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Evaluation of SAHW for its bactericidal efficacy on *E. coli* and *Salmonella* present on the glass plates and rayon sheets via *in vitro* experiments

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Background: Presence of bioaerosol in the poultry farms might play as a potential risk for the outbreaks of some infectious diseases. Here we evaluated slightly acidic hypochlorous water (SAHW) (Hi-Clo Soft Acidic Water: OSG corporation, Osaka, Japan) for its ability to inactivate bacteria.

Materials & Methods: SAHW (containing 50, 100 ppm chlorine, pH 6) was mixed with *Escherichia coli* or *Salmonella* infantis in a reaction-tube and its activity was stopped by adding fetal bovine serum (FBS) after a short time of exposure. SAHW efficacy was also evaluated after spraying by nebulizer on the both mentioned bacteria inoculated on the Rayon sheets or glass plates inside a plastic box. After some moment of exposure, samples were removed and placed inside a stomacher bags containing 10% FBS in phosphate buffered saline to stop SAHW's efficacy. The remaining bacteria were titrated on DHL agar to calculate their colony forming units (CFU)/ml.

Results & Discussion: In the reaction tube, SAHW (50 and 100 ppm) could inactivate both bacteria within 5 sec of contacts up to the undetectable level (≤2.6 log 10 CFU/ml) but in the spraying form only SAHW 100 ppm was able to reduce titer of both bacteria within 7 min spray and 5 min contact times on the Rayon sheets and 5 min spray and 5 min contact times on the glass plates up to lower than the detectable level. Our finding confirms SAHW has ability to inactivate both bacteria which are normally present at farms and acts as a powerful disinfectant.

Biography

Hakimullah Hakim is currently a PhD student at the united graduate school veterinary science, Gifu University, Japan.

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