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Evaluation pneumotropic and viscerotropic Newcastle disease vaccines against replication and shedding Newcastle disease virus in broiler chickens

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Abstract

Vaccination are the most important way to prevent viral diseases in the poultry industry. The aim of study was to evaluate pneumotropic and viscerotropic Newcastle disease vaccines against replication and shedding of Newcastle disease virus (vNDV) in broiler chickens. One hundred forty day-old Ross broiler chickens were purchased and after bleeding from 20 chicks remaining randomly divided into six equal groups, and groups 1,2,3 and 4 vaccinated by B1, colone, vitapest, avinew vaccines respectively via eye drop at 8 days of age and groups 5 and 6 were kept as positive and negatives control groups and inoculated same way by distelled water. All groups except group 6 were challenged via intra nasal-ocular route on day 35 with 0.1 mililiter allantoic suspension containing 10^5 EID_{50}/ml vNDV. Group 6 were inoculated same way by PBS. All groups were observed two times daily and blood samples was collected from all groups on days 1,8,15,35,42 and 49 for determining antibody titers against Newcastle vaccines by hemagglutination inhibition test (HI). On days 2, 5, 10 and 15 after inoculation, 3 chicks were randomly selected from each groups and cloaca and trachea swabs samples were collected from each bird. Then the chicks were euthanized, and trachea, lungs, spleen, kidney, and liver tissues samples were collected for Real time PCR. Results showed virus was detected in the trachea and cloaca swab and tracheal, lungs, kidneys, spleen and liver tissues all vaccinated groups at 2 and 5 days after vaccination was significantly less than unvaccinated challenged control group. It was concluded that pneumotropic and viscerotropic Newcastle disease vaccines produce protective antibody in vaccinated broiler and both vaccines protect broiler flock against clinical signs and mortality and reduce large amount virus shedding from respiratory and intestine tract.

Key words: Newcastle disease virus, Real time PCR, Replication, Shedding, Pneumotropic, Viscerotropic, vaccines

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