

INCIDENCES OF INFECTIOUS DISEASES IN DESI BIRDS
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Abstract: This study was undertaken to record the incidences of various infectious diseases in desi birds in Tirunelveli district of Tamilnadu from 2014-2016. This study was conducted in 160 samples from desi birds received at VUDDL, Tirunelveli suspected for various disease conditions in different parts of Tirunelveli district. Samples received from the infected and or dead birds were subjected to further studies based on the history, clinical findings and postmortem lesions. The samples which were suspected for bacterial and fungal origins were aseptically inoculated into the suitable culture medium. The samples which were suspected for virus origin were aseptically processed and subjected for suitable serological and cultivation techniques. Overall, the incidence of Newcastle disease (ND) was found as the highest 38.12 % followed by *Escherichia coli* infection 35%, *Klebsiella* spp infection 13.75%, Salmonellosis 5%, Fowl cholera 3.75%, Clostridia infections 2.5% and Candida infection 1.87%.

Keywords: Infectious diseases, Incidence, Desi birds, Tirunelveli district.

Introduction

In India poultry farming is notable for its production of meat, eggs and employments for rural people. The total poultry population in the country has increased by 12.39% over the previous census and the total poultry in the country is 729.2 million numbers in 2012 as per the 19th livestock census in India. Many progressive farmers start the native or desi chicken farming to promote their market in the poultry industry. There are many constraints in native chicken farming but the main component is biosecurity and disease management. The major threat to desi birds includes new castle disease, collibacillosis, infectious bronchitis, avian influenza, salmonellosis, infectious coryza, coccidiosis, enteritis and fowl pox [Ahmad *et al.*, 2008]. This paper is to document the incidence of infectious diseases in desi birds in the tropical climate region at Tirunelveli district, Tamilnadu, India.

Material and methods

160 samples received from the infected and or dead birds suspected of infectious origin during 2014-2016 at VUDDL, Tirunelveli were subjected to further studies based on

the history, clinical findings and postmortem lesions. The samples which were suspected for bacterial and fungal origins were aseptically inoculated into the suitable culture medium. Nutrient agar, Macconkey agar, EMB agar, sheep blood agar, BHI agar, Clostridial agar, Egg yolk agar and XLD agars were used as primary culture media for isolation of bacterial organisms, SDA agar and Candida agars were used as primary culture media for isolation of fungal organisms from the samples according to the methods described by Quinn *et al.* [1994]. The growths in the medium were confirmed based on the cultural, morphological and biochemical characterization [Barrow and Feltham 1993]. The samples which were suspected for virus origin were aseptically processed and subjected for the suitable serological and cultivation techniques.

Results and Discussion

Out of 160 samples tested the incidence of Newcastle disease (ND) was found as the highest 38.12 % (n=61), followed by Escherichia coli infection 35% (n=56), *Klebsiella* spp infection 13.75% (n=22), Salmonellosis 5% (n=8), Fowl cholera 3.75% (n=6), Clostridial infections 2.5% (n=4) and Candida infection 1.87 % (n=3). Newcastle disease (ND) is a major constraint to village poultry production throughout developing countries, frequently causing mortality rates of 75 per cent to 100 per cent in unvaccinated flocks. The greatest impact of ND is seen in the village poultry production [Spradbrow, 1993]. Village chickens act as reservoirs of virulent NDV and possess continuing threat to poultry population throughout the world [Alexander, 2003]. Avian colibacillosis was the major bacterial infection in poultry found widely prevalent in all age groups of birds [Rahman *et al.*, 2004]. The disease affects young and old chickens, and mortality is more severe in younger birds [Kabir *et al.*, 2010].

This study reports high (22%) incidence of *Klebsiella* infection in desi birds. The higher prevalence of *Klebsiella* spp., 47.1% from a total of 257 broiler chicken was recorded by Turkyilmaz [2005]. Popy *et al.* [2011] reported 6% of *Klebsiella* spp infection from a total of 50 dead chicken samples. *Klebsiella* spp. has been frequently recovered from birds in which it functioned as a primary pathogen secondary invader in immunosuppressed and stressed birds [Younis *et al.*, 2016]. The role of *Klebsiella* spp in poultry health and public threat need to be explored. Salmonellosis is common in all species of birds, the outcome of infection depends on a variety of factors, including age, stress, host species susceptibility, and bacterial virulence. Fowl cholera is a septicaemic disease of domestic and wild bird's occurring worldwide which is characterized by high mortality leading to significant losses for poultry

industry caused by Gram negative *Pasteurella multocida* [Hansen and Hirsh, 1989]. In conclusion, diversified diseases are prevalent in desi birds due to inadequate vaccination, feeding and housing strategies. Thus, proper management, vaccination practices and biosecurity practices are highly essential to control the infectious diseases like ND is highly essential for the betterment of commercial as well as backyard poultry production.

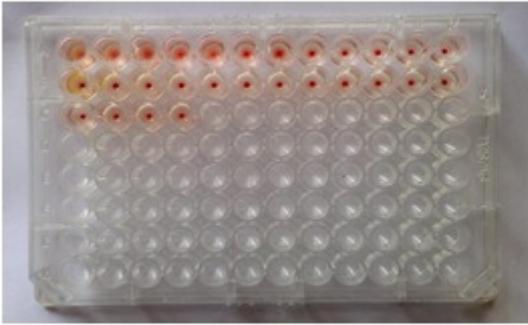
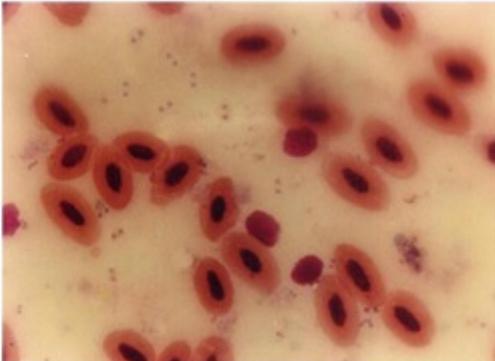
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Figure 1: HA-HI test for ND diagnosis	Figure 2: Metallic sheen & Mucoïd colonies in EMB agar
	
Figure 3: <i>Salmonella</i> growth in XLD agar	Figure 4: Bipolar organisms in heart blood smear
	
Figure 5: <i>Clostridium perfringens</i> - Naglers reaction	Figure 6: <i>Candida</i> growth in candida agar
	