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# 3P69 - Consideration of sterilizing method for Stacked Pieces in Packaged Foods Using Pulsed Plasma

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Cold plasma is attractive as a non-thermal sterilization method for a fresh food. In addition, the plasma can be generated at inside of a package by barrier discharge. Therefore it has been studied as the sterilization method for a packaged fresh food [1][2]. However, effect for between stacked pieces of the foods have not been considered well yet.
In this study, we have investigated possibility of sterilizing microorganisms between the stacked fresh foods. For sterilizing, the foods were separated by using a PET filter. In this experiment, Escherichia coli (ATCC11229) was used for the sterilizing target microorganism. Agar mediums were used for simulating the foods. Escherichia coli was set in a place where agar medium and PET filter were overlapped. The sterilization effect was measured in the case of changing the shape of the PET filter. Parameters were charging voltage and repetition rate. From the results, we showed the stacked foods were sterilized by putting the filter between the fresh foods.
[1] D. Ziuzina, et al., J. Appl. Microbiol. 114, 778-787 (2013)
[2] N. N. Misra, S. Patil, T. Moiseer, P. Bourke, J. P. Mosnier, K. M. Keener, P. J. Cullen, "In package atmospheric pressure cold plasma treatment of strawberries", Jour. Food Eng., 125, pp.131-138 (2014)

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