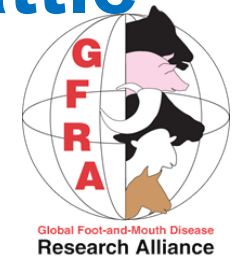


Serological and Genetic Characterization of Foot and Mouth Disease Virus isolated during cross sectional surveillance studies in Cattle from Uganda during 2014



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Introduction



- Foot and Mouth Disease (FMD) is the most contagious disease of cloven footed animals
- Five (5) of the seven (7) serotypes (SAT 1, 2, 3 types, O types and A types) are presently circulating in East Africa
- Vaccination and quarantine are among the methods being used to control the spread of the disease



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Introduction cont...



Introduction cont...



- Amongst the different serotypes, the FMD virus (FMDV) circulates as geographically distinct topotypes
- E.g. in Eastern Africa serotype O, topotypes EA 1-4 exist and for SAT 2 topotypes IV, VII and IX
- A vaccine that provides protection for one topotype may not provide immunity against another topotype
- It is therefore essential to characterize the current FMDV circulating in Uganda in order to design efficacious vaccines suitable for the country



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Objective of the study

- Serological and genetic characterization of FMDV circulating in selected districts of Uganda

Methods

- Serum (4545) and oral-pharyngeal fluid samples (1300) were collected from cattle from 22/80 districts in the northern, eastern and central regions of Uganda
- Sera were analyzed by the presence of NSP
- Nucleotide sequences were determined for the P1 region to establish the FMDV serotypes and topotypes



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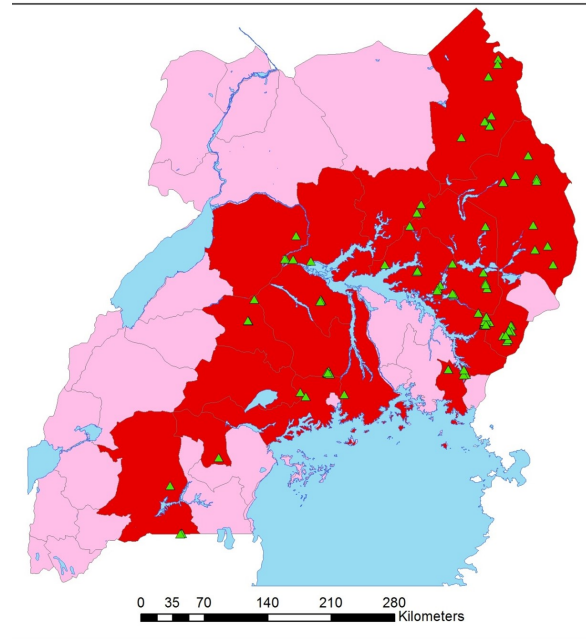


Methods/ (Study Area)



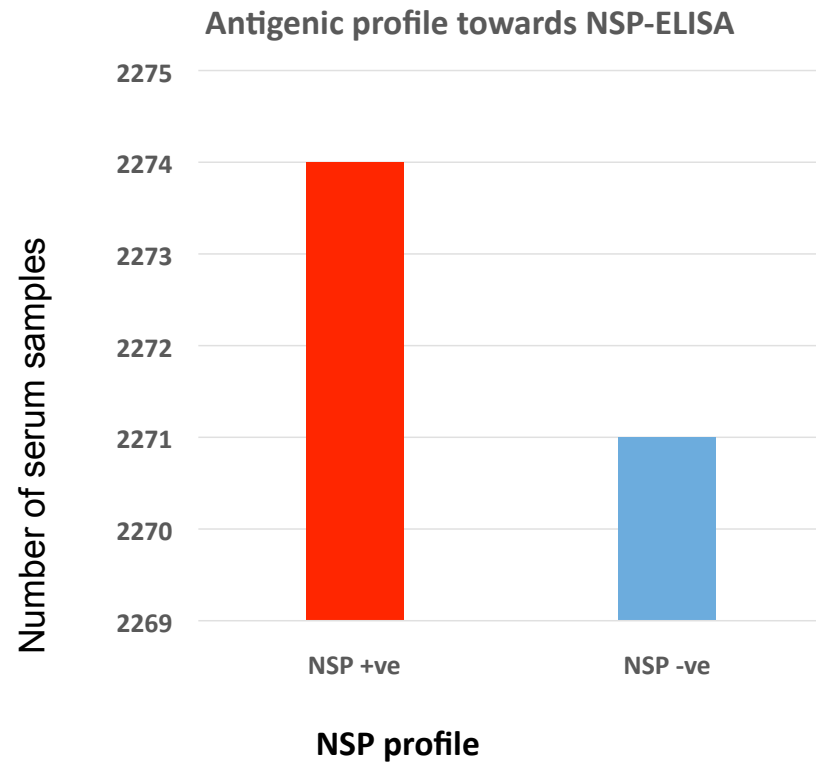
Sera was collected from 4545 cattle from 22 out of the 80 districts in Uganda.

