

PREVALENCE AND RISK FACTORS ASSOCIATED WITH AVIAN LEUCOSIS IN CHICKEN IN NAIROBI AND ITS ENVIRONS

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INTRODUCTION & LITERATURE REVIEW

- Estimated poultry population 31 million (KNBS, 2010).
- Economy - 20 tonnes of poultry meat worth Kenyan shillings (Kshs.) 3.5 billion and 1.3 billion eggs worth Kshs. 9.7 billion (MOLD, 2010).
- Major losses in poultry in Kenya are due to:
 - Viral diseases – NCD, IBD
 - Bacterial diseases – Fowl typhoid, pasteurellosis
 - Parasitic diseases – Coccidiosis, helminthiasis
 - Neoplastic conditions – Leukosis, Marek's (DVS reports, 2002; Njagi *et al.*, 2010).

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- Treatment and control - specific medicaments or via vaccinations;
- unlike avian leukosis – no specific treatment or vaccine so far.
- Common neoplastic diseases of poultry; are
 - Avian leukosis,
 - Marek's disease,
 - Reticuloendotheliosis (Hafez, 2011).
- Avian leukosis is an insidious, important and commonest neoplastic disease of chickens (Fadly, 1990).

INTRODUCTION & LITERATURE REVIEW

- Outbreaks of avian leukosis have been reported worldwide and are a major cause of serious economic losses to the poultry industry.
- However, its prevalence in our Kenyan locality is unknown.
- Negative impacts of the disease on chickens include;
- reduced growth, unevenness of growth rates within flocks, and a greater susceptibility to developing serious disease when challenged by immunosuppressive viruses or secondary bacterial invaders (Bagust *et al.*, 2004).

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Definition - AL is an oncogenic disease caused by leukosis/sarcoma group of avian retroviruses (avian leukosis viruses or ALVs).

- Discovered in Copenhagen - 100 yrs ago (Burmeister, 2001).
- AL is associated with neoplastic lesions in various poultry organs.

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Aetiology

- ALV Genus *Alpharetrovirus*; subfamily *Orthoretrovirinae*; of the family *Retroviridae*.
- Six subgroups; A, B, C, D, E, and J (Cheng *et al.*, 2010).

Transmission

- Horizontally and vertically (Hatai *et al.*, 2008).
- Endogenous subgroup E is transmitted through Mendelian inheritance (Silva *et al.*, 2007).

INTRODUCTION & LITERATURE REVIEW

Clinical manifestations

- Clinical manifestations are nonspecific (Latif and Khalafalla, 2005).
- It causes low productivity, unthriftiness, reduced and uneven growth in a flock, pale carcasses, immunosuppression, disease susceptibility, and death (Bagust *et al.*, 2004).

INTRODUCTION & LITERATURE REVIEW

- Neoplastic lesions may present as various leukoses;
- Grossly: AL tumors are:
 - Nodular, miliary or diffuse and involve various organs
 - Soft, smooth, glistening;
 - Cut surface - grayish to creamy white (necrotic areas)
- Microscopically - Focal and multicentric in origin with coalescing foci and aggregates of proliferating lymphoblasts (Saif *et al.*, 2008)