

# **Effect of Immunosuppression on Newcastle Disease Virus Persistence in Ducks with Different Immune Status**

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## **Abstract**

This study was carried out to verify the possibility that ducks are sources of Newcastle disease (ND) virus infection for chickens in mixed flocks. Immunosuppressed (IS) and non immunosuppressed (NIS) birds, at three different antibody levels (medium, low and absent) were used; the titres having been induced through vaccination, and Immunosuppression done using dexamethazone. Each of the 3 respective groups was further divided into 2 groups of about 12 ducks each: one challenged with velogenic ND virus; the other not challenged. Selected ducks from all groups had their antibody titres monitored serially using hemagglutination inhibition test, while two birds from each of the challenged groups were killed and respective tissues processed for ND viral recovery, using chicken embryo fibroblasts. In general, antibody titres of IS and NIS challenged ducks were significantly higher than their unchallenged counterparts ( $P < 0.05$ ). Non-challenged pre-immunised ducks had a progressive decrease in antibody levels; non-immunised ducks did not seroconvert. Newcastle disease virus was isolated from livers and kidneys of the challenged ducks throughout the experimental period; indicating a possibility of viral excretion, especially when the birds are stressed. It, therefore, provides another possible model of viral circulation within mixed flocks.