INFECTIOUS DISEASES

Serological prevalence of five common Bovine Respiratory Disease (BRD) pathogens in Great Britain

Liz Cresswell, Alexandra Ashworth, Kat Baxter-Smith, Rebecca Cole, Eleanor Rawson

INTRODUCTION

Bovine Respiratory Disease (BRD) is one of the leading causes of calf morbidity and mortality, estimated to cost the UK farming industry £80 million per year. After infection with respiratory pathogens a positive serum antibody response can be detected after 4-6 weeks.

OBJECTIVE

To identify the prevalence of seroconversion to different BRD pathogens in order to understand their proportional contribution to BRD in British cattle herds between November 2020 and November 2022.

MATERIALS AND METHODS

255 calves were sampled on 51 different farms selected by convenience sampling across Great Britain. Five blood samples were taken per farm from unvaccinated calves between 3-6 months of age who were not in the acute stages of respiratory infection. Enzyme Linked Immunosorbent Assay (ELISA) testing (IDEXX) was undertaken for antibodies against Bovine Coronavirus (BCoV), Bovine Respiratory Syncytial Virus (BRSV), *Mannheimia haemolytica* (MANH), *Mycoplasma bovis* (MB) and Parainfluenza Virus 3 (PI3).

Bovine Coronavirus, *M. haemolytica* and PI3 were the most common pathogens for antibodies to be detected against. 84% of farms had calves with antibodies against three or more different pathogens. There was little geographical variation.

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RESULTS

- Positive antibody responses were commonly detected against BCoV, PI3 & MANH **(Fig 1 and 2).**
- 84% of farms returned positive antibody responses to three or more pathogens **(Fig 3).**
- There was little variation in the distribution of serological positivity by area **(Fig 4).**
- Bovine Coronavirus seropositivity remained high throughout the year. Bovine Coronavirus was most commonly detected with two other pathogens, with antibodies against MANH & PI3 respectively being detected on 91% of BCoV-positive farms.

FIG 1. Percentage of calves testing antibody positive to respiratory pathogens (n=255).

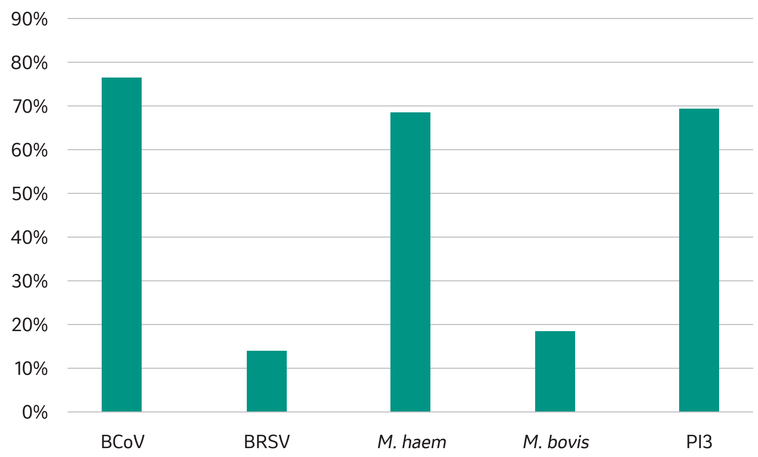


FIG 2. Percentage of farms with calves testing antibody positive to different respiratory pathogens (n=51).

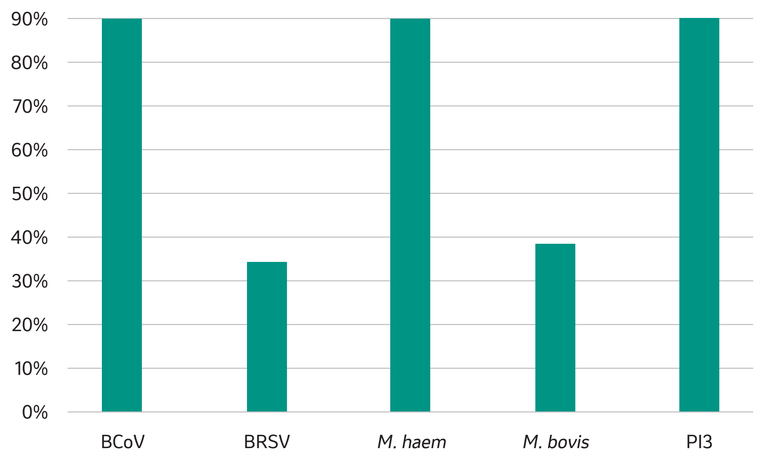


FIG 3. Percentage of farms returning positive antibody responses for 0-5 different pathogens (n=51).

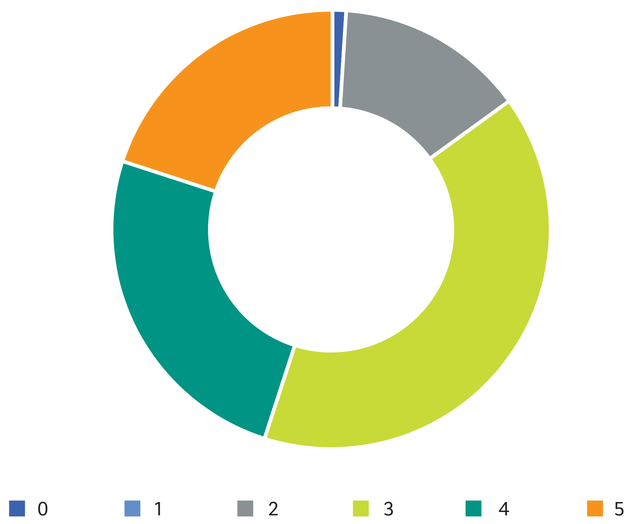
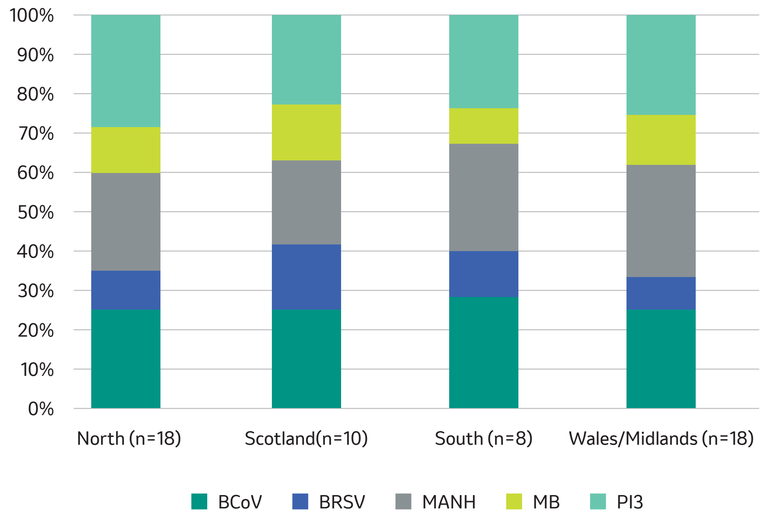


FIG 4. Proportion of farms with pathogen seropositivity by geographical area (n=51)



AUTHORS' AFFILIATION

1. MSD Animal Health, Walton Manor, Milton Keynes MK7 7AJ

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MSD Animal Health