GPS ▲ sampled points in Uganda



NSP ELISA Results

- Positive cattle sera samples to the 3ABC ELISA kit (Prio Check; Prionics).
- >50% (2274/ 4545) of the serum samples collected from cattle were positive towards NSP antibodies.



Results/Summary



- FMD is prevalent in Uganda.
- 50% (2274/ 4545) of the serum samples collected from cattle were positive towards NSP antibodies.
- From this preliminary study, characterization of FMDV circulating in Uganda using serotype specific ELISAs and genome sequencing is recommended



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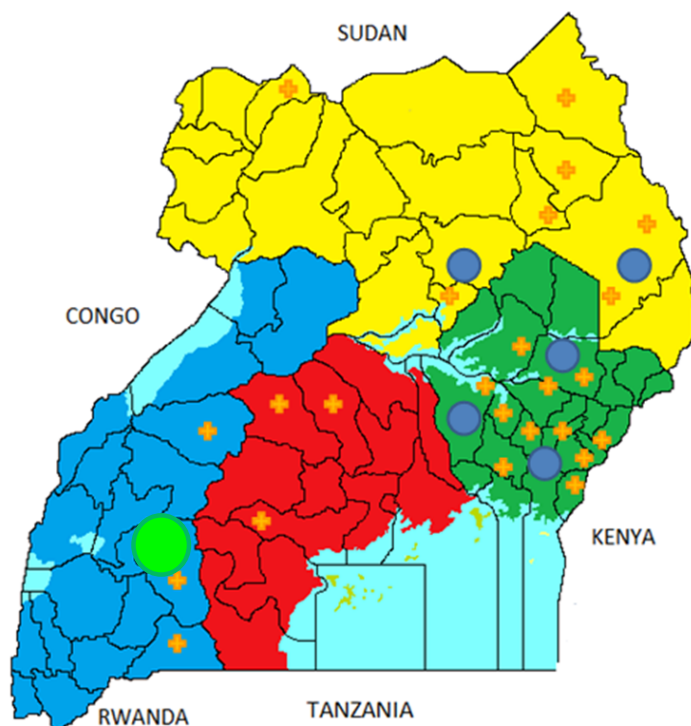
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Methods cont... (collection of samples)



