



A Bayesian herd-level diagnostic test evaluation - *Mycoplasma bovis*

Nielsen, Per Kantsø; Petersen, Mette Bisgaard; Nielsen, Liza Rosenbaum; Hisham Beshara Halasa, Tariq; Toft, Nils

Publication date:
2015

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Nielsen, P. K., Petersen, M. B., Nielsen, L. R., Hisham Beshara Halasa, T., & Toft, N. (2015). *A Bayesian herd-level diagnostic test evaluation - Mycoplasma bovis*. Poster session presented at Annual Meeting of the Society of Veterinary Epidemiology and Preventive medicine, Ghent, Belgium.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

A Bayesian herd-level diagnostic test evaluation – *Mycoplasma bovis*

Per Kantsø Nielsen¹, Mette Bisgaard Petersen², Liza Rosenbaum Nielsen², Tariq Halasa¹, Nils Toft¹

1) Section for Epidemiology, National Veterinary Institute, Technical University of Denmark

2) Department of Large Animal Sciences, Faculty of Health and Medical Sciences, University of Copenhagen

OBJECTIVE

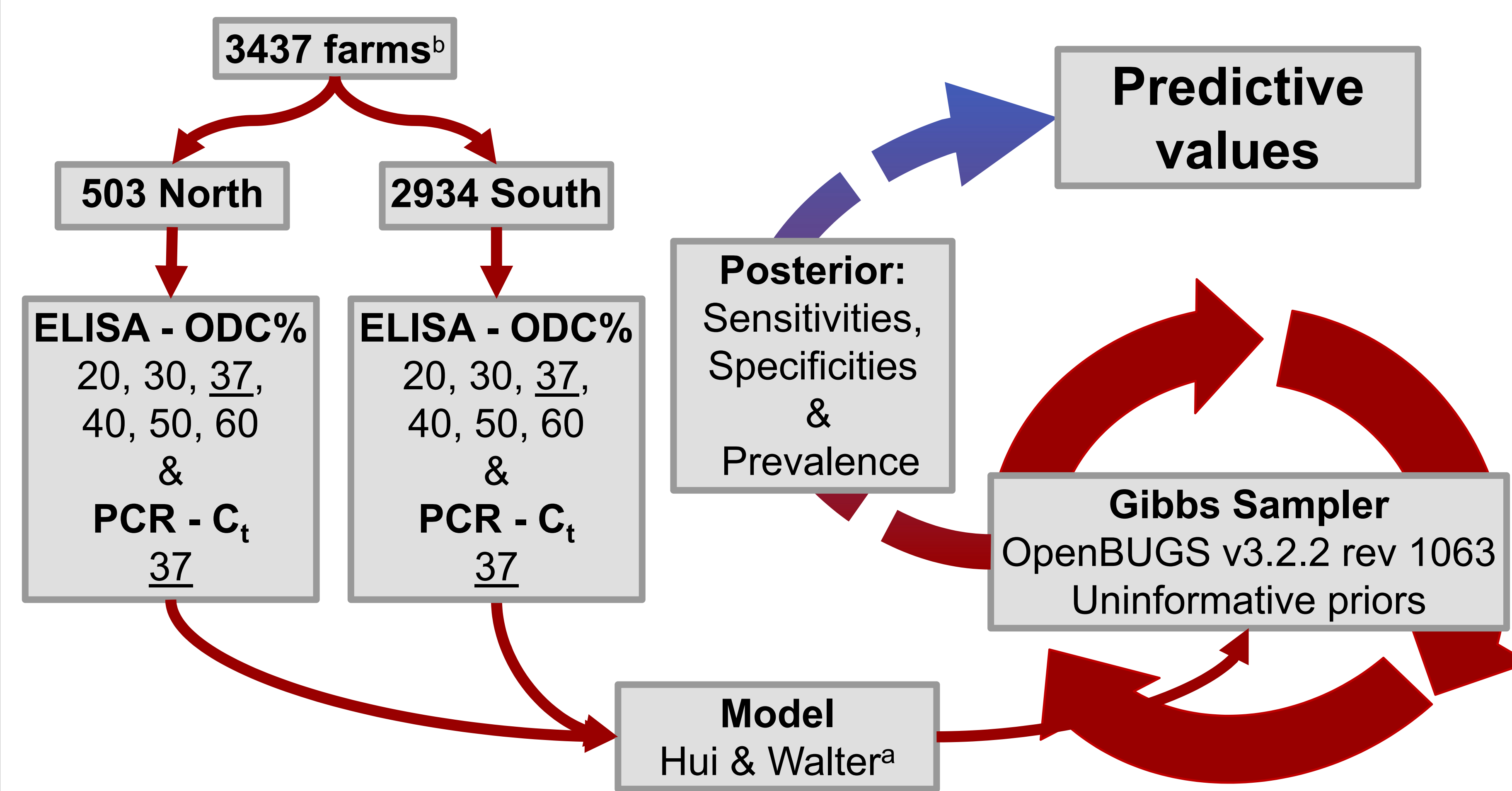
To evaluate the performance, at herd level, of the BIO K 302 *Mycoplasma bovis* ELISA against the PathoProof Mastitis-3 PCR.

