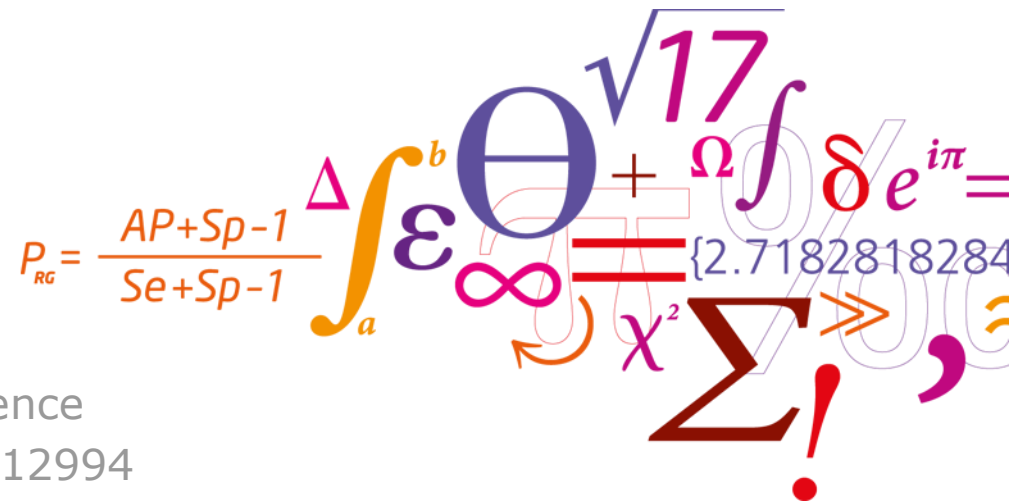


What determines antibiotic treatment in relation to udder health in Danish dairy cattle herds?

CPH Cattle seminar, 15. November 2017

Maya Gussmann, Kaare Græsbøll, Søren Saxmose Nielsen, Nils Toft, Michael Farre, Carsten Kirkeby, Tariq Halasa



Article in Press, Journal of Dairy Science
<http://dx.doi.org/10.3168/jds.2017-12994>

Objectives

- Identify differences between farms regarding treatment
- Identify determinants for differences

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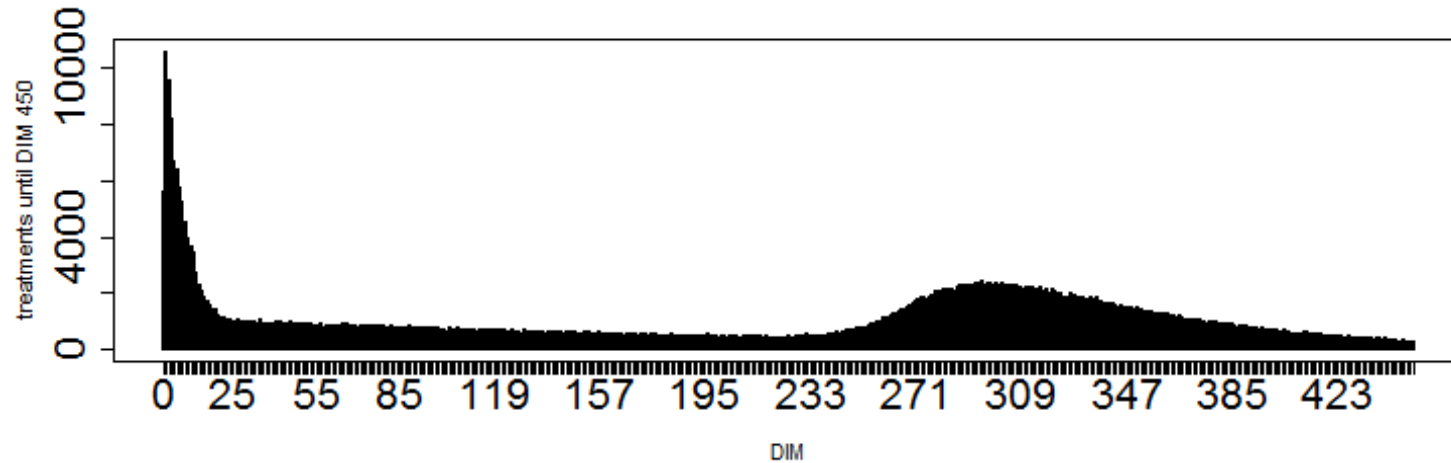
- Identify differences between farms regarding treatment
- Identify determinants for differences
- Use this information e.g. when developing herd-specific health management programs