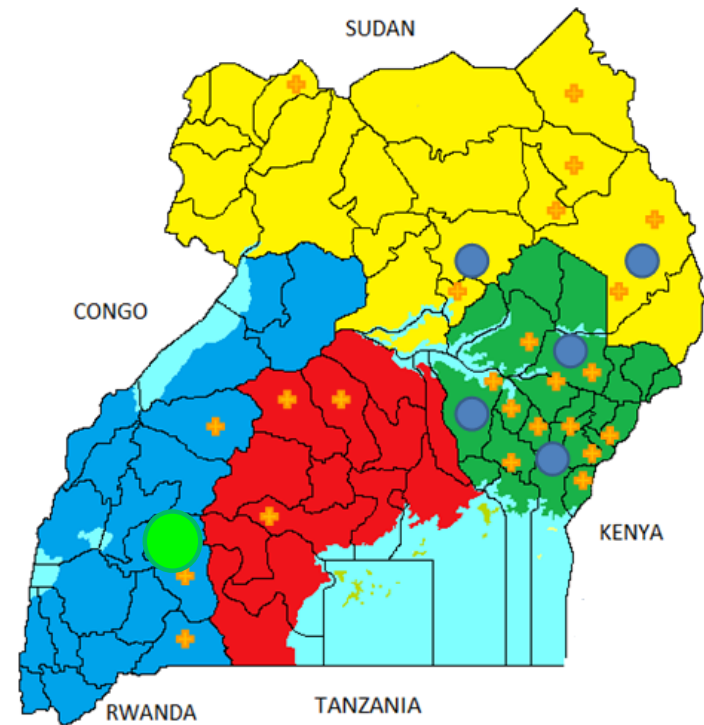
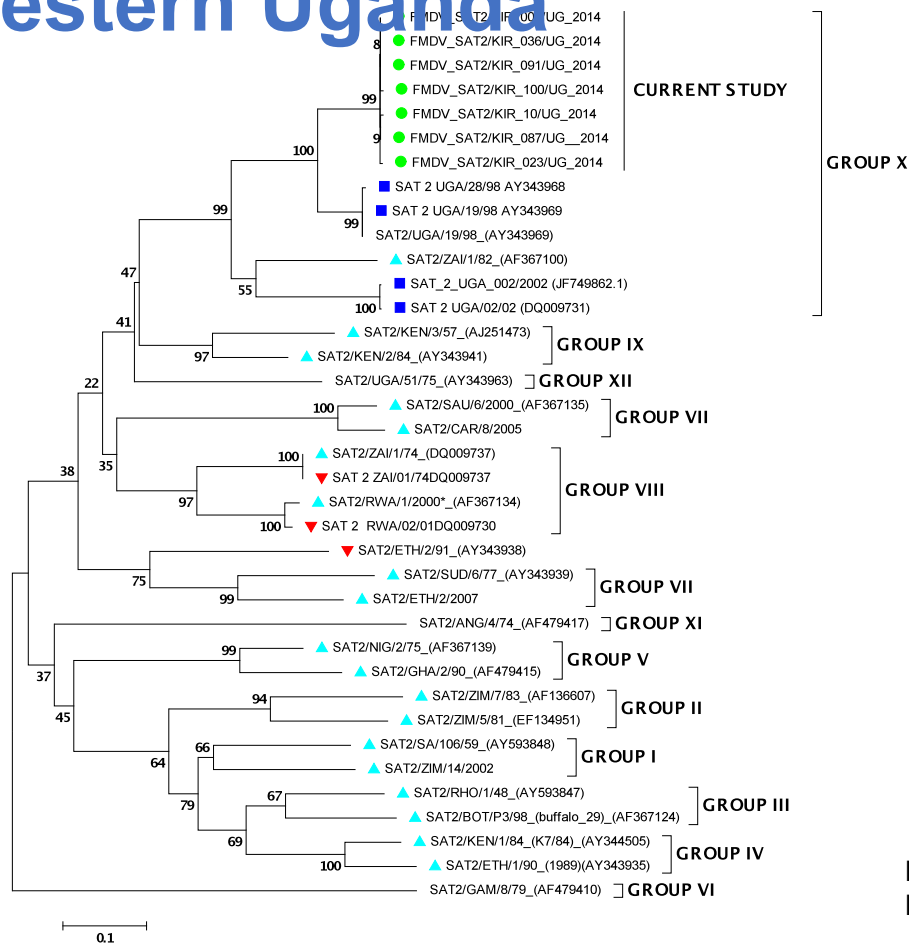
Methods cont... (Study Area)



➤ 25 representative districts from four regions of Uganda were sampled

-  Northern Uganda
-  Western Uganda
-  Central Uganda
-  Eastern Uganda
-  Districts sampled

Results: Serotype SAT-2 isolated in western Uganda



Phylogenetic analysis of FMDV serotype SAT2 isolated from Western Region of Uganda during 2014

Summary

- FMDV type-SAT-2, topotype X and type-O, topotype EA-2 were characterized from disease outbreaks in 2014
- This study provides knowledge about the geographical distribution of FDMV in Uganda
- These field circulating FMDV serotype O and SAT 2 viruses will assist in antigenic matching studies to devise improved FMDV control strategies with vaccination and for vaccine strain selection for Uganda



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Thank you for Listening!