

Searching for low methane dairy cows

P.J. Moate, L.C. Marett, J.B. Garner, J.L. Jacobs, M.C. Hannah,
J.E. Pryce, W.J. Wales, C. Richardson* and S.R.O. Williams

Introduction

- Why low methane?
- Genetic solution
- Measurement by chambers
- Combining data
- The aim of this research was to quantify methane emissions
 - large number of cows
 - fed the same diet
 - same stage of lactation
 - measured by a common accurate method

Methods



120



120



120



40



80

480

Spring
3 to 6 years of age
40 to 100 DIM
25.5 ± 4.1 kg ECM/day









Restrictor: Orifice plate

BG samples: Individual

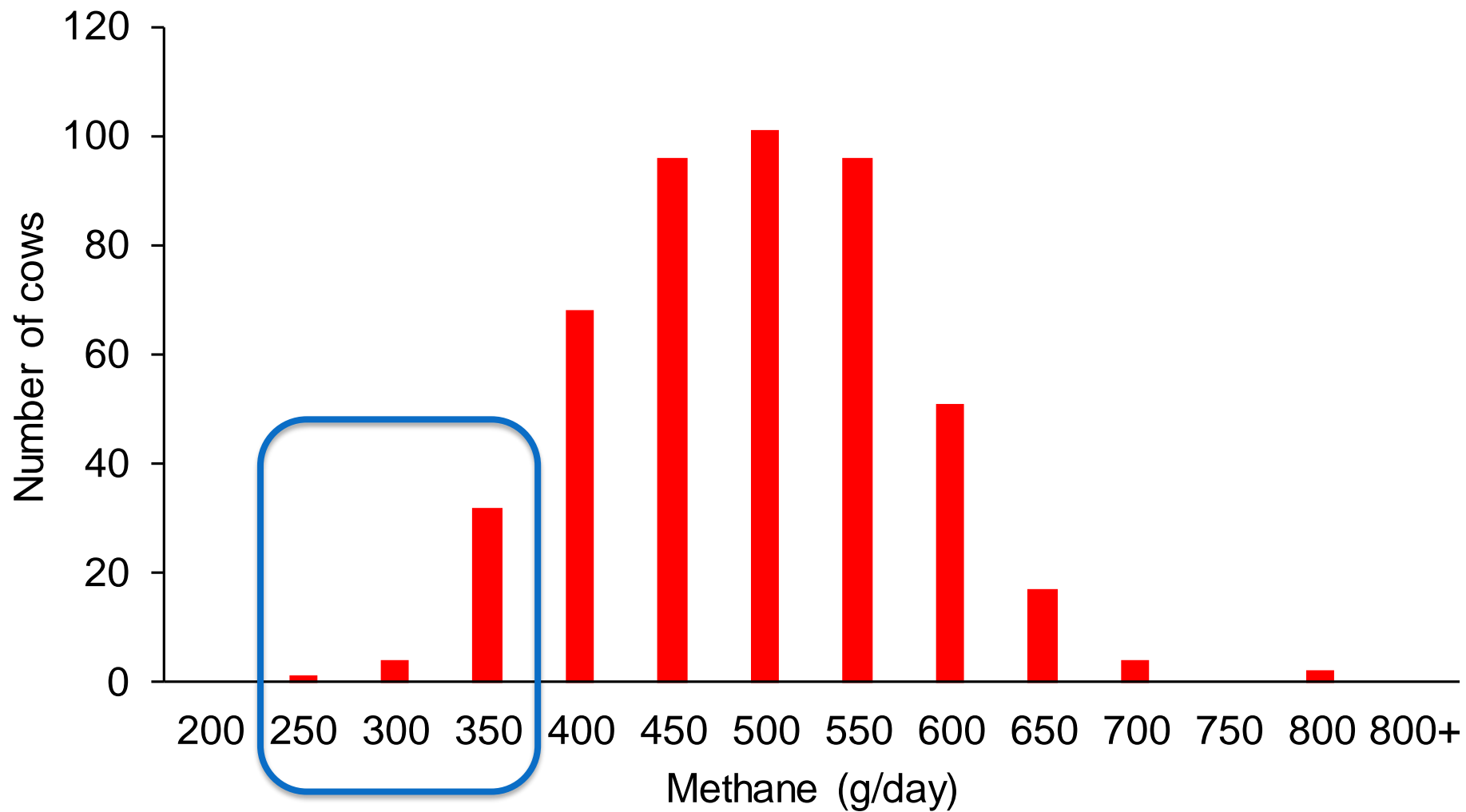
SF₆ rate: similar in cohort

