MYCOPLASMA SPECIES IDENTIFIED FROM CATTLE IN ENGLAND AND WALES BETWEEN 2001 AND 2009 WITH IN VITRO
ANTIMICROBIAL EFFICACY DATA FOR RECENT MYCOPLASMA BOVIS ISOLATES

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Between 2001 and 2009, 2579 mycoplasmas and the related organisms were identified from cattle in England and Wales. During those nine years mycoplasma detection and identification methods have changed significantly, especially with the regular use of the polymerase chain reaction (PCR) and denaturing gradient gel electrophoresis (DGGE) method to detect and identify mycoplasmas. *Mycoplasma bovis* was consistently the most identified pathogen at 40.2%, of which 92.3% were from pneumonic calves. *M. bovirhinis* accounted for 33.7% of identifications with *M. alkalescens* at 11.7%. Others identified include acholeplasmas (2.6%), *M. canis* (2.4%), *M. dispar* (1.1%), *M. canadense* (1.0%) and *M. bovigenitalium, M. bovoculi, M. equirhinis, M. verecundum, M. wenyonii, Ureaplasma diversum* all at less that 1%. Among the acholeplasmas identified were *A. axanthum, A. granularum, A. laidlawii, A. oculi* and *A. equifetale*. Between 1995 and 2000 the identification of *M. canis* had increased from 0 to 10% of the identifications by 2000. Since then the numbers have remained below 5.8%. In contrast the number of identifications of *M. alkalescens* has increased continually from 11.2% in 2004, when PCR/DGGE was first introduced, to 25.9% in 2009. *M. canadense* and *M. dispar* identifications increased in 2008 and 2009 to 4.9% and 4.0% respectively. Mixed infections, occurred in 220 (8.5%) of the 2579 identifications. Most mixed identifications were with two Mycoplasma species but ten (3.6%) were with three Mycoplasma species. In the mixed infections *M. bovis* was most frequently detected with (in descending order) *M. alkalescens* (42.3%), *M. bovirhinis* (29.6%), *M. arginini* (11.8%), *Acholeplasma species* (5.5%), *M. canis* (4.6%), *M. canadense* (2.7%), *M. dispar* (1.8%), *M. bovigenitalium* (0.9%) and *M. verecundum* (0.9%). Minimum inhibition concentrations (MIC’s) were determined for recent *M. bovis* isolates against 13 antimicrobials. MIC results indicate that some isolates now have high MIC values against many antimicrobials. Whilst *M. bovis* remains the most economically important mycoplasma pathogen of cattle in England and Wales, the significance of the increasing occurrence of *M. alkalescens* and *M. canadense* associated with cattle disease is currently unknown.