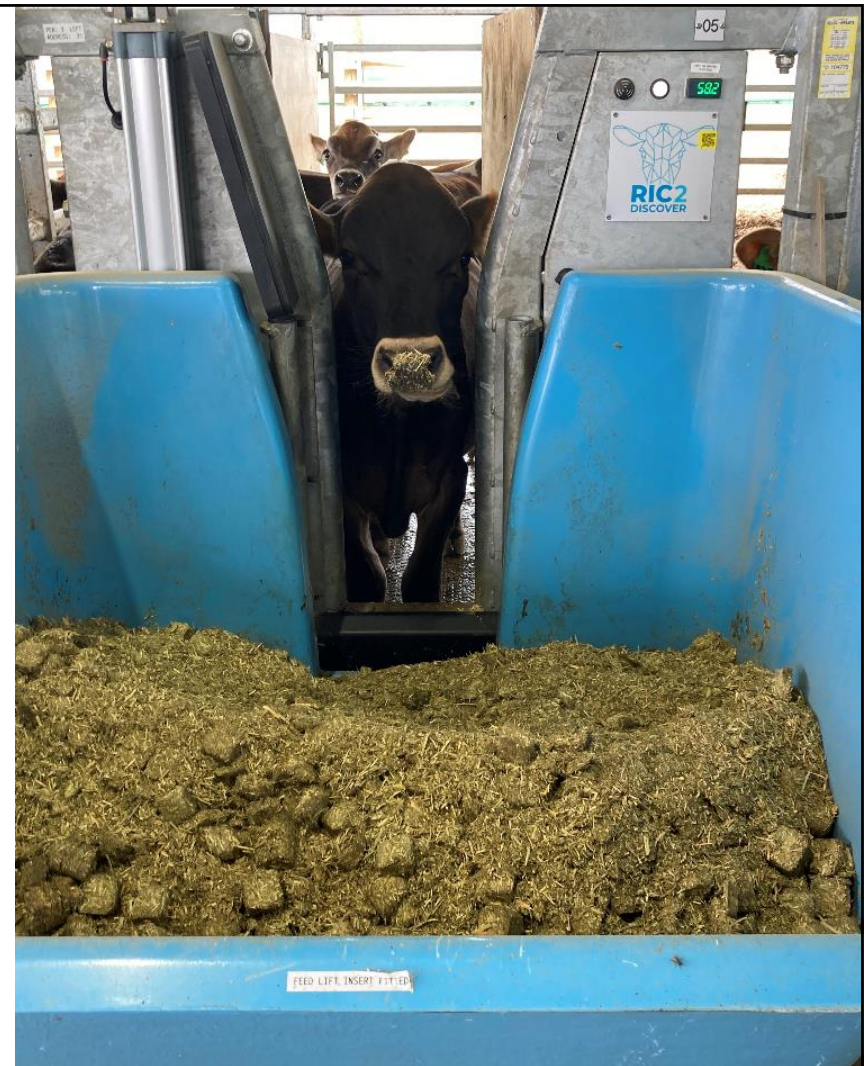


Feed intake measurement

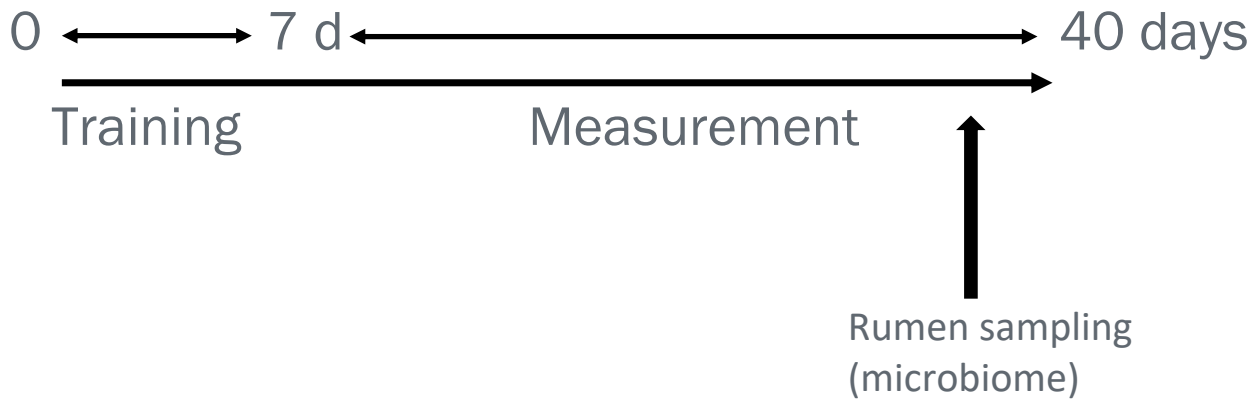
Forage based

Lucerne hay cubes

Pellets <10% of diet

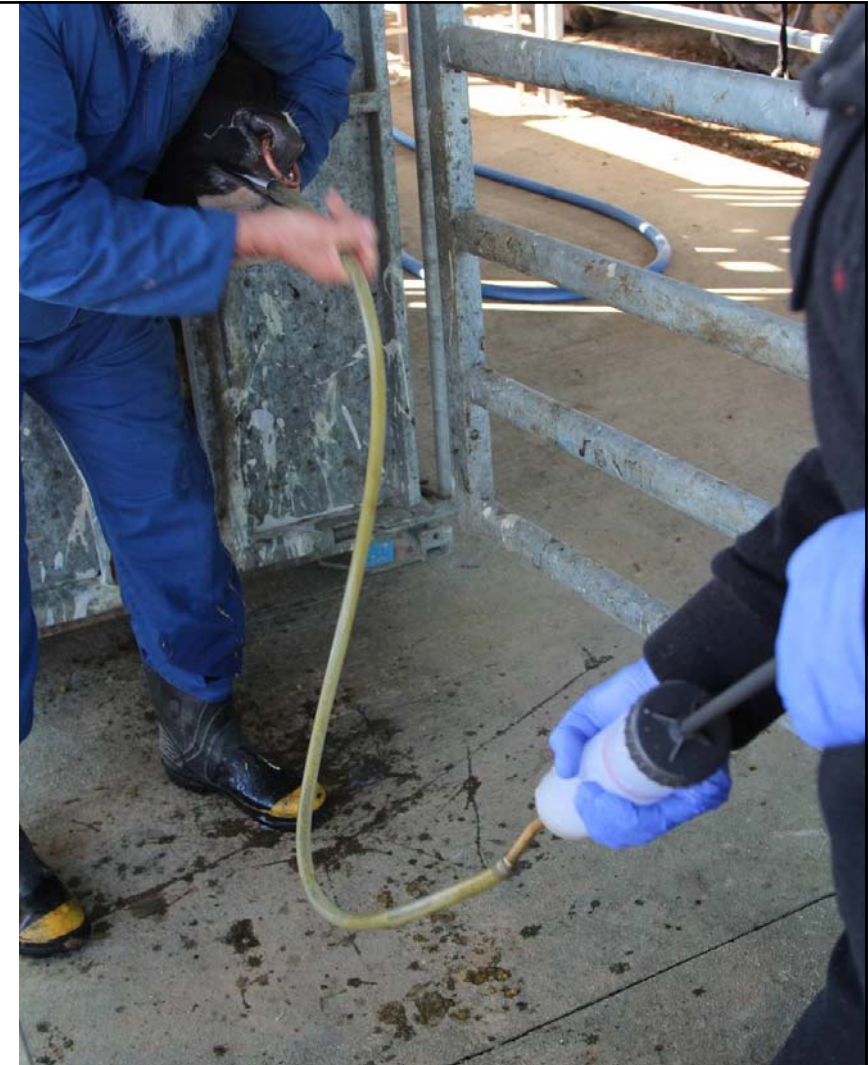


Trial Design



Bulls 6-15 months of age
