Experiments were carried out to establish an infection and disease model for Clostridium perfringens in broiler chickens. Previous experiments had failed to induce disease and only a transient colonization with challenge strains had been obtained. In the present study, two series of experiments were conducted, each involving four groups of chickens with each group kept in separate isolators. A coccidial vaccine given at 10 times the prescribed dosage was used to promote the development of necrotic enteritis. In the first experiment, cultures of C. perfringens were mixed with the feed at day 9, 10, 11, and 12, and the coccidial vaccine was given at day 10, whereas in the second experiment, C. perfringens cultures were mixed with the feed at day 17, 18, 19, and 20, and the coccidial vaccine was given at day 18. Chickens were examined at day 9, 11, 12, and 15 (Experiment 1), and at day 17, 18, 20, and 24 (Experiment 2). There was no mortality in any of the groups; however, chickens in the groups receiving both coccidial vaccine and C. perfringens developed the subclinical form of necrotic enteritis, demonstrated by focal necroses in the small intestine, whereas chickens in control groups or groups receiving only coccidial vaccine or only C. perfringens cultures developed no necroses. The results underline the importance of predisposing factors in the development of necrotic enteritis.

General information
State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, National Veterinary Institute
Pages: 34-39
Publication date: 2008
Peer-reviewed: Yes

Publication information
Journal: Avian Diseases
Volume: 52
Issue number: 1
ISSN (Print): 0005-2086
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.26 SJR 0.656 SNIP 0.706
Web of Science (2017): Impact factor 1.328
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.24 SJR 0.6 SNIP 0.899
Web of Science (2016): Impact factor 1.109
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.26 SJR 0.757 SNIP 0.783
Web of Science (2015): Impact factor 1.104
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.16 SJR 0.715 SNIP 0.666
Web of Science (2014): Impact factor 1.241
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.56 SJR 0.836 SNIP 0.745
Web of Science (2013): Impact factor 1.107
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.75 SJR 0.877 SNIP 0.976
Web of Science (2012): Impact factor 1.734
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.59 SJR 0.803 SNIP 0.853
Web of Science (2011): Impact factor 1.462