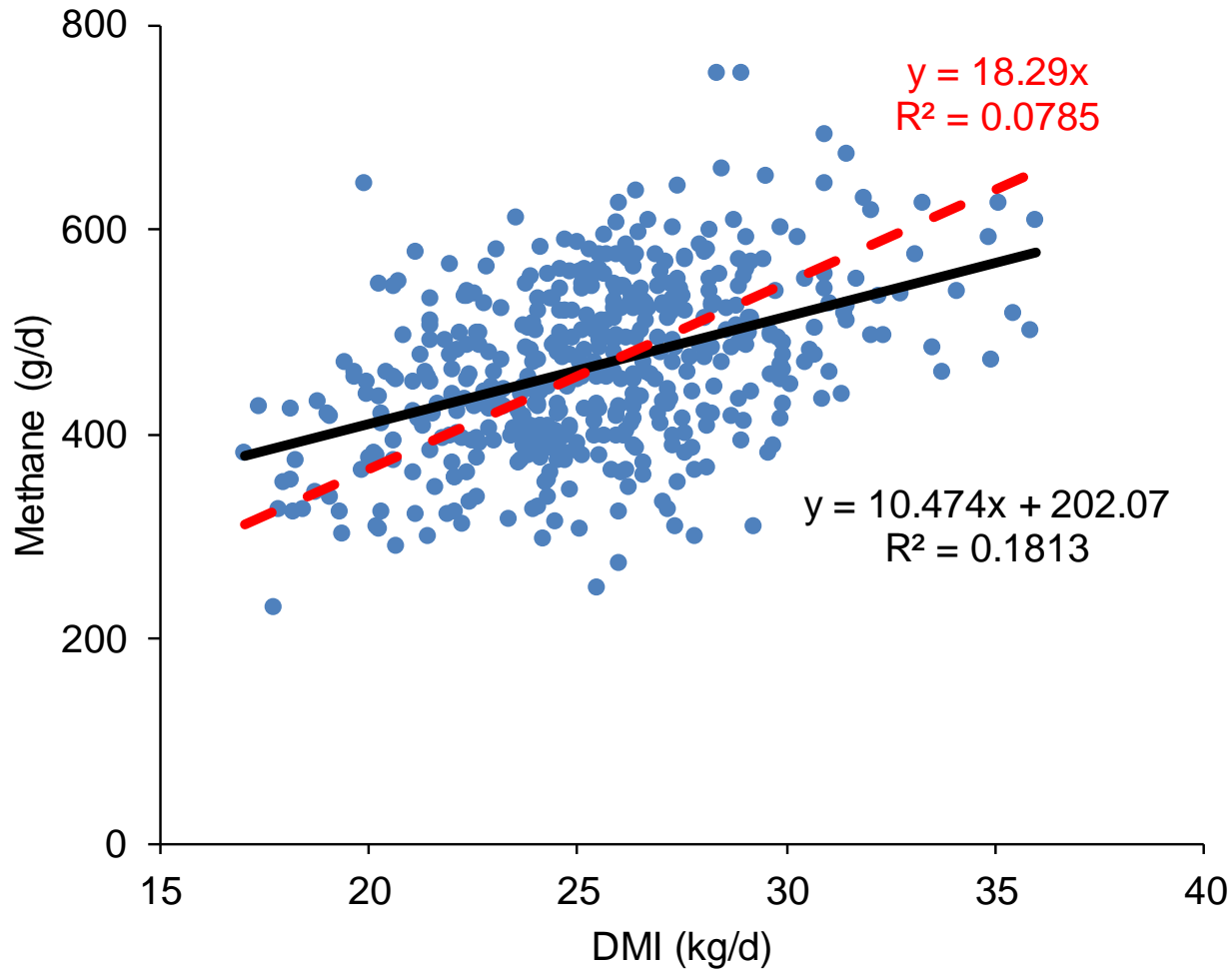
Concordant with chambers

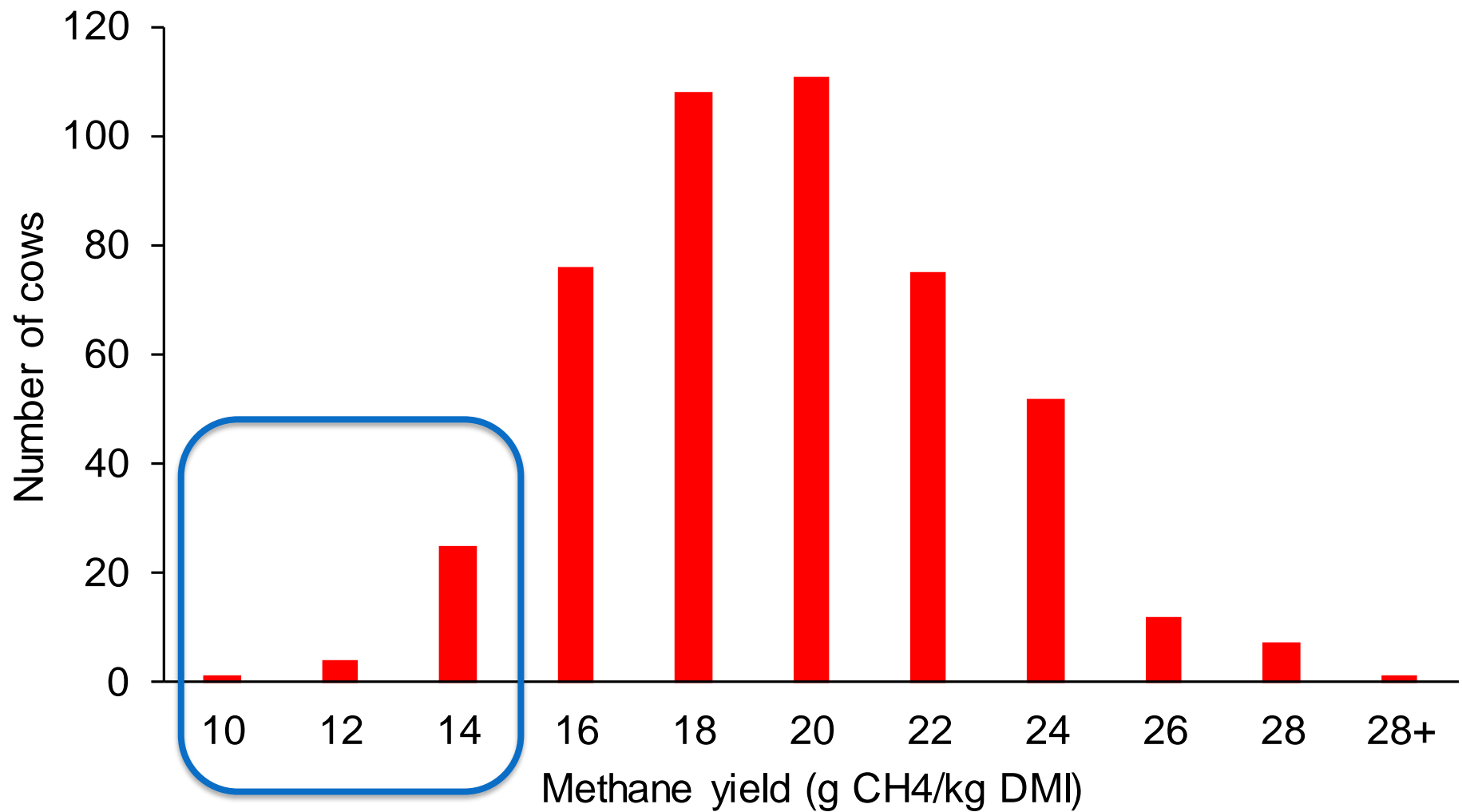


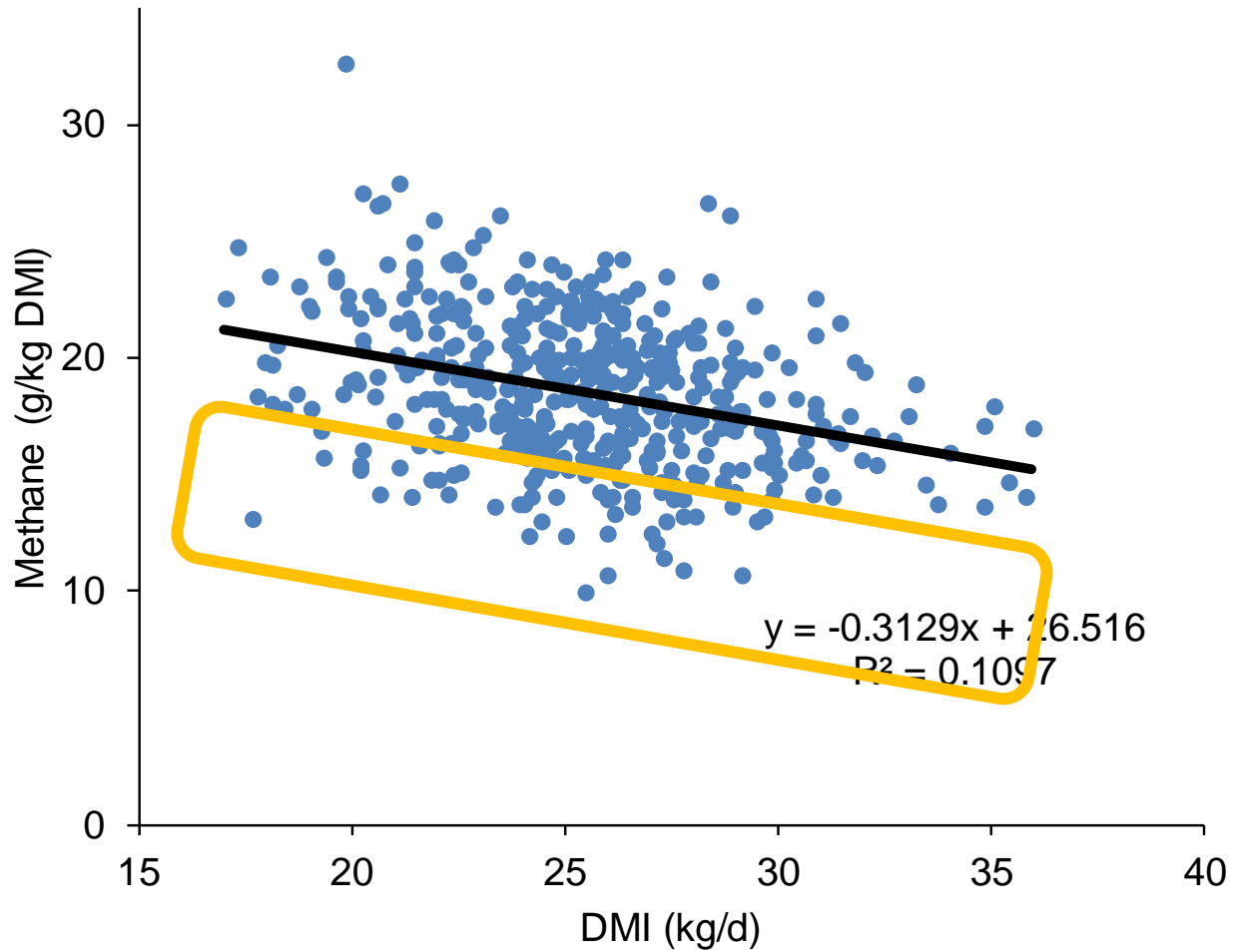
Results - mean \pm standard deviation

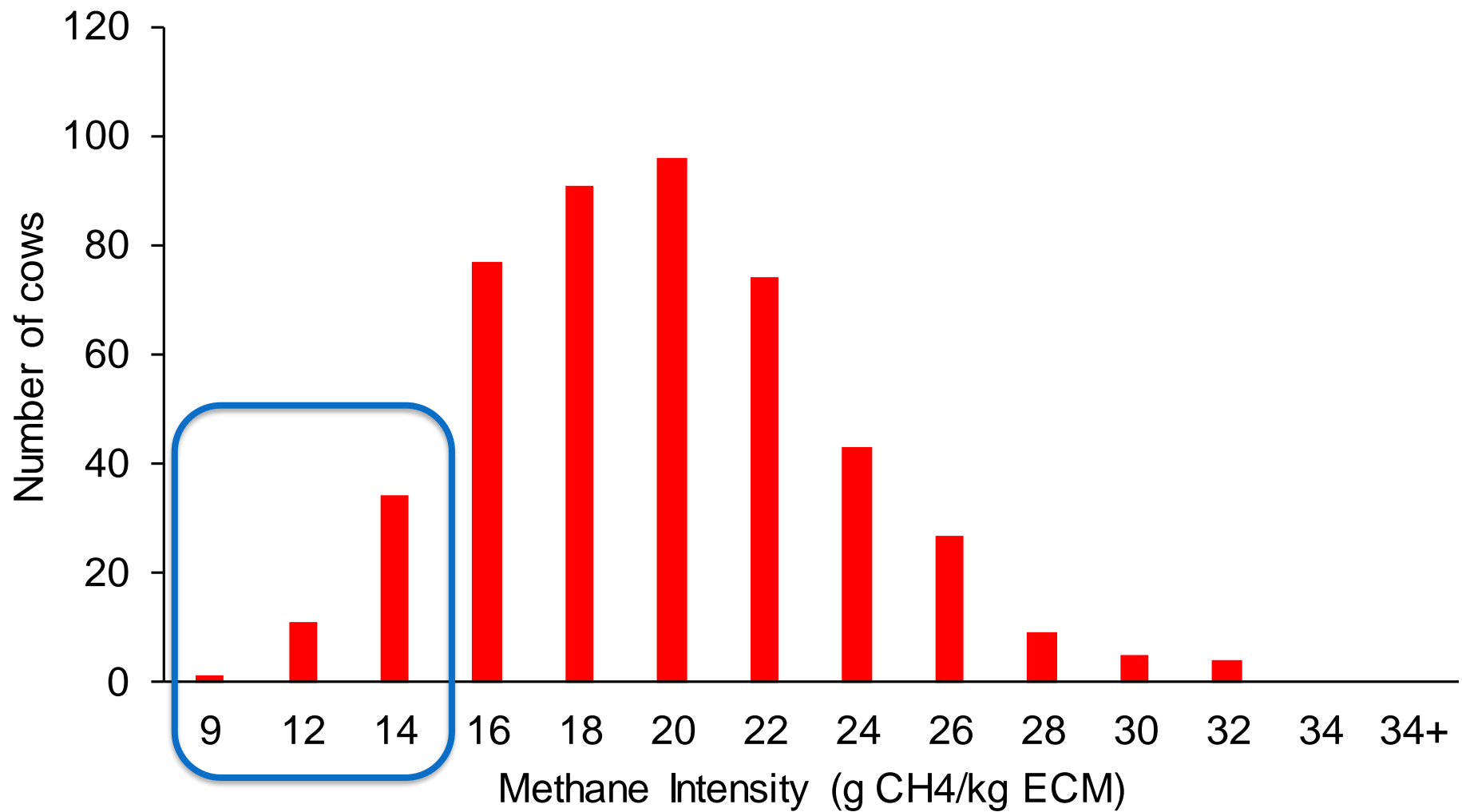
- Dry matter intake 25.4 \pm 3.4 kg/day
- Energy corrected milk 25.5 \pm 4.1 kg/day
- Methane emissions 468 \pm 83.1 g/day
- Methane yield 18.6 \pm 3.2 g/kg DMI
- Methane intensity 18.7 \pm 3.9 g/kg ECM

