

Molecular typing of *Mannheimia haemolytica* isolates from UK cattle surveillance submissions.

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INTRODUCTION

Mannheimia haemolytica is an important and commonly recognised cause of respiratory disease in cattle and sheep worldwide. Serotypes A1, A2 and A6 are considered the most prevalent in cattle worldwide and are readily isolated from the nasopharynx of healthy cattle¹.

Serotypes A1 and A6 have been reported as common isolates from pneumonic lung tissue².

OBJECTIVE

The aim of this study was to survey *M. haemolytica* isolates derived from pneumonia cases in the UK that were submitted for diagnostic investigation.

Understanding the diversity of serotypes in the sample set is of use to inform future preventative strategies.

MATERIALS AND METHODS

▶ 100 *M. haemolytica* isolates derived from bovine clinical pathology and post mortem samples from pneumonia cases (submitted during 2016-2018): 17 isolates from nasopharyngeal swabs, 2 samples from broncho-alveolar lavage fluid from cases with a recorded clinical history of respiratory disease, 81 isolates from post mortem samples with a clinical history of respiratory disease and consistent gross pathology. Sample selection was not random or unbiased.

▶ The isolates were tested using a multiplex PCR assay incorporating three serotype specific primer pairs for identification of *M. haemolytica* serotypes A1, A2 and A6³.

M. haemolytica serotype A1 was the most common serotype in this UK sample set, with 30% of samples containing serotype A2 and 18% serotype A6.

Not all vaccines against *M. haemolytica* cover all these major serovars which needs to be taken into consideration when designing the appropriate vaccination programme.



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RESULTS

Serotyping results for tested 100 *M. haemolytica* isolates (Fig 1):

- ▶ Serotype A145%
- ▶ Serotype A230%
- ▶ Serotype A618%
- ▶ Un-typable using the technique employed.....7%

Isolates were recovered from animals aged between 1 day and 8 years old and an equal proportion of male and female animals.

70% of isolates were derived from animals reared for beef production and 30% from animals reared for dairy production.

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FIGURE 1. Figure 1. Serotyping results for *M. haemolytica* isolates (n=100) from samples submitted between 2016-2018 in the UK

