

SESSION 7: Important Animal Viruses in The Kenyan Context

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Organizer: Dr. Joseph Macharia

Chair: Dr. Kitala

ORAL PRESENTATIONS

1. Rift Valley Fever outbreaks, Always Ahead? A review of Previous Rift Valley fever Outbreaks

Dr. Jacqueline Kasiiti Lichoti (BVM, MSC (virology))

Ministry of Livestock Development, Department of Veterinary Services

Abstract

Rift valley fever is one of the most significant zoonotic disease problems in Kenya. The haemorrhagic human disease syndrome generates a high degree of panic among the human populations at risk. Persistence of the virus between outbreaks has remained unclear over the years. Since the first encounter of RVF in 1912, outbreaks of RVF have continued to occur in 5-15 year cycles with sporadic infections in between the cycles. In the last two outbreaks (1997-1998, 2006-2007) the disease was first recognised in humans when the disease was already established in animal populations. Despite the cyclic nature of the disease and prediction, outbreaks have always occurred with devastating effects to the humans and the economy of the livestock producing areas due to loss of livestock and trade bans. Impact assessment of RVF disease during the 1997/98 and 2006/2007 RVF epidemic in East Africa led to a cessation of the lucrative trade in small ruminants to Middle East countries and the losses were estimated at

US\$ 250-350 and US\$ 51,867,512.7 million respectively, excluding value of human lives lost. Poor record keeping has denied the learning of lessons from previous outbreaks thus response has been re-inventing of the wheel over and over again. In Kenya where RVF is considered endemic successful control would entail early detection through sentinel herd surveillance, active surveillance, community involvement through participatory epidemiology and timely laboratory diagnosis. In case of an eminent outbreak, timely vaccination of animals, vector control and overall political support for financial allocation and release is key to control. The control of RVF in livestock beforehand is key to control. There is need for collaboration among all the stakeholders involved in the study or control of RVF to work together and share information on their findings and wider consultations on filling in gaps in knowledge.

2. Diagnosis of Highly Pathogenic Avian Influenza and Newcastle disease in Kenya

Dr Jane W. K. Githinji

Central Veterinary Laboratories, Kabete, Kenya

Abstract

The outbreaks of highly pathogenic avian influenza (HPAI) H5N1 since the Hong Kong outbreak in 1997 have been recorded in Asia, Europe, Middle East and Africa. The threat of introduction of HPAI H5N1 into Kenya is real, especially considering that the country lies along the migratory bird flyways. The threat of introduction of HPAI caused a major scare in the country in 2006. During the scare, an increased number of samples were submitted to the laboratory not only from samples collected from domestic birds but also wild birds. HPAI has not been reported in Kenya so

far. Newcastle disease virus (NDV), which is endemic in Kenya, can only be differentiated from HPAI by laboratory methods. Effective surveillance to ensure early detection of notifiable avian influenza (NAI) followed by a rapid mitigating response remains a prerequisite to averting the socio-economic impact of an outbreak of HPAI in Kenya. Despite this, specimen submissions to the laboratory for NDV diagnosis have been inconsistent since the 2006 scare, thereby compromising on the chances for early detection of HPAI. This paper highlights some of the challenges

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and strategies in the diagnosis of HPAI at the central

veterinary laboratories in Kabete, Kenya.

SESSION 7: POSTER PRESENTATIONS:

1. Bovine Malignant Catarrhal Fever: Using Next Generation Molecular Tools To Understand The Prevalence Of An Old Disease

Dr. Lillian Wambua

University of Nairobi, School of Biological Sciences

Background: Bovine malignant catarrhal fever (BMCF) is an acute viral disease affecting cattle in both developed and developing countries, posing a serious threat to animal productivity and food security. BMCF causes catastrophic losses to livestock farmers as 90 - 100% mortality occurs in affected cattle herds. There is currently neither a cure nor a vaccine for BMCF and treatment is only supportive. BMCF is caused by three viruses; Alcephaline herpes virus 1 (AHV-1) and Ovine herpes virus 2 (OvHV-2), and Caprine herpes virus (CpHV-2). Wildebeest, sheep and goats are asymptomatic reservoirs for AHV-1, OvHV-2 and CpHV-2 respectively, whereas cattle are susceptible to infection by all three BMCF viruses.

Objectives: The present study aims to: i) Investigate the prevalence and distribution of BMCF disease in cattle in Kenya by using reliable molecular tools

thereby availing empirical evidence of the burden of BMCF disease in the country ii) Identify the important reservoirs of BMCF viruses in Kenya, by analyzing the repertoire of BMCF viruses present in both cattle and potential reservoirs and iii) Decipher evolutionary relationship of the BMCF viruses in Kenya relative to other global isolates of the virus, thereby providing clues into possible routes of introduction and transmission of the infection into or out of the country.

Expected outputs and outcomes: The results of this project will not only inform disease surveillance activities but will also influence formulation of national policies on livestock management. Future studies on vaccine and chemotherapy against BMCF will also be greatly influenced and directed by solid knowledge on the prevalence and genetic diversity of BMCF viruses in the country, generated by this study.