

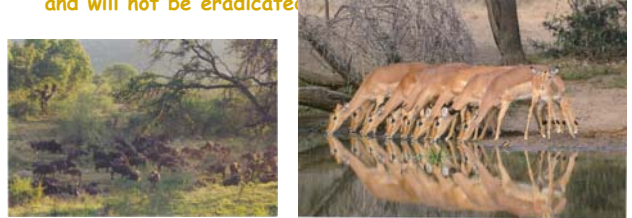
Foot and mouth disease epidemiology and research needs in the Greater Limpopo Transfrontier Conservation Area (GLTFCA)

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Introduction

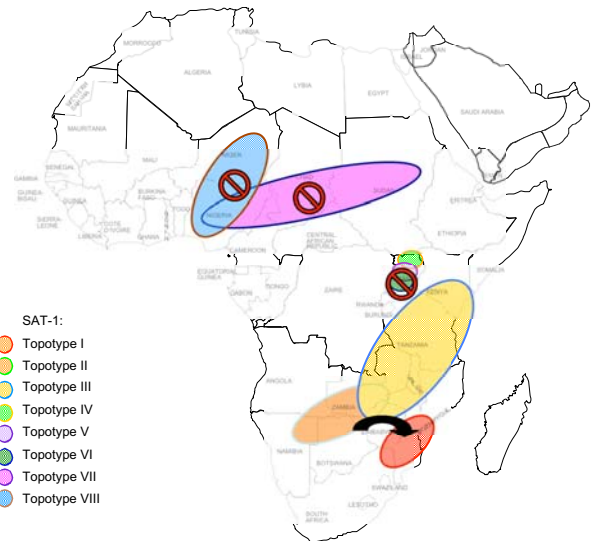
- Epidemiology of FMD complex on the African continent
 - 6 of 7 serotypes occur
 - Distribution of serotypes differ
 - Wildlife play an important role in maintaining the disease and will not be eradicated in the future



Molecular epidemiology of FMD in Africa

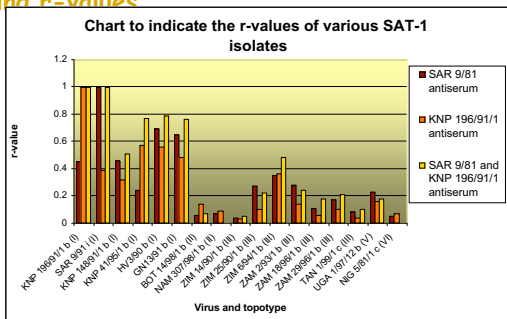
- For all serotypes geographically distinct genotypes / topotypes occur, but the current status in most regions is not known

Serotype	Number of topotypes identified to date	SAT-16S	SAT-214S	SAT-360



Antigenic variation between various topotypes

- SAT-1 vaccine strains from southern Africa were compared to isolates from the various topotypes using r-values



Threats posed to the GLTCA by FMD

- Inside the GLTCA there will be little threat to animal life because SAT-types 1-3 are historically prevalent
 - On the other hand, it will inhibit the exploitation of wildlife resources (e.g. sale of game meat etc)
- However, FMD will continue to threaten livestock-owning communities outside the CA and inhibit rural development based on livestock enterprises: This is not new
- What is new is that international trading standards are changing and there are now possibilities which did not exist 2-3 years ago

What are the changes?

- Still true that access to regional and international markets is dictated by being able to prove that the country or zone of production is free from FMD
- A new dimension has been provided by international acceptance of "compartmentalisation"
- Furthermore, it is increasingly being accepted that, in reality, safe trade is dictated by two primary factors:
 - the commodity
 - the target market (i.e. the standards set by the importer -these vary)

What are the changes (cont.)?

- In particular, it is possible to simplify & improve FMD control in areas adjacent to the GLTCA
- More importantly, this approach can be used as a driver of rural development involving livestock



• Commodity based trade

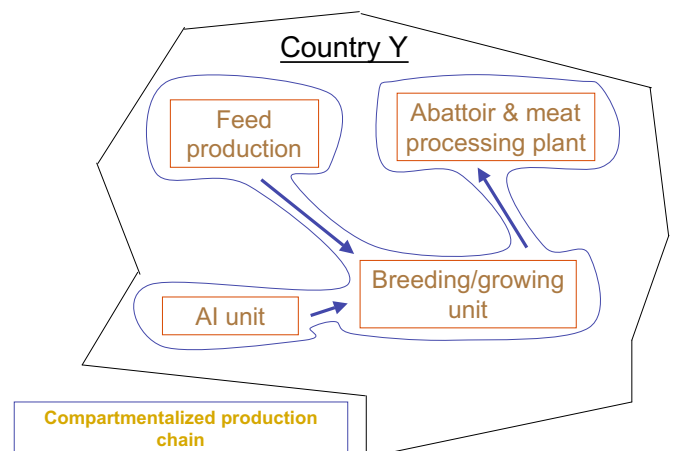
Definition: A system for ensuring that exported livestock commodities do not pose more than acceptable risk for spreading human or animal diseases. In some cases this can be irrespective of whether dangerous infections (e.g. FMD) occur in the area of production & processing or not



What are the changes (cont)?

- Different commodities pose inherently different risks and, especially where processing is involved, risks of dangerous animal & human pathogens can be abrogated or at least reduced to acceptable risk levels (concept of commodity-based trade)
- For FMD specifically, it is also now accepted that freedom from infection can be achieved in livestock populations through vaccination. This opens an avenue for FMD control that has not been exploited in southern Africa although it has been elsewhere in the world (e.g. European Union)
- These developments open the way to new approaches for lessening the impact of FMD on rural

Compartmentalization



▪ An array of alternatives can be used individually or in combination to ensure that the production and processing of a particular commodity can be managed so that identified hazards are reduced to acceptable risk levels

▪ This can include use of disease-free zones, compartments and/or commodity processing, i.e. any combination of appropriate measures to reduce the risk associated with a specific commodity to acceptable levels

How is this possible?

- Some animal products do not transmit particular animal disease e.g.
 - milk does not transmit BSE
 - matured, deboned beef from which LNN are removed has a low risk of transmitting FMD, rinderpest or RVF
- Processing (cooking, pickling, removal of specific tissues etc.) can decisively reduce risk of pathogen transmission
- Riltana is accepted as a safe



Processing often involves beneficiation with employment creation!

However, there are two critical issues that need to be attended to:

1. Standards - responsibility of OIE
2. Credible certification - developing countries especially need to address this issue seriously



The problem of standards

- Code has some standards for commodities but these are inadequate
 - no recognition of the complex processing of some commodities (only heating covered)
 - standards are disease specific, i.e. not commodity-specific
- OIE in process of moving towards developing more comprehensive commodity standards
- Commodity approach provides an opportunity to expand livestock based trade without the need to eradicate diseases (however, that

The problem of certification

- Needs to be looked at in a fresh light
- Arguably certification by the *veterinary administration* alone does not make sense and is not credible to importers - analogous to students marking their own exam papers
- Clearly the *veterinary administration* has an important role but some independence needs to be introduced (contentious issue)
- Particular problem in relation to commodity processing - certification of industrial processes

Summary

- **Technical/scientific aspects need research**
 - Topotype diversity
 - Mode of transmission between buffalo and other susceptible animals
 - Improved vaccines
- **Investigate new opportunities to lead the initiative towards developing efficient and effective animal disease control integrated with development goals**
 - Compartmentalisation
 - Commodity based trade
 - Integration of FMD control with rural development initiatives
 - Possibilities for exploitation of commodities derived from wildlife (e.g. from the GLTCA)