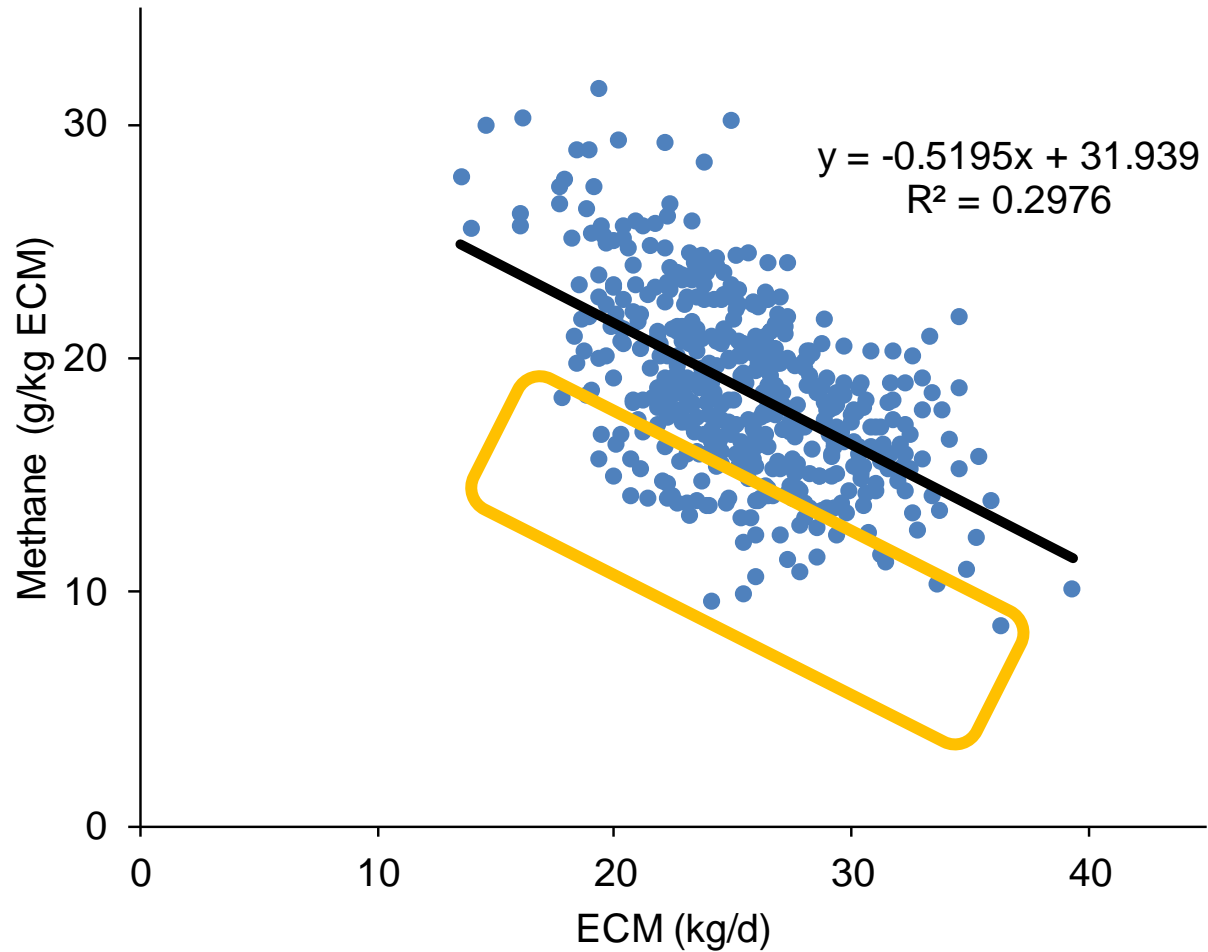












Conclusions

- The ranges in values for methane yield (9.9 to 32.6 g/kg DMI) and methane intensity (8.6 to 31.5 g/kg ECM) indicate considerable opportunity exists for selecting low methane animals
- The metric for selecting low-methane animals needs to be carefully thought out