Data

Retrieved from the Danish Cattle Database:

- 1500 cattle herds with
 - Milk yield recordings
 - At least 90% Danish Holstein cows
- Milk yield
- SCC
- PCR
- Clinical registrations
- Treatments
- Animal movements, reproduction and calving, drying-off

Treatments



Data

Registered dry cow treatments on 1169 farms:

- 504 farms with registered treatments, PCR and clinical registrations

Data

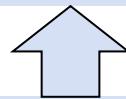
- Dry cow treatment (yes/no)

- Last SCC
- Average milkyield
- Parity
- Treatment during lactation (yes/no)
- Last lactation (yes/no)

- Clinical registrations (yes/no)
- PCR (no or negative/positive – cut-off 37)

Data

• Dry cow treatment (yes/no)

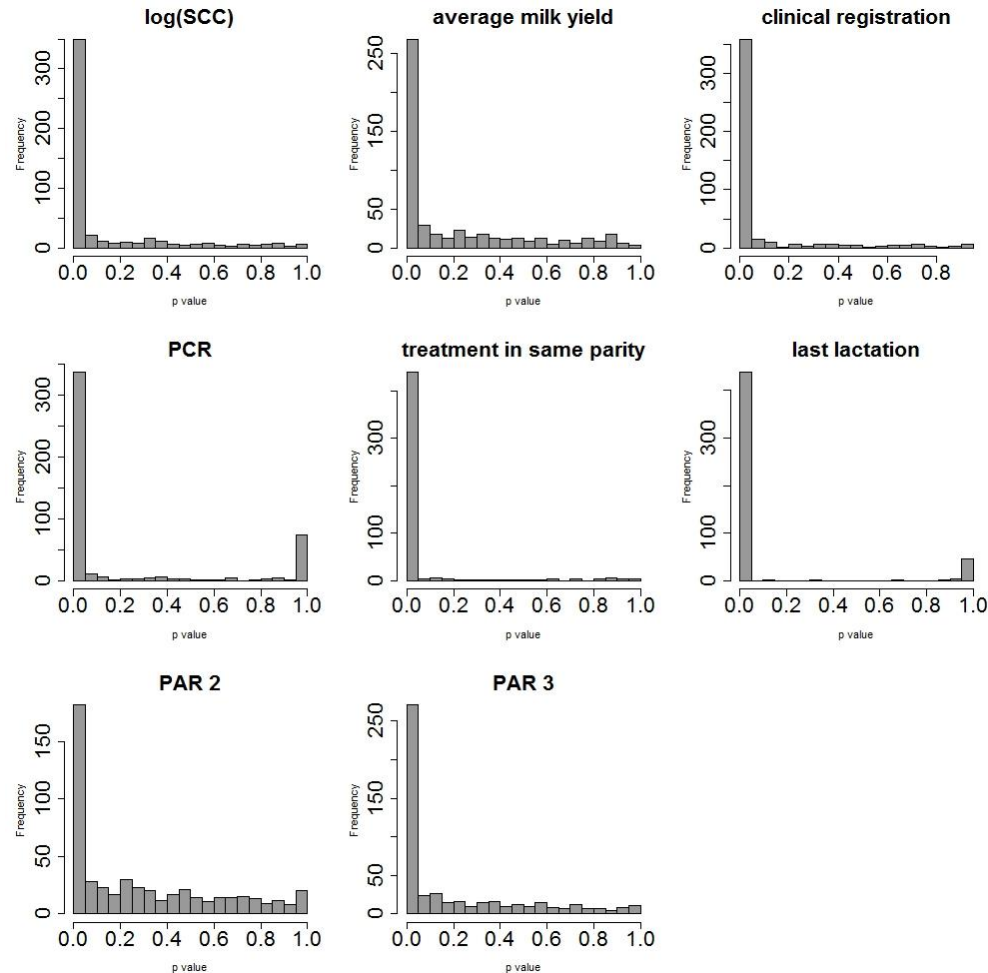


Logistic regression
for each farm

- Last SCC
- Average milkyield
- Parity
- Treatment during lactation (yes/no)
- Last lactation (yes/no)
- Clinical registrations (yes/no)
- PCR (no or negative/positive – cut-off 37)

