

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

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## OBJECTIVE

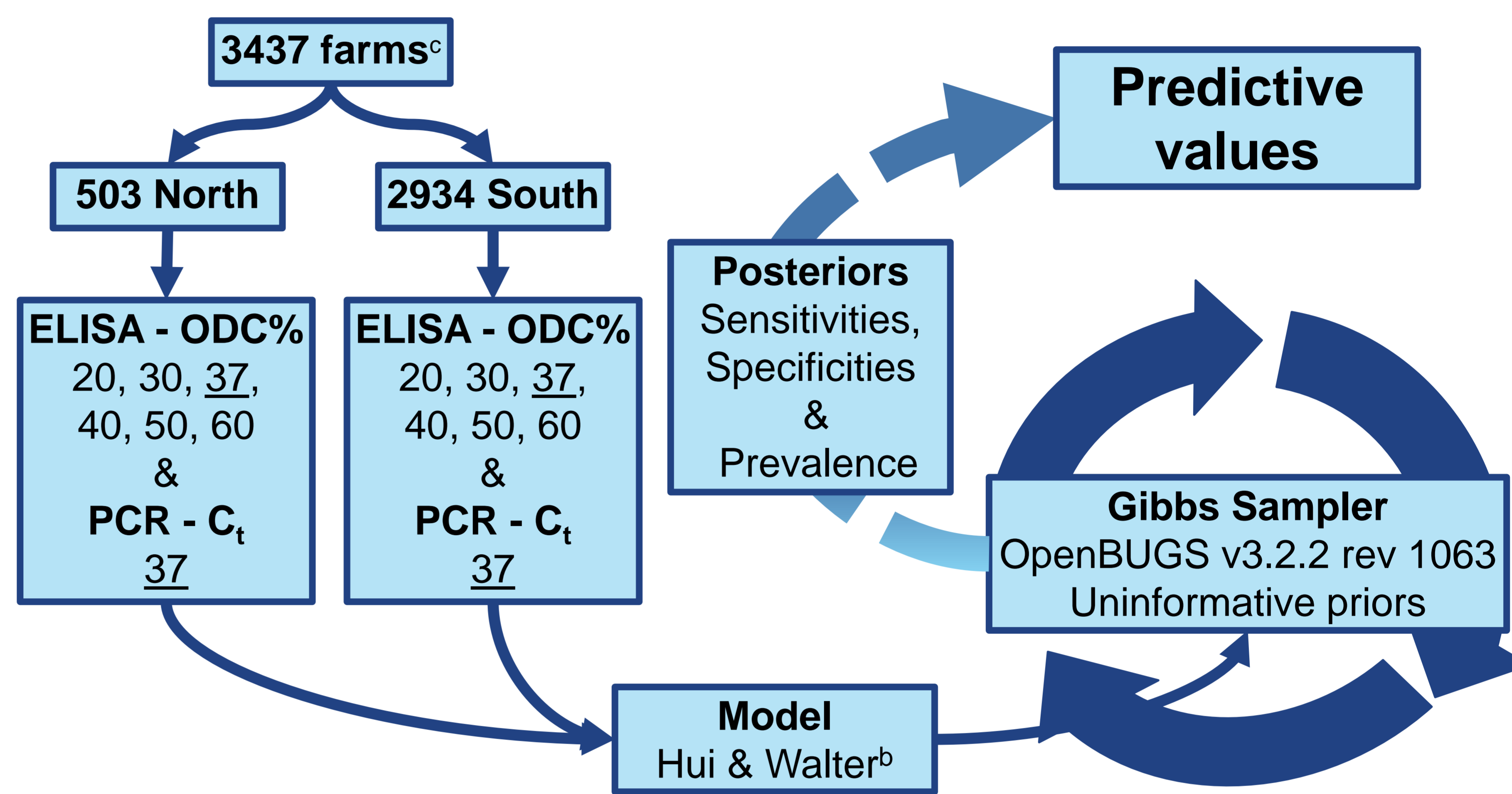
To evaluate the performance, at herd level, of the BIO K 302 *Mycoplasma bovis* ELISA against the PathoProof Mastitis-3 PCR.

