Eimeriosis in Danish Dairy Calves – Correlation between Species, Oocyst Excretion and Diarrhoea - DTU Orbit (11/01/2019)

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The study collected up-to-date data on prevalence and importance of Eimeria infections in Danish dairy calves with suspected clinical eimeriosis and analysed correlation between Eimeria spp., oocyst excretion and diarrhoea. From October 2010 through August 2011, veterinarians collected faecal samples from dairy herds (n = 52) with > 50 cows and a history of diarrhoea in young stock. Individual faecal samples were collected 3–4 weeks following re-housing to common pens from calves (n = 453) aged 3 weeks to 6 months. Faecal consistency and total number of oocysts per gram of faeces (opg) were determined, along with opg values for the specific Eimeria spp. Association between opg and faeces consistency was evaluated in a multinomial, logistic regression model. Overall prevalence of Eimeria spp. was 96.2 % with a prevalence of 60.9 % in individual calves. E. zuernii and/or E. bovis were detected in 88.5 % of herds and 41.5 % of the calves. Mean opg was 2,040 (range 0–114,000) in the calves, of which 18.1 % had opg values ≥ 1,000. A total of 12 Eimeria spp. was found with the following calf prevalences: E. ellipsoidalis (37 %), E. zuernii (32 %), E. bovis (28 %), E. cylindrica (23 %), E. auburnensis (23 %), E. canadensis (10 %), E. subspherica (8 %), E. alabamensis (7 %), E. bukidnonensis (3 %), E. wyomingensis (1 %), E. pellita (0.2 %), E. brasiliensis (0.2 %). Mixed infections were present in all but one Eimeria-positive herds. Diarrhoea was seen in 35.9 % of the calves, and a significant (p = 0.003) positive correlation was detected between diarrhoea and total opg as well as diarrhoea and oocyst excretion for E. zuernii (p = 0.03), E. bovis (p = 0.05) and E. cylindrica (p = 0.04). No such relationship could be detected for E. ellipsoidalis (p = 0.87), E. subspherica (p = 0.54) or E. auburnensis (p = 0.10). Further studies should focus on possible synergistic effects of multiple Eimeria spp. infections as well as interaction between Eimeria spp. and other enteric pathogens.

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