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## Outbreak investigation and molecular characterization of African horse sickness virus circulating in some selected areas of Ethiopia

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This study was conducted in June 2011 to April 2012 in central, northern, southern and south western parts of Ethiopia. The objectives of the study were to investigate outbreaks of African horse sickness, assess associated risk factors and characterize the circulating serotypes of African horse sickness virus by using quantitative real-time RT-PCR. The indigenous knowledge of equine owners about AHS in the study areas from 72 respondents were assessed through a structured questionnaire format was analyzed. A total of twelve outbreaks were investigated in the study period. Whole blood samples were collected in EDTA for virus isolation, identification and serotyping from diseased horses and mules showing typical signs of the AHS. Virus isolation on Vero cell and identification of AHSV genomes using conventional RT-PCR were conducted at NVI, Debre Zeit, Ethiopia. Samples were also sent for further serotyping were done at Non-vesicular Laboratories of IAH, Pirbright, UK. During the outbreaks, 116 equines (86 horses and 30 mules) were affected from which 44 deaths (24 horses and 20 mules) were recorded. During the active outbreak investigation, all of the four forms of AHS were observed with respective proportion of 52.8%, 8.4%, 6.9% and 31.9% cardiac, pulmonary, mixed and mild forms of AHS. The questionnaire survey showed that from the total 72, only 23 (32%) were aware of the disease. Statistically significant differences was observed in the occurrence of AHS between stabling during the night and vaccination ( $P < 0.05$ ), however, the variation between the age groups and sex were not statistically significant ( $P > 0.05$ ). From the 72 samples collected from active cases suspected of AHS and processed for serotyping, only 16 of them were able to be serotyped and all of them were found to be African horse sickness virus-9. Serotype 9 of AHSV is predominant virus circulating in different parts of Ethiopia. In some vaccinated equines against serotype 9 of AHSV were affected by the disease. So, further study on molecular characterization of the field isolate and their relationship to vaccinal strain is recommended for development of bi or polyvalent vaccines for all AHSVs.

### Biography

Samuel Derso Tezera has completed his Doctor of Veterinary Medicine at the age of 23 years from Mekelle University and Post Graduate studies from Jimma University School of Veterinary Medicine in Epidemiology. He is the Director of Clinical Medicine, in the University of Gondar. He is working in the position of Assistant Professor in the University for doing research, serving the communities and teaching.

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