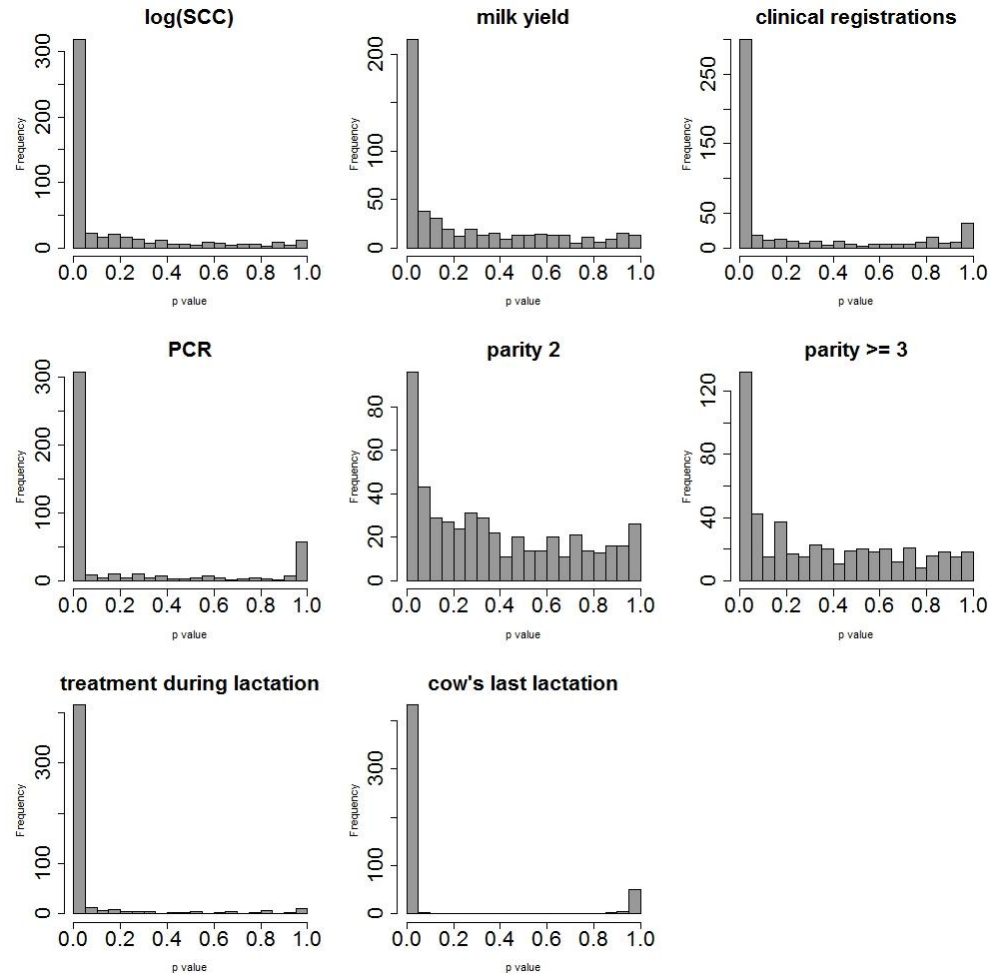
Univariate logistic regression

farms with clinical registrations and PCR



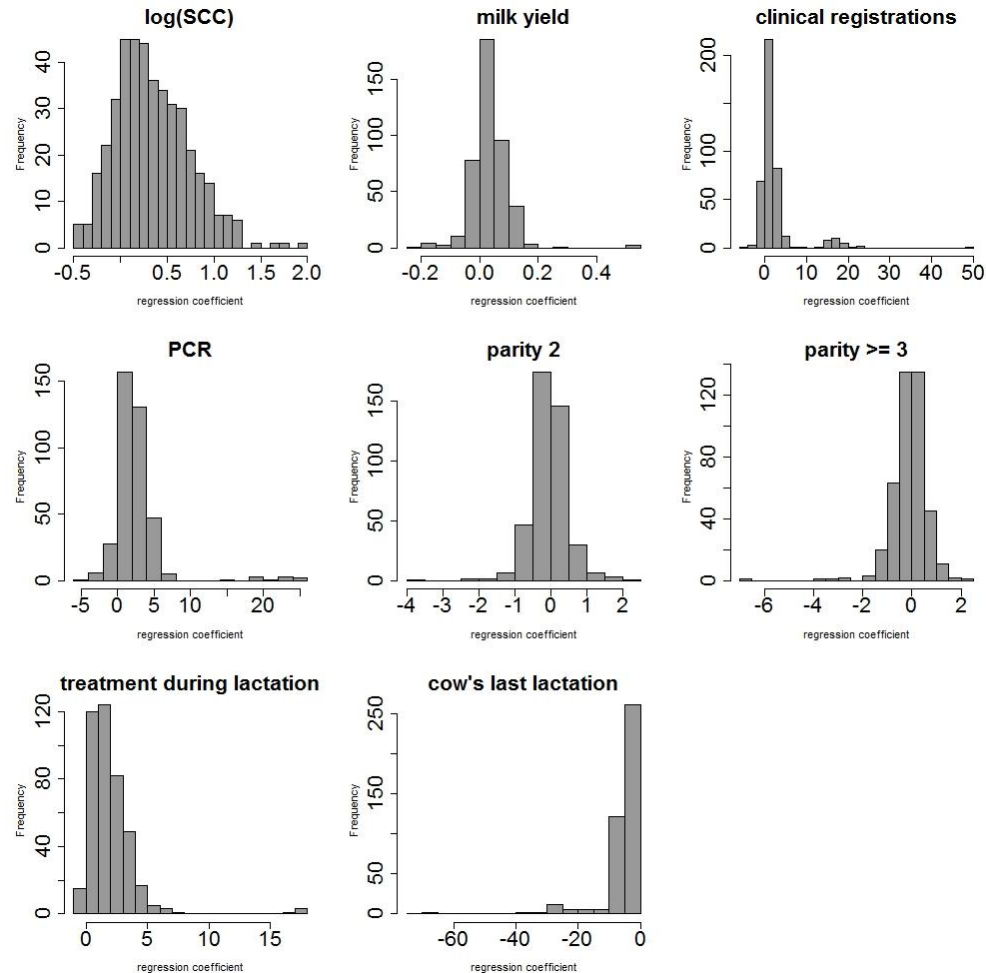
Multivariable logistic regression

