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Oral presentation

**Detection of *Enterococcus cecorum* to identify persistently contaminated locations using faecal and environmental samples in broiler houses of clinically healthy flocks**

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**Abstract:**

**Background/Objective:** Since the first outbreaks of pathogenic strains in 2002, *E. cecorum* has become one of the most important pathogens in the modern broiler industry. Despite increasing knowledge about the pathogen, little is known about the epidemiology and the associated transmission sources.

**Methods:** Samples from different locations were collected from two broiler farms in Germany over a total of six production cycles. Samples were collected at days 1, 5, 10, 15, 21, 27, 34, 41 post-hatch and after cleaning and disinfection (C&D). A total of 1,017 samples were collected from 25 different locations on the farms. In the laboratory, the DNA was isolated and samples were analysed for EC by quantitative real-time PCR.

**Results:** The overall detection rate was 7.5% (76/1014). The probabilities for positive and negative samples did not differ between the farms. The number of findings differed significantly between the cycles. Compared to other samples, the chances of detecting EC in faecal samples were significantly higher. Most positive samples were found in the last week of the production periods. After C&D, numbers of positive PCR results decreased and were only obtained in four out of 14 locations.

**Conclusion:** The present study detected potential EC sources and may help to improve hygienic measures to avoid transmissions. Most positive samples were detected in faecal samples, carcass buckets, air exhaust and boot profiles. The results indicated the persistence of EC in broiler houses of clinically healthy flocks that could lead to potential horizontal transmission routes. As positive samples were found at day 1, a transmission from transport or hatcheries cannot be excluded. A re-introduction from contaminated environment after insufficient C&D seemed possible. The decreasing detection rate after C&D showed that C&D is the most important measure for interrupting the chain of infection.

**Keywords:** *Enterococcus cecorum*, broiler health, environment, cleaning and disinfection, qPCR, transmission routes