Microbial contamination of pig carcasses surfaces at different stages in the slaughter line

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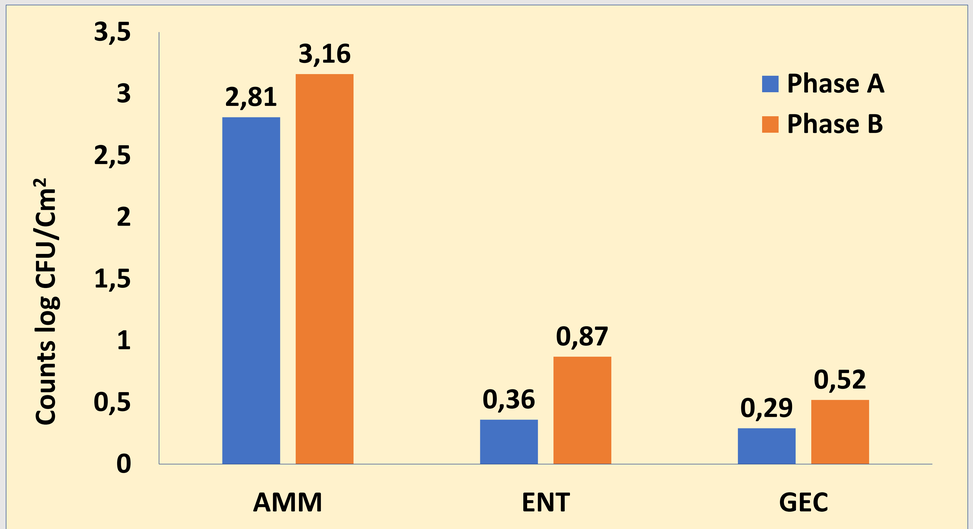
Background

The microbial contamination monitorization of carcasses surfaces throughout the slaughter line, enables the hygiene verification of the slaughter operations, which allows us to define new methodologies for quality control and food safety.

Objectives

The main objective of this study was to obtain microbial contamination of carcasses data at different stages of a pig slaughter line.

Results and Discussion



AMM – Mesophilic microrganisms | ENT – Enterobacteriaceae | GEC – generic *Escherichia coli)*

Analysing the evolution of the microorganisms tested between the two selected phases of the slaughter line, a statistically significant increase from phase A to phase B was observed for AMM ($P < 0.01$), ENT ($P < 0.001$) and GEC ($P < 0.05$) counts. On average, were detected 2.81, 0.36 and 0.29 log CFU/Cm^2 in phase A and 3.16, 0.87 and 0.52 log CFU/Cm^2 in phase B for AMM, ENT and GEC respectively. In this study, the evisceration step and subsequent handling and improper use of utensils on the carcasses, were considered the most critical procedures, responsible for the recontamination of the carcasses and increasing counts from phase A to phase B.

Materials and Methods

3 visits were made to a swine slaughterhouse → 120 swab gauze samples (ISO non-destructive method)

Before evisceration, After scraping (phase A)
After evisceration, Immediately before refrigeration (phase B)
→ **Analised surfaces**: Tigh, neck, abdominal and lumbar dorsal areas (delimited with sterilized templates (100 Cm^2))

Enumeration of (ISO procedures):
Mesophilic microorganisms (AMM)
Enterobacteriaceae (ENT)
Generic *Escherichia coli* (GEC)

Conclusions

The control of the microbial load is important to ensure the hygiene of the processes.

The concept of continuous improvement must be taken into account in order to increase meat quality and safety parameters, by reducing the possibility of recontamination by spoilage and pathogenic microorganisms.

The microbial loads comply with the limits regulated by the Commission Regulation (EC).

Acknowledgments

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