

SEROPREVALENE OF NEWCASTLE DISEASE, INFECTIOUS BURSAL DISEASE AND EGG DROP SYNDROME 76 IN DUCKS

M. Geetha¹, S. Malmarugan², A. Manicavasaka Dinakaran³, Vishal Kumar Sharma⁴, Rohit Kumar Mishra⁴ and D. Jagadeeswaran⁴

Department of Veterinary Epidemiology and Preventive Medicine,
Veterinary College and Research Institute,
Namakkal-637 002

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India has 4,000 kilometer long coastline and extensive water shed areas in several parts of the country offer excellent natural habitat of ducks (Gajendran and Kathiravan, 2008). Duck population increased gradually from nine million to 29.96 million during the last thirty years and which is 6.13 per cent of total poultry population in the country (GOI, 2006). In India, duck rearing is practiced as a profitable traditional backyard enterprise and continues the livelihood preposition of several poor rural farmers.

Backyard system of practice exposes the ducks to different weather changes, infectious and non-infectious diseases. Poor husbandry practice and feed quality together with unheard disease problems are the major constrains in the growth of duck farming. Besides these, circulation of infectious agents of poultry diseases among free roaming ducks has been reported to be one of the factors responsible for sporadic outbreaks of poultry disease (Mai *et al.*, 2004). Keeping in this view, the study was aimed to detect the presence of antibodies against Newcastle disease (ND), infectious bursal disease (IBD) and Egg drop syndrome 76 (EDS 76) in ducks.

A total of 183 sera were collected from unvaccinated ducks of all age groups prior to slaughter in retail

outlets in and around Namakkal. The samples were inactivated at 56°C for 30 minutes and stored at -20°C until further screening.

For Haemagglutination Inhibition (HI) test, Haemagglutinins were prepared from ND vaccine strain F and EDS 76 virus (Strain 127) maintained at Department of Veterinary Microbiology, Veterinary College and Research Institute, Namakkal and used as standard antigen for ND and EDS 76 respectively. Standard IBD virus antigen was prepared from bursal tissue of IBD affected birds as per the method described by Jaisunder *et al.* (2007) with slight modification. Positive serum against ND, EDS 76 and IBD was raised against standard antigens and used in the study.

Haemagglutination inhibition test for Newcastle disease, HI test for EDS 76 and quantitative agar gel immunodiffusion test for IBD were performed as per the method described by OIE (1992), Suresh (2000) and Wood *et al.* (1979) respectively.

In the present study, seropositivity against ND was observed in 152 samples (83.06%) with HI titre value ranging as low as 2 to as high as 4096 and all the seropositive birds didn't have signs of

1. Assistant Professor

2. Assistant Professor, Department of Veterinary Microbiology, VC&RI, Namakkal-637 002

3. Professor and Head

4. Final year B.V.Sc., students, VC&RI, Namakkal-637 002

ND. Presence of ND antibodies in ducks was an indication of previous exposure to Newcastle disease virus (NDV), which is in agreement with findings of Otim Onapa *et al.* (2006), who have reported that ducks can be infected with velogenic NDV, they do not show clinical signs but are able to transmit NDV to in-contact chicks. Moreover, Roy *et al.* (2000) was also isolated a velogenic NDV from ducks in a ND outbreak in Namakkal area during the year 1993. Potentially virulent strains of NDV are maintained in duck populations in nature and some of those may be transmitted to domestic poultry and acquire pathogenicity during passages in chicken population as said by Hiroki *et al.* (1998).

Seropositivity against EDS 76 was observed in 156 samples (85.25%) with HI titre value ranging from 2 to 512 and 63.46% of seropositive ducks had HI titre of more than 32, which is in contrast to the report of Senthilkumar *et al.* (2003), who had found that the HI titre against EDS 76 in uninfected wild and domestic ducks as 1:32. All the seroconverted ducks might be exposed to EDS 76 virus but doesn't show clinical signs. Similarly, Jordan and Pattison (1996) also stated that ducks and geese are the natural hosts for EDS 76 virus.

Oladele *et al.* (2008) found that the turkeys and ducks are susceptible to IBD virus, but no clinical disease. In the present study also seropositivity against IBD was observed in two undiluted sera (1.09%) in the absence of signs.

In conclusion, ducks maintained under backyard system of rearing may serve as foci of infection and play a vital role in the epidemiology of ND and EDS 76 in commercial chicken. It is highly essential to introduce vaccination programme along with restricting the movement of ducks in order to prevent the transmission of infectious diseases to commercial chicken.

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