A polymerase chain reaction (PCR) was developed for the specific amplification of a part of each of the five Clostridium perfringens toxin genes: alpha (alpha), beta (beta), epsilon (epsilon), iota (iota), and enterotoxin (CPE). While the toxicity neutralization test (TNT) only showed limited ability to detect the or toxin, the lecithinase test and PCR test (PCR(alpha)) concordantly detected the ct toxin and the alpha toxin gene, respectively. A monoclonal enzyme linked immunosorbent assay (ELISA) and a PCR(beta) test were compared and were in accordance for the detection of the beta toxin (gene) from pure and mixed cultures from piglets suffering from necrotizing enteritis. However, the PCR(beta) test was superior to the ELISA for detection of the beta toxin (gene) in necrotic intestinal mucosa without culturing. An internal standard to be co-amplified with the beta toxin gene was constructed and served as a control for inhibition of the PCR(beta) test. The enterotoxin gene was not in any of 95 Danish Clostridium perfringens field isolates. This indicates that the C. perfringens enterotoxin is not involved in diarrhoea in certain animal species from this area. The origin of enterotoxin-positive C. perfringens involved in intoxication of humans will need special attention in future studies.