farms with clinical registrations and PCR



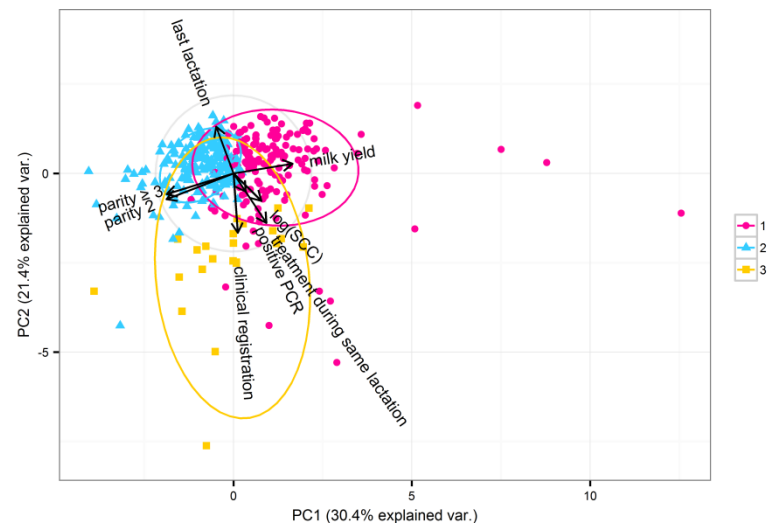
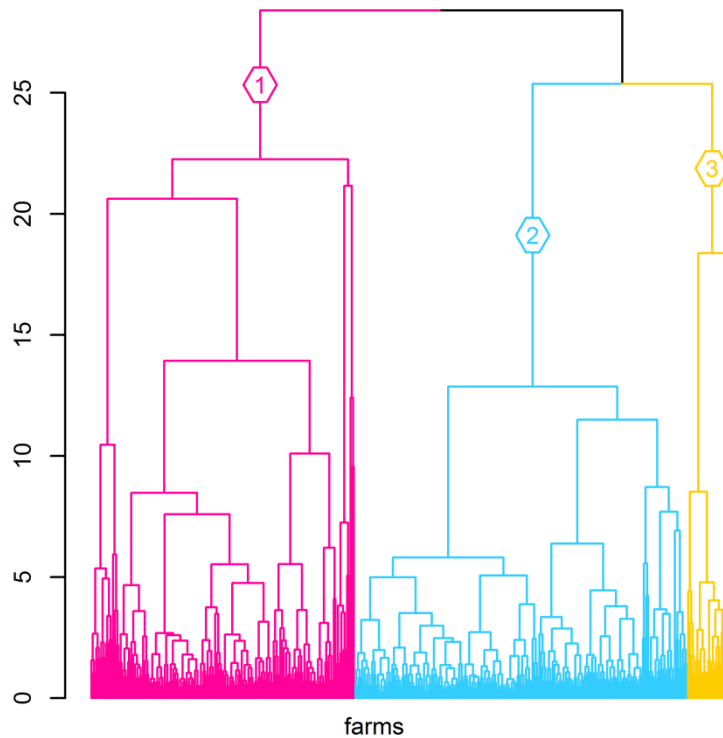
Multivariable logistic regression

