



Influence of exposure time to neutral electrolyzed water on the reduction of contamination to *Salmonella typhimurium* and *E.coli* on skin and fresh poultry fillets

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Objectives: In recent years, the electrolyzed water is considered as a useful disinfectant. From desirable characteristics of this disinfectant could be noted to inexpensive, safe, and no adverse impact on the environment and the lack of chemistry inserted. The aim of this study was to evaluate the Influence of exposure time to neutral electrolyzed water on the reduction of contamination to *Salmonella typhimurium* and *E.coli* on skin and fresh poultry fillets.

Materials & Methods: In present study, the neutralized electrolyzed water with 100 ppm free available chlorine was used for the exposure times of 1, 5, 10, 15 and 30 minutes on the inoculated skin (10^6 log/cm²) and fresh chicken fillets (10^6 log/g) with mentioned bacteria. Also distilled water was used as control solution in similar circumstances.

Results & Conclusion: The results showed that the reduction of studied bacteria in skin and fresh poultry fillets were statistically significant ($P < 0.01$) in all conditions and treatments with neutral electrolyzed water in comparing to distilled water. The results showed that the treated fillets with neutral electrolyzed water for 15 minutes lead to the complete disappearance of *E. coli*. The most reduction of *E. coli* in treated skin with neutral electrolyzed water was 2.63 log/cm² after 30 minutes of exposure. Also the most reduction of *salmonella typhimurium* in treated fillets and skin with neutral electrolyzed water after 30 minutes of exposure were 2.51 log/g and 2.54 log/cm² respective. In brief, the obtained results showed that the usage of neutral electrolyzed water was an effective method in reducing *Salmonella typhimurium* and *Escherichia coli* bacteria in fresh poultry fillets and skin. So consumption of neutral electrolyzed water for washing of slaughtered poultry carcasses in the lines and chillers of slaughterhouses could be in consideration as a suitable method of disinfection.

Keywords: Neutral Electrolyzed Water, *Escherichia coli*, *Salmonella typhimurium*

Seroprevalence of Newcastle disease virus and Avian influenza virus antibodies in breeder flocks of West Azarbayjan

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Objectives: Respiratory complexes are serious threats to poultry industry causing a heavy financial burden on the owners of the industry and governments. Avian influenza virus (AIV) and Newcastle disease virus (NDV) are the two most important respiratory agents in poultry production. Decreased efficacy of production and increased mortality rate are observed in affected flocks. Serological assays are useful tools to evaluate immune status of birds. Hemagglutination inhibition (HI) test is a serologic test which is commonly used in diagnostic laboratories.

Material and Methods: In order to determine NDV and AIV (H9N2 subtype) antibody titers in broiler flocks of West Azarbayjan, blood samples were collected from 64 flocks of West Azarbayjan avicultures and subjected to HI. The results were recorded and analyzed using version 18 of SPSS statistical software.

Results: Mean antibody titers for NDV was 9.4, at least of antibody titers was 7 and peak of antibody titers was 12, 85% (425 birds) had antibody titers range of 7-10 which may be due to previous vaccination and 15% (75 birds) were in range of 11-12 (possibility of field challenge). Mean antibody titers for AI was 8.7, at least antibody titers was 7 and peak of antibody titers was 12, 94% (470 birds) had antibody titers range of 7-10 which may be due to previous vaccination and 6% (30 birds) were in range of 11-12 which possible showed field challenge. There were some differences in antibody titers status of birds between different season of year.

Conclusion: High HI antibodies of AIV and NDV in serum of birds highlights important role of these infections in respiratory complexes of broilers in this area. Biosecurity measures, vaccination and monitoring are effective tools to prevent introduction of such infections and decrease financial losses due to these infections.

Keywords: Newcastle disease, Avian influenza, HI, breeder, West Azarbayjan.