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An European interlaboratory evaluation of PCR and ELISA methods for *Mycoplasma bovis* diagnostics (#76)

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Mycoplasma bovis is known worldwide as a major bovine pathogen. Increasing prevalence has been reported in Northern Europe. Control of *M. bovis* infections in cattle herds is difficult as increasing antimicrobial resistance is reported, and commercial vaccines are not available. Therefore, preventive measures such as high biosecurity standards guided by results of highly specific and sensitive diagnostic methods are essential.

A consortium of six European national veterinary institutes was established to evaluate the performance of PCR and ELISA diagnostic methods currently used by these institutes.

For serodiagnosis two commercial ELISA test kits were used: the Bio K302 ELISA (Bio-X Diagnostics, Rochefort, Belgium) and the soon to be commercially available ID Screen *Mycoplasma bovis* ELISA (IDvet, Grabels, France). These two methods have been compared to an in-house Western blot method. A sample panel was compiled of serum from cattle from five countries with high and low *M. bovis* disease prevalence. Sera were distributed among the six laboratories and tested as recommended by the suppliers of the test kits. Using latent class analysis, the diagnostic sensitivities of the Western blot, the ID Screen® *Mycoplasma bovis* and the Bio K302 ELISA were 96.9 %, 99.5% and 48.8 % respectively, and the diagnostic specificities were 99.7 %, 99.3 % and 87.0 % respectively

For PCR diagnosis, five different DNA extraction methods, seven different real-time and/or end-point PCR methods targeting four different genes, and six different real-time PCR platforms were used. Only one commercial kit was assessed, all other PCR assays were in-house tests. Three different assays were conducted to assess the specificity, sensitivity and comparability of the PCRs. The sensitivity and comparability assays were conducted using bronchoalveolar fluids of veal calves, artificially contaminated or naturally infected. With a few exceptions, all methods run routinely in the participating laboratories showed comparable performance.