Eimeria Species in Danish Dairy Cattle – Preliminary Data from an Ongoing Study - DTU Orbit (17/06/2019)

Contrary to the majority of European countries, antiparasiticides are on prescription only in Denmark, thus treatment requires a proper diagnosis made by a veterinarian, and therefore relies on adequate diagnostic procedures. This study was performed to obtain information about presence of Eimeria spp. in Danish cattle herds, and secondly to improve awareness and proper diagnosis of these infections. Collection of samples was initiated in October 2010 from dairy herds with ≥50 cows and known diarrhea problems among calves. From each herd individual faecal samples were taken once from approximately 10 calves aged 3 weeks to 6 months. Veterinarians were instructed to collect samples 3-4 weeks following relocation to common pens, and from groups with reduced growth, uneven appearance and diarrhea. Oocyst excretion was analyzed using a modified McMaster technique. Eimeria spp. were identified based on morphology, and oocysts from highly positive specimens were sporulated for additional species verification. Furthermore faecal consistency was scored on a scale from 0 (firm) to 5 (watery with blood and/or mucus). Currently (March 2011) 42 herds and a total of 356 calves have been analyzed. Eimeria spp. were detected in 95.2% of the herds, and 90.5% were positive for the known pathogenic spp. E. bovis and/or E. zuernii. Of the individual calves 56% were shedding oocysts at the time of sampling, and 39% were excreting E. bovis and/or E. zuernii. A total of 11 different spp. have been identified so far. Of the faecal samples included in the study 7% had a firm/ normal consistency, 81% were soft to liquid, and 12 % were watery with blood and/or mucus. Oocyst excretion above 5000 oocysts per gram (OPG) was found in 6.5% of the calves, whereas 12.0% excreted 500-5000 OPG. Clinical coccidiosis was diagnosed in 11 of 42 herds based on detection of pathogenic Eimeria spp. and the following criteria: one or more samples with ≥5000 OPG; mean OPG >2500; one or more samples with >2500 OPG and clinical signs. Moderate to massive excretion of the less studied species E. subspherica and E. auburnensis was in several cases correlated to diarrhea. These cases however were not diagnosed as coccidiosis. The results warrants further pathogenicity studies of the different Eimeria spp. In addition, it was shown that correct diagnosis of coccidiosis is a challenge and knowledge of the management system is essential for interpreting laboratory findings. In many cases these findings do not support diagnosis of coccidiosis either because there is no real coccidiosis problem or because faecal samples were obtained at the wrong time.

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