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

## CONCLUSION

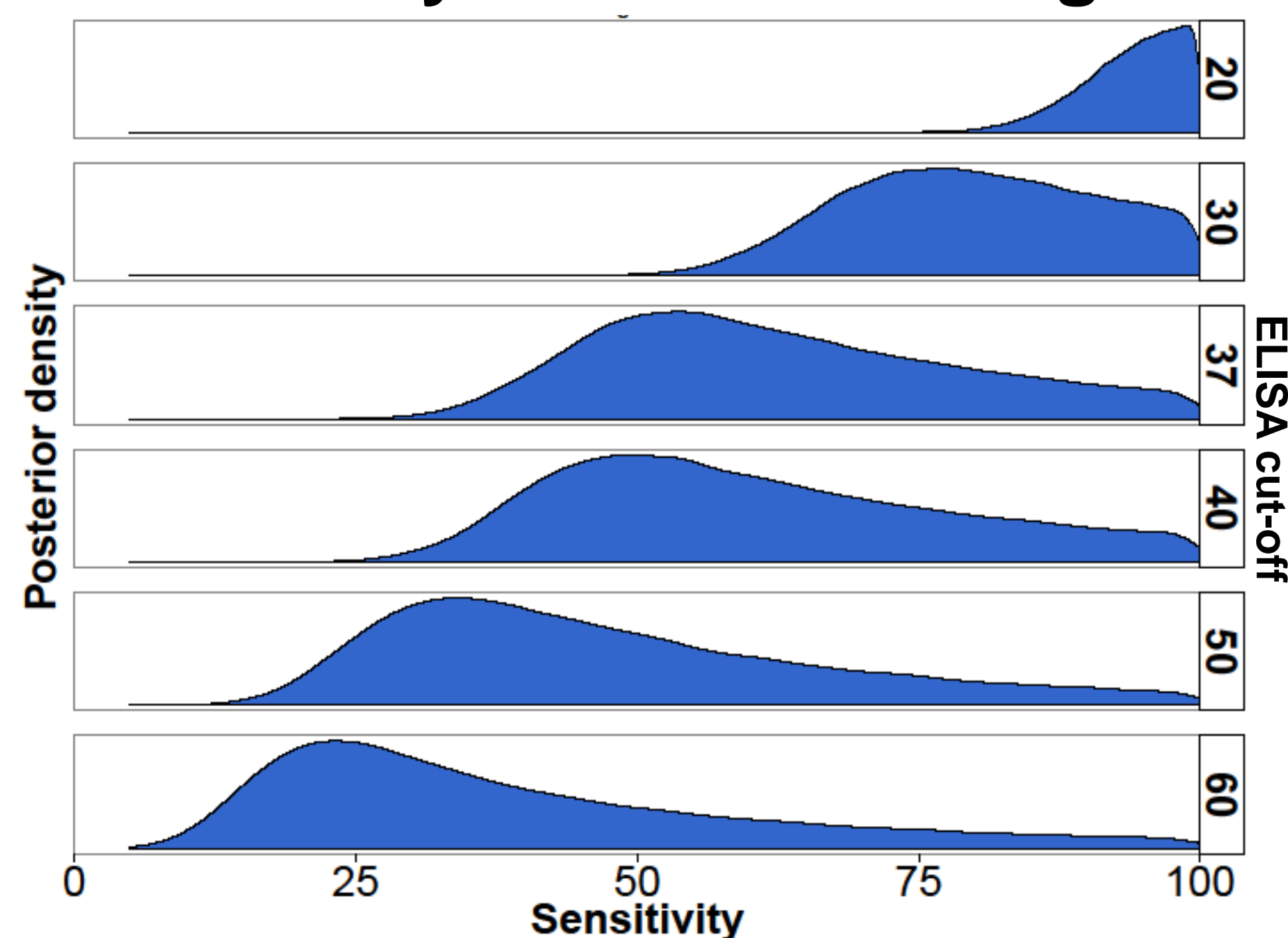
The BIO K 302 ELISA **positive predictive value improves**, at herd level, if the **cut-off is increased**.