M. Bovis **causes disease in cattle** of all ages. Recently the prevalence among Danish dairy cattle has increased. A **diagnostic test evaluation** is required to establish a control program.

CONCLUSION

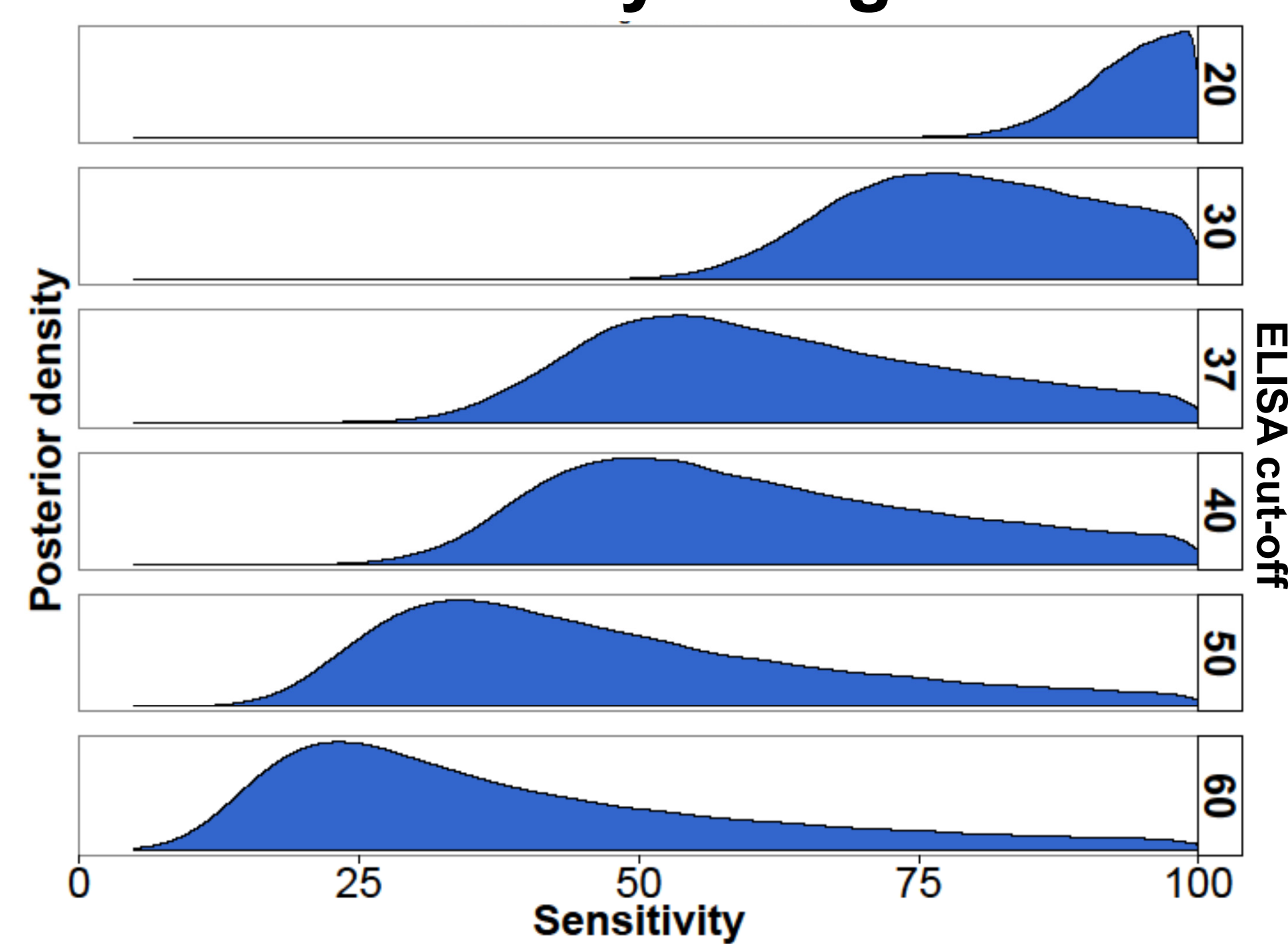
The BIO K 302 ELISA **positive predictive value improves**, at herd level, if the **cut-off is increased**.