3 x weekly liveweight measurements

Holstein-Friesian, Jersey and their crosses



Pen layout



Leading Partners in Science



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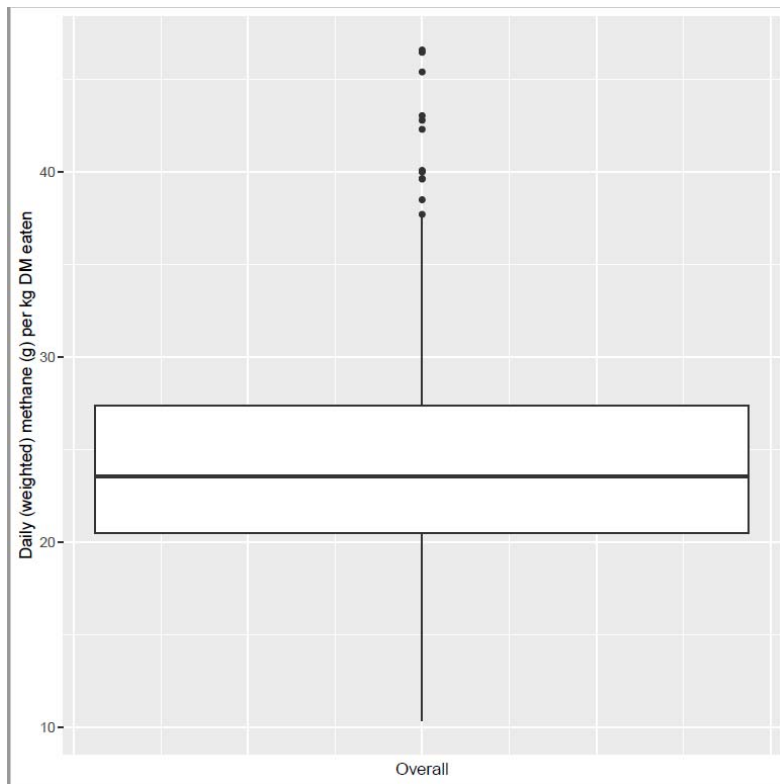
Measured to date

2021 – 260 bulls

2022 – 273 bulls

2023 – 225 to date, 100 to go

Results to date – more details in next presentation



Heritability
around 0.1

77% of genetic variation in methane remains after accounting for variation in feed intake

