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# INACTIVATION OF E. COLI AFFECTED BY MEDIUM CONDUCTIVITY IN PULSED ELECTRIC FIELD PROCESSING

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## INACTIVATION OF *E. COLI* AFFECTED BY MEDIUM CONDUCTIVITY IN PULSED ELECTRIC FIELD PROCESSING

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Pulsed electric field PEF is effective in inactivating microorganisms in liquids such as saline water, phosphate buffer, milk and others. PEF treatment efficacy is influenced by number of parameters. Medium conductivity has been a subject of investigation because of the contrary reports. Present study was undertaken to systematic evaluate the effect of medium conductivity on the inactivation of *E. coli*. The experiments were conducted on *E-coli* inoculated phosphate buffer (2 to 4.5 mS/cm) in a continuous-flow co-field treatment chamber with an applied electric field strength of 60 kV/cm and 50 Hz pulse frequency. In the first set of experiments, the effect of medium conductivity on *E-coli* inactivation was evaluated at 49  $\mu$ s treatment time. In the second set of experiments, the effect of medium conductivity was evaluated at constant specific energies of 54, 77 and 135 J/ mL. For the same treatment time, the microbial inactivation was higher in the buffer with higher electivity conductivity. Sub-lethal injury to *E. coli*. was observed in buffer PEF treatment. Even though the treatment times were different there was no significant effect of on the microbial inactivation to the different conductivity medium when the same specific energy was applied.

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