BAYESIAN LATENT CLASS ANALYSIS

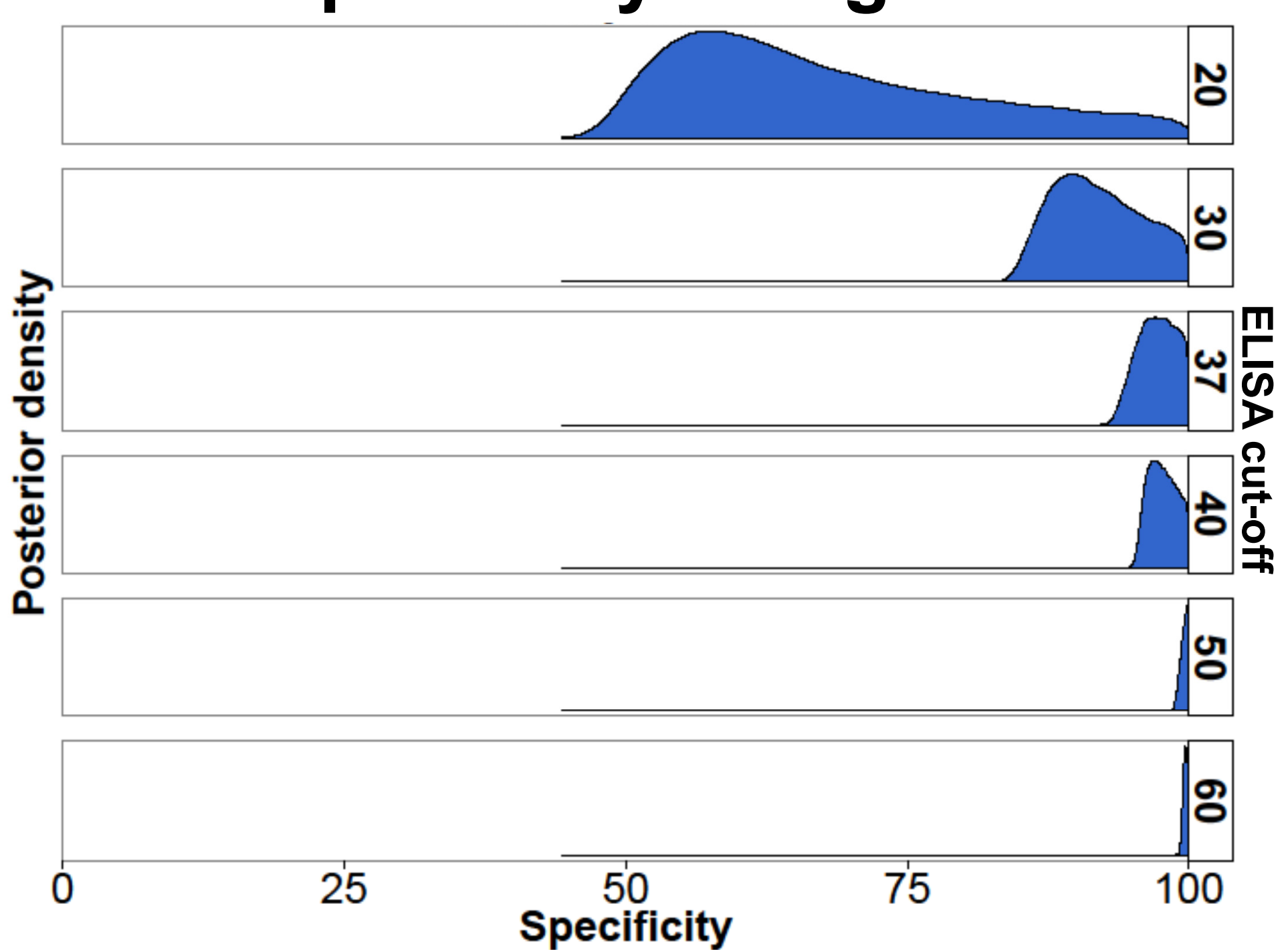


RESULTS

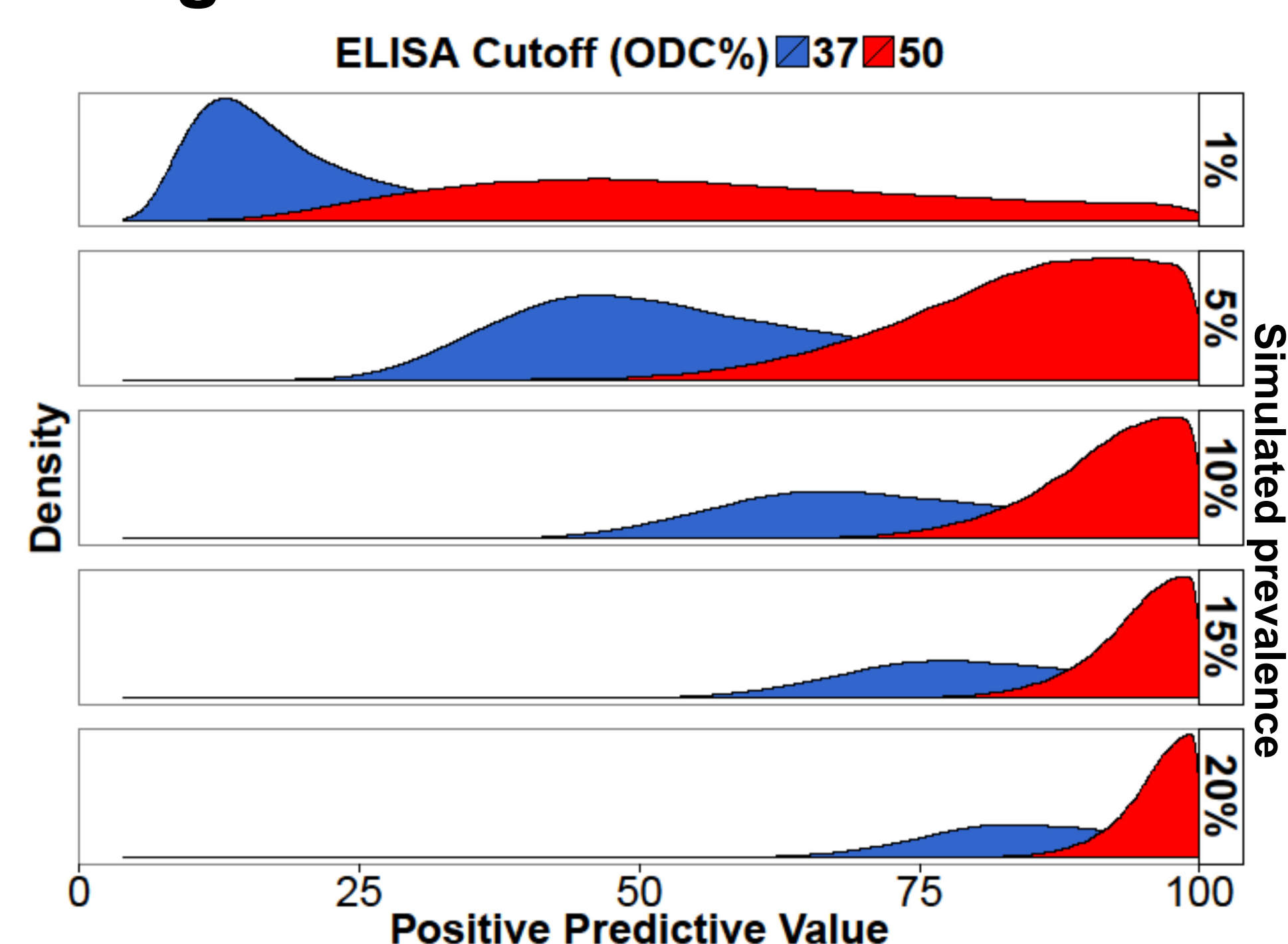
Worse sensitivity at higher cut-off



