

# BACTERIAL DISEASES

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## NEONATAL DIARRHOEA (ND) - RESULTS FROM A MONITORING PROGRAM

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### Background and Objectives

ND in swine causes morbidity and mortality. Most common pathogens are bacteriological like *Escherichia coli* (*E. coli*) and *Clostridium perfringens* (*C. perfringens*). This study evaluated the occurrence of bacteriological pathogens in piglets suffering from ND from various European countries during 2020.

### Material and Methods

A total of 324 mostly fecal samples from 116 farms were tested bacteriologically for diarrheal pathogens. The isolated *E. coli* and *C. perfringens* strains were typed molecular biologically in order to determine the occurrence of virulence and toxin genes. Most of the farms were located in Germany (n=59), in The Netherlands and Poland (each n=19), Denmark (n=9), UK (n=8), Austria (n=1) and Ireland (n=1).

### Results

A total of 710 isolates were found, among them *E. coli* (48.6%) was the most frequently found, followed by *C. perfringens* (33.9%) and *Clostridioides difficile* (15.9%). In the semiquantitative examination, *Clostridioides difficile* was mostly detected with minor (53.1%), *C. perfringens* with moderate to high content (96.7%). Of these a total of 276 *E. coli* and 117 *C. perfringens* isolates were confirmed to differ from one another with regard to their virulence-associated factors resp. toxin gene patterns within a single farm. Only 19.9% (n=55) of these *E. coli* isolates could be assigned to one of the known pathotypes (EDEC, EPEC, ETEC, NTEC), another 104 (37.7%) carried genes for fimbriae and adhesins as well as for toxins, and therefore may be considered potentially virulent. All of the *C. perfringens* isolates could be classified as type A. 106 (90.6%) of the isolates carried the  $\beta$ 2-toxin gene beside the species-specific  $\alpha$ -toxin-gene.

### Discussion and Conclusion

This study confirms *E. coli* and *C. perfringens* as the main bacterial pathogens that occur in suckling piglet diarrhoea. In this study, 57.6% (n=159) of the *E. coli* isolates can be considered virulent or potentially virulent based on their gene pattern, and even 90.6% of the *C. perfringens* isolates.