## BAYESIAN LATENT CLASS ANALYSIS

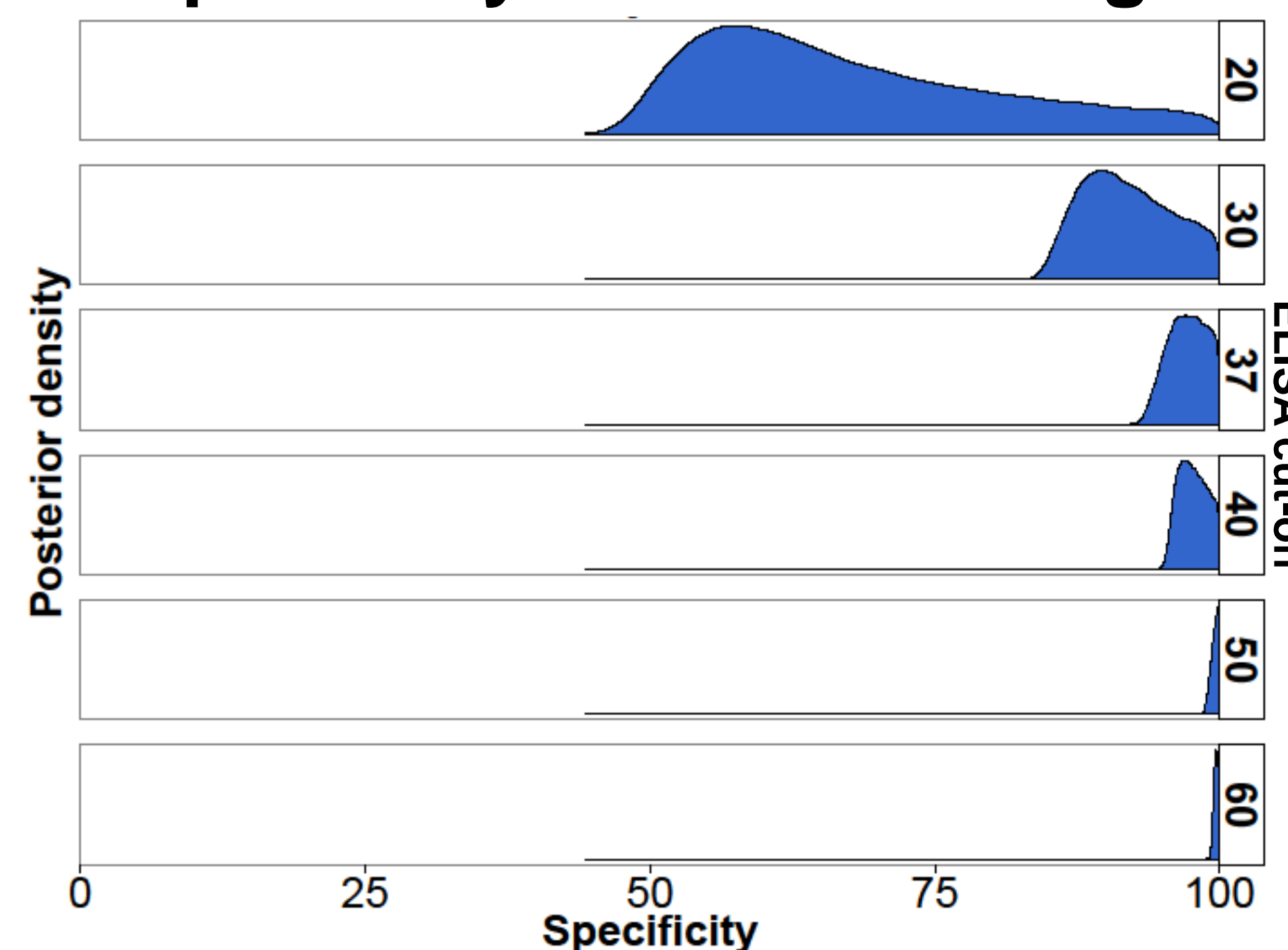