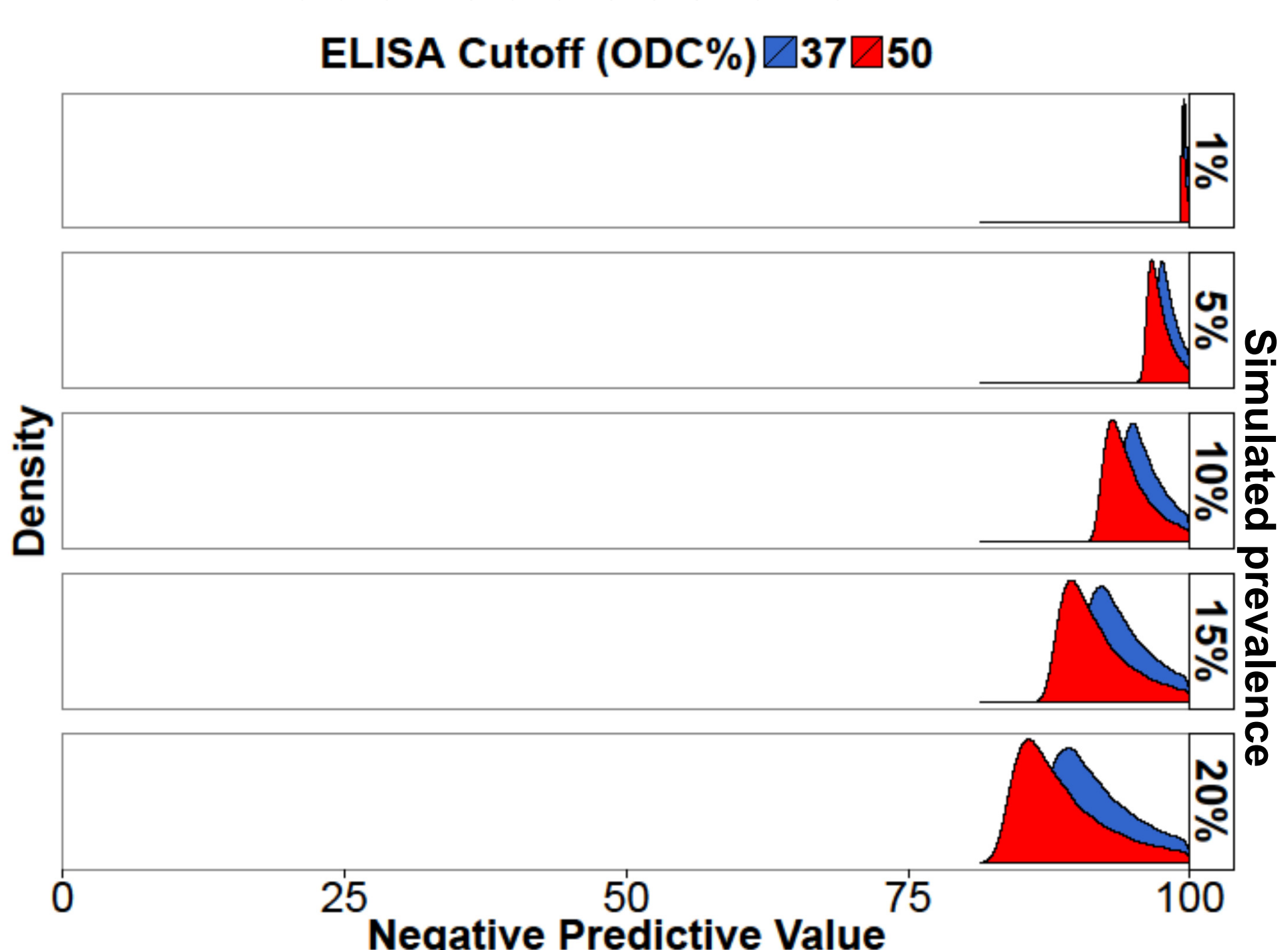
Better specificity at higher cut-off



A high cut-off increases the PPV...



... but reduces the NPV.



a) Hui, S. L., & Walter, S. D. (1980). Estimating the error rates of diagnostic tests. *Biometrics*, 36(1), 167–71
b) Data were supplied by the Knowledge Centre for Agriculture, Aarhus, Denmark.

