

Evaluation of four enzyme-linked immunosorbent assays for the serological survey of avian influenza in wild bird species

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Concerns about the threat H5N1 High Pathogenic Avian Influenza Virus poses on animal and human health has risen since it broke out in Hong Kong in 1997. Since then, Avian Influenza surveillance of aquatic birds has increased. More and more commercial Enzyme Linked Immunoassay (ELISA) tests are available for serologic surveillance but these tests are often developed and validated for use with domestic poultry. However, for a correct interpretation of ELISA test results from wild bird sera, more information is needed. In present study, four ELISA assays (ID-Vet IDScreen®, IDEXX FlockChek™ AI MultiS-Screen Ab Test Kit, Synbiotics FluDETECT™BE and BioChek AIMSp) were compared for the serological analysis of 172 sera from wild duck, mute swan and canada goose. Samples were selected based on ID-Vet IDScreen-results to obtain an approximate 0,5 prevalence rate. A total of 92 sera from experimentally infected Specific Pathogen Free (SPF) chickens and peking ducks were included in the tests as well. Cohen's kappa statistics and Pearson correlation coefficients were calculated for each combination of 2 tests and for each bird species. Test agreement for wild duck sera varied from no until moderate agreement while test results for Canada geese and swan sera agreed fairly until almost perfectly. Tests agreed the most for sera from experimentally infected SPF chickens and peking ducks. This study shows not every commercial ELISA can be used for the testing of sera from every wild bird species and that more reliable validation studies should be considered for the use of these tests in serologic surveillance of wild bird species.