Serological evaluation of Newcastle disease protection among broilers at a live bird market in Kano, Northwest Nigeria, and its epidemiological significance

Authors: Funsho-Sanni [1]; Ella [1]; Samuel Sanni; Inabo [2]; Abdulkarim luka [3]; Eleyi Ameh [4];

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Vaccination is a tool of Newcastle disease (ND) control among broilers. This study aimed at determining the immunity status of sampled broilers against ND at a live bird market in Kano, Northwest Nigeria, and its epidemiological implication. A cross-sectional study of antibodies against Newcastle disease virus (NDV) was carried out among broiler chicken in a live bird market in Kano State, Northwest Nigeria. A total of 471 samples was tested successfully. NDV antibody titer was assayed using hemagglutination-inhibition test (HI) and ND indirect enzyme-linked immunosorbent assay (ELISA). Serological levels of NDV antibodies were 67.9% (ELISA) and 78.1% (HI). Also, 67 (20.9%) samples tested positive for ELISA but negative for HI, whereas 115 (31.3%) samples tested negative for ELISA but positive for HI. There is strong association between the

immune status obtained from both tests ($P < .05$), significant difference exists between the immune titer obtained from both tests ($P < .05$). Protective antibody titer among the test subjects suggests individual protection against virulent NDV (vNDV) strain; however, protective levels ≥85% that confers herd immunity were not attained. This report emphasizes the need for farmers to be more compliant to ND vaccination schedule and best practices in their poultry farm to enhance ND control in Live Bird Markets (LBMs).
Keywords: ELISA; Newcastle disease virus; antibody; broilers; hemagglutination-inhibition (HI) test

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Affiliations: 1: Department of Microbiology, Faculty of Life Sciences, Ahmadu Bello Zaria, Kaduna State, Nigeria **2:** Department of Microbiology, Faculty of Life Science, Ahmadu Bello University, Zaria, Kaduna State, Nigeria **3:** Department of Zoology, Faculty of Life Sciences, Ahmadu Bello University, Zaria, Kaduna State, Nigeria **4:** Department of Microbiology, Faculty of Life Sciences, Ahmadu Bello University, Zaria, Kaduna state, Nigeria

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We recommend

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