

Prevalence of Newcastle disease virus in village indigenous chickens in varied agro-ecological zones in Kenya

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Abstract

It was hypothesized that the agro-ecological zone in which village indigenous chickens were farmed influenced the level of diseases occurrence. One hundred and forty four apparently healthy chickens (71 from lower highland 1, a cold zone and 73 from lower midland 5, a hot zone) were randomly sampled. Oro-pharyngeal and cloacal swabs were collected from each bird and processed for virus isolation in 10-12 day old embryonated chicken eggs. In addition, blood, without anticoagulant was obtained from each bird through wing venipuncture.

Haemagglutination inhibition assay was performed for all sera samples. Prevalence of Newcastle disease (NDV) virus was significantly higher (17.8%) in the dry hot zone (lower midland 5) compared to the cool wet zone (lower highland 1) at 9.9% showing evidence for climate as a risk factor in the occurrence of NDV in village chicken. Female birds had higher mean Newcastle disease viral titers than their male counterparts. All Newcastle disease virus isolates recovered were from healthy appearing birds and were all velogenic. Sero-prevalence was significantly highest ($p < 0.05$) in adult birds (10%) while growers had 5.1% and chicks 2.9%. Apparently healthy appearing birds were reported to be reservoirs of velogenic Newcastle disease virus strains that could initiate endemicity NDV cycles in the village setting.