## RESULTS

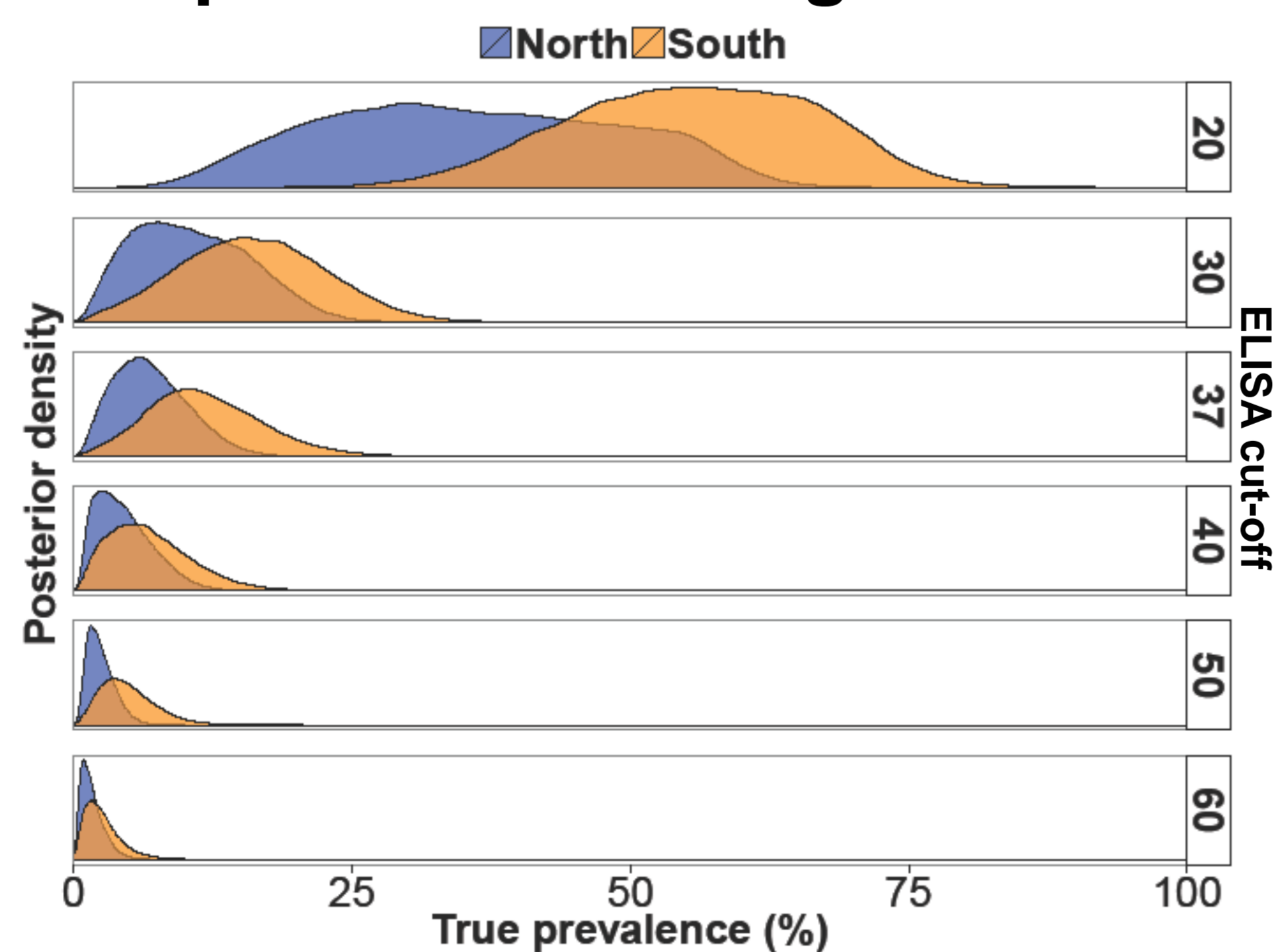
The sensitivity decreases at higher cut-off



