19th World Conference on Infectious Diseases, Prevention and Control December 10, 2024 | Webinar

## Seroprevalence, Risk Factors, and Molecular Detection of Infectious Bronchitis Virus in Chickens in Central Gondar, Ethiopia

Tadesse Mihret Yimam Ethiopia

**Introduction:** Infectious bronchitis (IB) is a highly contagious disease of the respiratory and urogenital tract of chickens, caused by infectious bronchitis virus (IBV), a member of the family Coronaviridae. Due to the serious infectious and transmission features of the disease mostly in the reproductive and respiratory systems it causes potential economic loss.

**Materials and Methods:** A cross-sectional study was conducted from February 2022 to June 2022 on chicken serum and tracheal swab samples from backyard and commercial farms in central Gondar zone, Ethiopia to determine the seroprevalence of IB, associated risk factors and for isolation and molecular detection of the virus. A total of 384 blood samples were collected and tested by an indirect ELISA

**Result:** Anti-IBV antibody positivity was noted in 92.19% (95% confidence interval (89 % -94.6 %) of the samples. Logistic regression analysis was performed to determine the impact of possible risk factors on seropositivity. Higher prevalence was noted in young chickens than in adults (p< 0.05) and in exotic breeds than in local breeds (p< 0.05). Though the difference was not statistically significant (p>0.05), higher prevalence was obtained in dual purpose chickens (93.75%) than in layers (92.17%) and broilers (90.98%). Higher prevalence was also noted in females (92.7%) than in males (90.98%) and in intensively managed chickens (93.39%) than in extensively

managed chickens (90.69%) with p>0.05. Conventional RT-PCR test was also performed for the molecular detection of virus. The test was done on 52 tracheal swab samples collected from intensive and backyard unvaccinated chickens that were pooled in to 26 samples. Accordingly, 3 (11.54%) of the 26 pooled samples were IBV positive. The result showed that this was the first molecular evidence found in the study area.

**Conclusion and Recommendations:** The sero prevalence of the disease in this study was very high for all age groups, breed types, and farm types. Vaccination and biosecurity measures are advised to manage the disease. Identification and characterization of persistent IBV serotypes that are present in the field is also recommended to manage the disease.

Key words: IBV, Seroprevalence, Molecular detection, Central Gondar, Virus Isolation

## Biography

Tadesse Mihret is a researcher specializing in veterinary medicine and avian diseases, with a particular focus on infectious bronchitis (IB) in poultry. His research explores the epidemiology, molecular detection, and seroprevalence of infectious diseases affecting chickens, contributing valuable insights to poultry health management and disease control strategies.