Daughter Validation

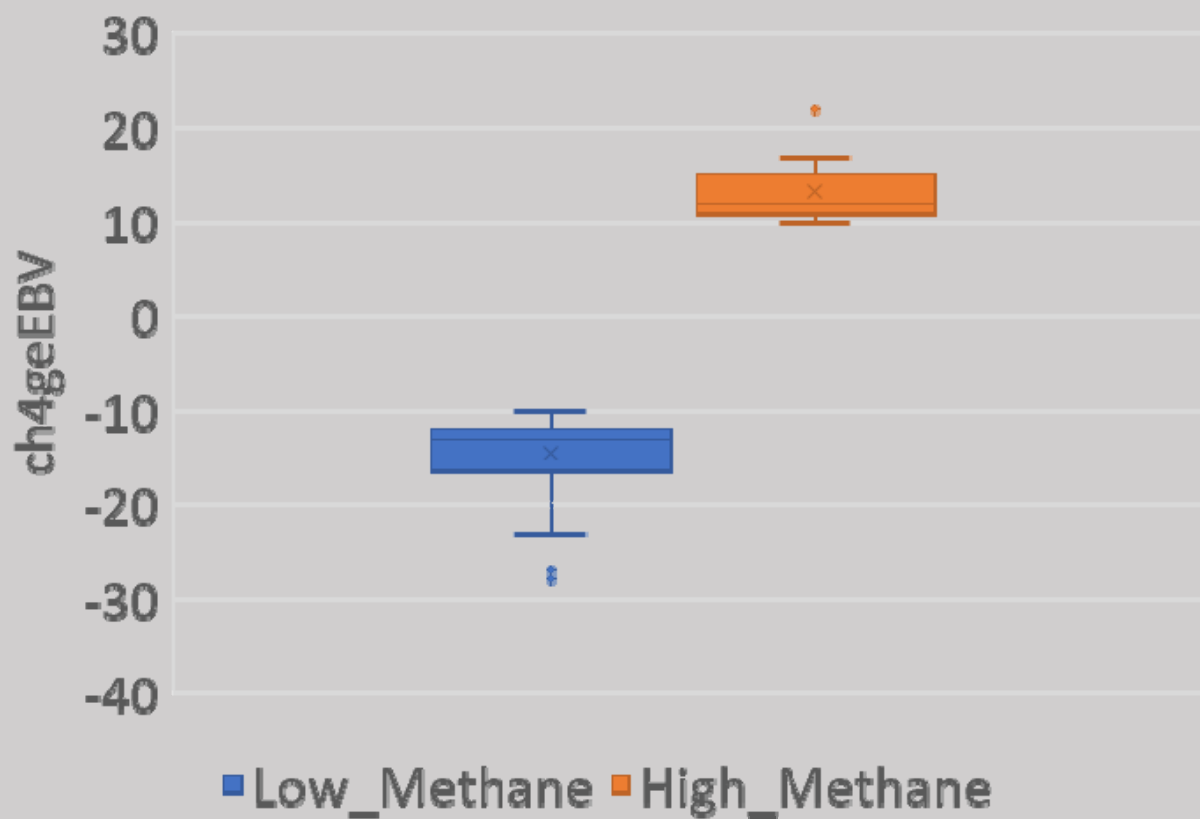
Daughters currently in utero

25 sires
+ve methane
200 daughters

25 sires
-ve methane
200 daughters

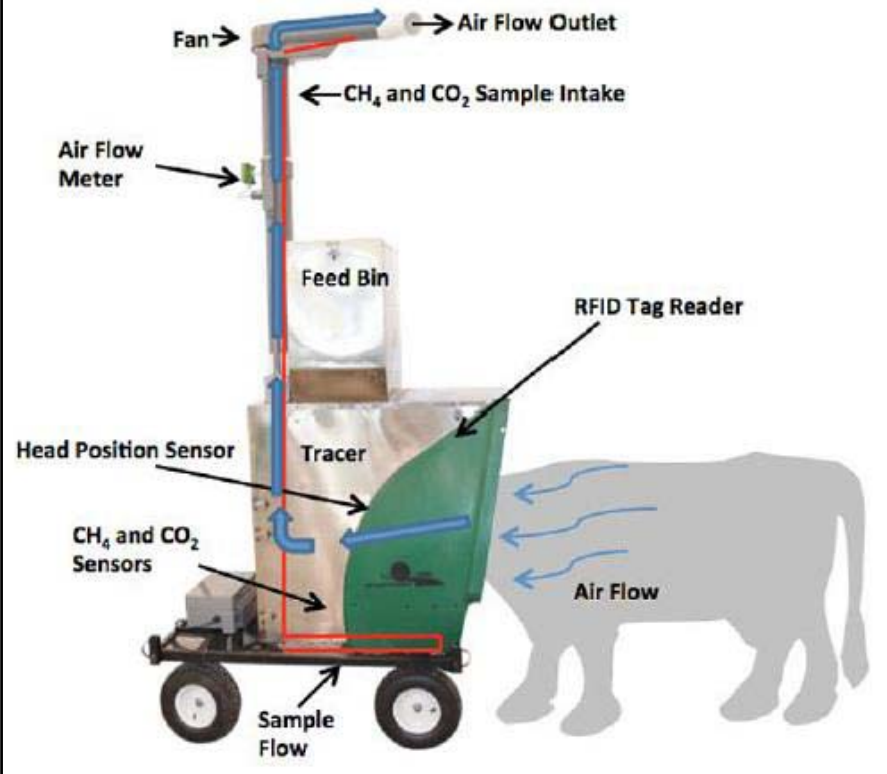


Selected Sires



Quality vs. Quantity of Data

2021 onwards
Bulls- methane and feed
intake



Future
Measure lactating cows

CowPac?
Sniffers at milking?
Other options?



Thank You!



Science is a team game, not an individual sport



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