

7th Annual Summit on

MICROBIOLOGY: EDUCATION, R&D AND MARKET

September 28-29, 2018 | San Antonio, USA

Interference of *Bacillus cereus* and *Clostridium perfringens* isolation from frozen buffalo meat with 16S rRNA Sequencing of *B. cereus* isolate conducted in India

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India produces 1.49 million tons of buffalo meat contributing 45.56% of world buffalo meat production. *Bacillus cereus* and *Clostridium perfringens* both are spore formers. Hence, tolerate high temperature, high pressure, radiation etc. Consequently, germinate in favorable condition. *B. cereus* is aerobic but, *C. perfringens* anaerobic in nature. Both spoil and contaminate frozen buffalo meat product during processing in an abattoir. *B. cereus* causes a series of illness like nausea, vomiting, diarrheal syndrome, emetic syndrome, abdominal pain and produces lethal enterotoxin. *C. perfringens* attributed to protein enterotoxin, during sporulation can infect the wound, gas gangrene, intense abdominal cramps, gas, and diarrhea (nausea and vomiting are rare). Meat contaminated with *C. perfringens* leads to approximately 160,000 disease cases annually in the Netherlands. Vacuum packing contains CO₂ and N₂ to inhibit the spore formers. But as *B. cereus* is aerobic so if there is low in said gases so *B. cereus* will reappear. In this research, out of 61 frozen meat sample, 52 positive pink color colonies with lecithinase halo zone around the colony on MYP agar and 9 negatives for *B. cereus*. This article also reveals, among 26 samples of frozen meat all are positive for *C. perfringens* appear as yellowish - gray or black colonies with rotten smell of egg and lecithinase activity on perfringens agar supplemented with TSC or SFP undergo anaerobic condition. Microbiological risk assessment analysis of abattoir air reveals out of 25 samples, 51% are positive for *B. cereus*, 25 samples of water are 100% free from *B. cereus*, out of 25 swab samples of slaughter equipment 60% are positive for *B. cereus* and out of 25 swab samples of food handlers are negative. One isolate from positive *B. cereus* colonies isolated and subjected to 16S rRNA sequencing analysis which chromatogram and blast results identified as *Bacillus* spp. EC2 16S ribosomal RNA gene, partial sequence. Above all, the risk and hazards obtained more with *C. perfringens* as food spoilage contaminant, but, the association of *B. cereus* with meat also prevail equal risk for human in this study. Hence, Microbiological quality monitoring, implementation of international standards, safe production practice of meat may reduce the risk of food born disease.

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