Title of the presentation: The FMD virus pools and Regional programs

Subtitle: Virus Pool 6, Southern Africa

Name Surname: Misheck Mulumba et al
FMD in the SADC region

- CVO’s of SADC region identified FMD as a disease of strategic importance at Pretoria I (2003) and II (2006)

- Adversely:
  - constrains market access for livestock commodities
  - hinders efforts aimed at regional integration
  - affects livelihoods and food security needs of the population

- FMD as a TAD is unique because of the implication of wildlife, especially the African buffalo syncerus caffer in the epidemiology

- Even then, transmission of virus from buffaloes to cattle has been shown to be inefficient
Epidemiology is influenced by two different patterns:

- A cycle in which wildlife is implicated in maintaining and spreading the disease to other susceptible domestic animals and wild ungulates (suspected to be most predominant in the SADC region)
- A cycle that is maintained within domestic animals independent of wildlife

Most recent outbreaks in Pool 6 have implicated SAT 1 and 2

Unclear how serotypes A and O are maintained in the northern part (Tanzania) of the region
Continual viral circulation and evolution within the 3 African Regional Pools

Pool 4
SAT 1,2,3
A,O

Pool 5
A,O, SAT 1,2

Pool 6
SAT 1,2,3
FMD VIRUS CIRCULATION

• Knowledge of circulating FMD viruses in wild buffalo populations is key to understanding the epidemiology of FMD in the SADC region
  • Such knowledge also has implications on control strategies for the region
• This knowledge was until recently not readily available for most countries in the region
• AfDB-financed SADC TADs project commenced wide-scale sampling of wild buffalo populations in region’s national parks 2 years ago. Surrounding cattle pops also included in the sampling
• Collaborating with BVI, OVI and WRL for FMD (Pirbright)
• Since then > 1,400 buffalo and cattle serum and probang samples have been collected
• Exercise will run for one more year under the project before countries take over the annual sampling
FMD VACCINE

• The only source of vaccine in the region is BVI
• Between 2008-2010 working closely with EU SADC FMD project BVI conducted field trials in Malawi, Botswana, and Namibia to evaluate the effectiveness of vaccine and vaccination
• Result:
  • new recommendations on frequency of vaccinations
  • Increase of the payload in the vaccine for use in some areas
  • Training for countries on post vaccination monitoring
• Recently BVI embarked on expansion and improvement process that has culminated in additional modern facilities being commissioned.
• BVI started production of purified vaccine in 2010 and will be launching antigen banks by 2012
PCP STAGES

STAGE 0: Identify risk and control options
FMD risk not controlled. No reliable information.

STAGE 1: Implement risk-based control
FROM 0 to 1 Comprehensive study of FMD epidemiology planned.

STAGE 2: Implement control strategy to eliminate circulation
FROM 1 to 2 Risk-based FMD control plan.

STAGE 3: Maintain zero circulation & incursions
FROM 2 to 3 Develop aggressive strategy to eliminate FMD.

STAGE 4: Maintain zero circulation & incursions; withdraw vaccination
FROM 3 to 4 No endemic FMD in domestic livestock.

STAGE 5: Free without vaccination
Apply for official status (OIE): 'free WITHOUT vaccination'.
Apply for official status (OIE): 'free WITHOUT vaccination'.

Legend:
- Yellow: Stage 1: Implement risk-based control
- Green: Stage 2: Implement control strategy to eliminate circulation
- Green: Stage 3: Maintain zero circulation & incursions
- Dark Green: Stage 4: Maintain zero circulation & incursions; withdraw vaccination
- Orange: Stage 5: Free without vaccination

Free without vaccination
PCP STATUS OF COUNTRIES IN THE REGION

• SADC Member States that have not yet attained official OIE recognized status with regard to FMD:
  – Angola
  – Malawi
  – Seychelles
  – Zambia
  – Mozambique
  – Tanzania
  – Zimbabwe

• SADC working with OIE/FAO are assisting these countries to progress towards official recognition of FMD freedom with or without vaccination by 2020.
## PCP status of SADC Member States

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Fig courtesy of OIE SRR
TFCAs IN SADC: EXISTING AND PROPOSED

Map courtesy of KAZA
FMD CONTROL

• Based on FMD control status, SADC can be divided into:
  – Beef Exporters to high value markets
  – Non Beef exporting countries

• Main Control options
  – Exporting countries
    1. Fencing
    2. Routine vaccinations
    3. Stamping out
    4. Movement Control
    5. Surveillance
  – Non exporting countries
    1. Movement control following outbreaks
    2. Vaccination usually following outbreaks
    3. Surveillance
HISTORICAL FMD OUTBREAKS IN 3 EXPORTING COUNTRIES OVER 80 YEARS

Fig courtesy G. Thomson
CONTROL INITIATIVES FROM THE RECENT PAST

• SAFMD projects
  – Vaccine issues
  – Wildlife/Livestock interface

• SADC TADs project
  – FMDV circulating in national parks
  – Capacity building in buffalo sampling
  – Capacity building in Surveillance

• AU-IBAR VetGov project
  – Addressing capacity issues to deal with legal framework
MAIN THRUST OF SADC FMD CONTROL INITIATIVES AND STRATEGY

• Pooling of resources to follow PCP pathway for next 10yrs

• Issues include looking at
  – Vaccine effectiveness and improvement
    • New purified vaccine by BVI
    • Better understanding and PVM
  – Better understanding of FMDV circulating at the wildlife/Livestock interface
    • Better management of disease at TFCA interface
    • Quicker reaction to outbreaks

• Promote Commodity based trade
  • Within the region
  • Outside the region
MAIN THRUST OF SADC FMD CONTROL INITIATIVES AND STRATEGY

• Focus is on:
  • Gaining knowledge of virus strains circulating in the wild buffalo population
  • Designing effective vaccination programs in the region
  • Improving early detection and identification of the disease at field level and how this information is speedily relayed to HQ for rapid reaction
MAIN THRUST OF SADC FMD CONTROL INITIATIVES AND STRATEGY

• Definition of and maintenance of common regional minimum standards for improved surveillance in member states
• Improved laboratory diagnosis
• Co-existence of the reality of TFCA’s
• Advocacy for implementation of the commodity based trade (CBT) concept to benefit disadvantaged livestock farmers in areas where the risk of FMD spread is negligible
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THANK YOU

MERCI