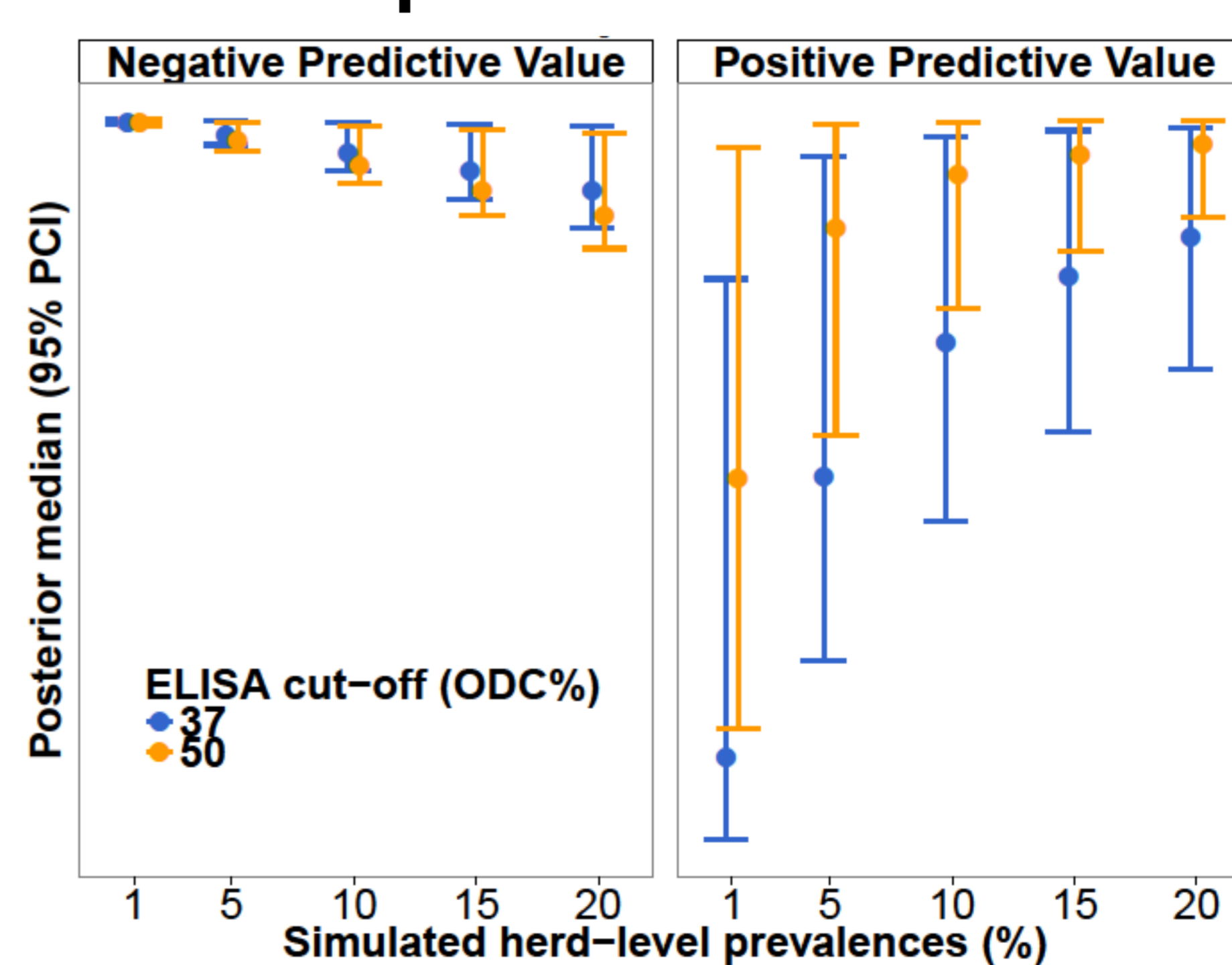
The specificity increases at higher cut-off



The latent prevalence changes with the cut-off



NPV is comparable – PPV increases



a) Maunsell, F. P., Woolums, A. R., Francoz, D., Rosenbusch, R. F., Step, D. L., Wilson, D. J., & Janzen, E. D. (2011). *Mycoplasma bovis* infections in cattle. *Journal of Veterinary Internal Medicine / American College of Veterinary Internal Medicine*, 25(4), 772–83.  
b) Hui, S. L., & Walter, S. D. (1980). Estimating the error rates of diagnostic tests. *Biometrics*, 36(1), 167–71  
c) Data were supplied by the Knowledge Centre for Agriculture, Aarhus, Denmark.

