

calculated. The median number of samples collected per herd was 10 for the heifers/cows and six for the calves. Overall the percent of herds with at least one positive heifer or cow was 67.0% (41/61) for *Giardia* species and 4.9% (3/61) for *Cryptosporidium* species, while in the calves the herd prevalence was 53.0% (53/100) for *Giardia* species and 14% (14/100) for *Cryptosporidium* species. In the calves, 12% (12/100) of the herds were positive for both *Cryptosporidium* species and *Giardia* species, whereas in the cows only 1.6% (1/61) of the herds were positive for both parasites. Calculation of an age specific prevalence of 8.7% (4/46) indicated that calves 16-20 days of age were the most commonly affected age group. In the cows age, specific prevalence calculations indicated 19.8% (52/262) of the

animals between two and five years of age were infected with *Giardia* species. Individual animal prevalence for *Giardia* species in the heifers/cows was 20.6% (119/578), and for *Cryptosporidium* species was 1.0% (6/578). Similarly, 23% (140/608) and 2.8% (17/608) of the calves were positive for *Giardia* species and *Cryptosporidium* species, respectively. Overall, only 1.48% (9/608) of the calves were positive for both parasites, whereas none of the cows had both parasites at the time of sample collection. The prevalence of *Giardia* species in cow-calf herds seems to indicate that they are an important reservoir for this protozoan parasite. In this study *Cryptosporidium* species seems to be less prevalent. Association between these parasites and factors which lead to increased shedding were investigated.

Abstracts

Preliminary Findings Regarding the Reproductive Performance in First Calving Dairy Heifers Associated With the Prevalence of Milk Antibodies to Bovine Viral Diarrhoea Virus and *Leptospira hardjo*

Whitehead J.G.M., Smith R.F., Murray R.D., Cripps P.J.
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Heifers calving into a dairy herd are at risk of exposure to pathogens that may adversely affect their fertility. Bovine Viral Diarrhoea virus (BVDv) and *Leptospira hardjo* have an important economic impact on dairy herd fertility. In order to investigate the possible effect of these pathogens on heifer fertility, milk samples were collected from 257 heifers calving in 23 herds in Southwest England at calving and 120 days later. Antibodies to BVDv and *L hardjo* were measured in each sample. Bulk milk samples were collected at the beginning and end of the investigation in each herd to indicate the disease status of each herd. The disease status of each heifer was

defined as milk antibody negative, milk antibody positive or having a rising titre on the basis of the two milk sample antibody results. Fertility data were collected for each heifer during the first lactation. There was no effect of presence of antibodies to or rising titre to BVDv or *L hardjo* on the fertility of the heifers during their first lactation. Neither was there an effect of herd size or herd milk yield on fertility. However, there was a marked difference between farms on the performance of heifers. Whilst the control of infectious diseases may have an impact on fertility, improving farm management such as nutrition, stockmanship and housing may be more beneficial to the fertility of first calving heifers.

Visits to Farm Buildings and Cattle Troughs by *Badgers (Meles meles)*: a Potential Route for Transmission of Bovine Tuberculosis 1 (*Mycobacterium bovis*) Between Badgers and Cattle

Roper T.J., Garnett B.T., Delahay R.J.
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Radio-telemetry and video surveillance were used to record nocturnal visits by wild badgers (*Meles meles*) to seven cattle farms. Three farms were regularly visited by badgers (mean: 2.65 visits/night) and a fourth was occasionally visited (0.14 visits/night). Frequency of visits peaked shortly after midnight and was negatively related to amount of rainfall in the preceding 24 h. Badgers visited farm buildings and feed troughs in order to consume a variety of foods, of which cattle feed cake was the most frequently exploited. In the course of visiting farms, badgers defecated and urinated directly onto

cattle feed, and they sometimes came into close direct contact with cattle. Foxes (*Vulpes vulpes*) and domestic cats (*Felis sylvestris*) also visited farms. We suggest that transmission of bovine tuberculosis (*Mycobacterium bovis*) between badgers and cattle may take place on farm premises and at cattle troughs. Improvements to farm bio-security, aimed at making anthropogenic food resources less accessible to badgers and other wildlife, could therefore play a part in combating the disease.