

P43: METHOD OF ASSESSMENT OF THE EFFICACY OF DECONTAMINATION OF THERMOSENSITIVE FOODSTUFFS

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As a consequence of general awareness with respect to food safety issues, there is a current requirement that eggs have a clean shell, devoid of microbial contamination.

This work refers to a method of evaluation of antimicrobial action of cold atmospheric plasma, a technology employed herein for the decontamination of egg surface.

The treatment with cold atmospheric plasma is a new technology that achieves inactivation of microorganisms potentially contaminating the surface of foodstuffs.

Several microorganisms can contaminate eggs during production and/or processing, as well as during food preparation and consumption. Therefore, poultry enterprises should have cost efficient and effective systems for the secure disinfection of eggs.

In our research on egg decontamination through use of cold atmospheric plasma, the eggs were contaminated under controlled conditions with *Salmonella enterica* serovar *Typhimurium* (ATCC 13311). The concentration of the *Salmonella* strain used was 10^9 UFC/mL.

Briefly, each egg was inoculated with 10^8 CFU and, after drying, was microbiologically analysed according to our own method.

The initial contamination level (10^8 CFU/egg) is much higher than typical naturally-occurring contaminations, but allows assessment of decontamination over 6 orders of magnitude before reaching the detection limit.

For each egg, triplicate measurements were first averaged, the numbers of colony forming units (CFU) then being converted to \log_{10} CFU/egg.

The implementation of this assessment method for the controlled contamination of eggs was necessary in order to avoid potential erroneous results in our work with regard to the efficacy of cold atmospheric plasma treatment for egg decontamination.