Eimeriosis in Danish Dairy Calves – Correlation between Species, Oocyst Excretion and Diarrhoea

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 rehousing 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.

General information
State: Published
Organisations: National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, Jan Dahl Consult, Bayer A/S
Contributors: Enemark, H. L., Dahl, J., Enemark, J. M. D.
Pages: S169–S176
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Parasitology Research
Volume: 112
ISSN (Print): 0932-0113
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.46 SJR 0.991 SNIP 1.001
Web of Science (2017): Impact factor 2.558
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.2 SJR 0.94 SNIP 0.967
Web of Science (2016): Impact factor 2.329
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.07 SJR 0.967 SNIP 0.988
Web of Science (2015): Impact factor 2.027
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.26 SJR 0.984 SNIP 1.197
Web of Science (2014): Impact factor 2.098
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.4 SJR 1.092 SNIP 1.161
Web of Science (2013): Impact factor 2.327
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.8 SJR 1.157 SNIP 1.316