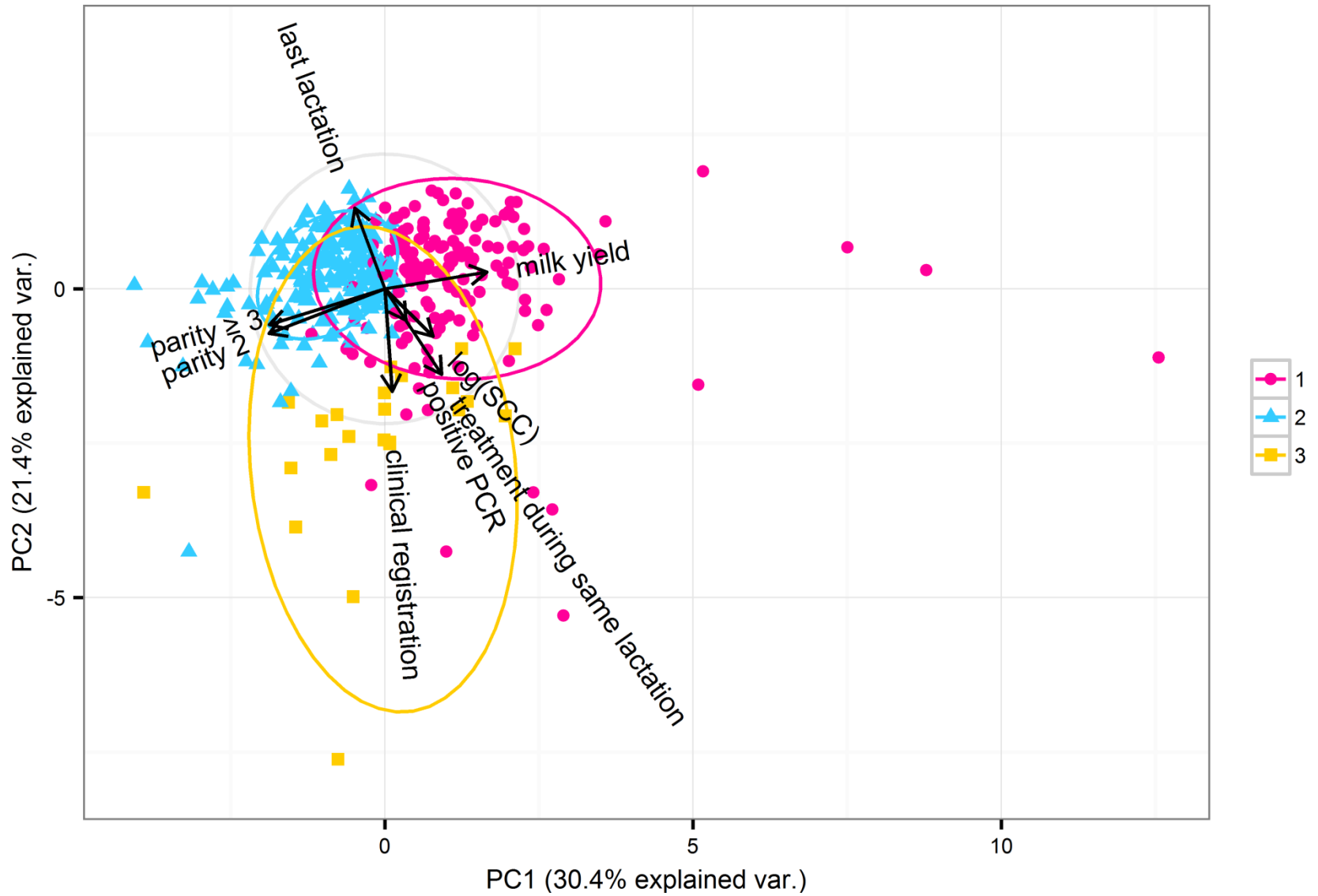
farms with clinical registrations and PCR



PCA

Example for hierarchical clustering on PCs, cut at 3 clusters





Conclusion

- There are three groups of farmers concerning treatment:
 - Parity and culling
 - Production
 - Health indicators

- Use this information to examine/propose control measures taking specific farmer preference into account.

Questions?

Thank you for your attention.

