

**Isolation and characterization of  
Foot and mouth disease virus in  
Nigeria for possible vaccine  
development**

**By**

**ULARAMU, H.G**

**National Veterinary  
Research Institute, Vom,**

# Introduction

FMD is endemic in Nigeria and most part of sub-saharan Africa

Four of the seven FMD serotypes (types O, A, SAT 1 and SAT 2) are prevalent

In Nigeria the outbreaks of type O and SAT 2 were suspected to be linked with viruses isolated in Sudan

# Introduction: Contd.

- FMD epidemiology in west Africa and Nigeria in particular is complex and effort to control the spread of the virus in this region are complicated because of
- Nonexistent of border control
- The unrestricted movement of nomadic Fulani's across the countries

# Introduction: Contd.

- Poor reporting system and response to disease outbreaks
- Lack of epidemiological data and current genetic characterization of the circulating field viruses and their relationship to vaccine strains been used by some few farmers
- Lack of effective vaccination programme in place

# Objectives

- To establish the circulating FMD serotypes and topotypes in Nigeria for vaccine production
- To understand the complex epidemiology of FMD in Nigeria
- To improve livestock production by reducing mortality due to FMD

# Materials and Methods

- Samples were collected from suspected outbreaks across the country and also cluster points
- Samples were also submitted from the neighbouring country for analysis
- The following samples were collected:  
bovine (epithelial tissues = 79 serum = 1631 probang = 200) porcine (serum = 270)

# Materials and Methods Cont.

- Epithelial tissues were prepared as 10% homogenate
- ZZ-R cell line was supplied by Friedrich-Loeffler-Institute, Germany
- The following tests were carried out on some samples: NSP and RT-PCR

# Results

Species/Type of sample	Number of sample tested	Type of test used	Number negative	Number positive
Bovine Epithelial tissue	5	RT-PCR	2	3
Bovine Serum	1441	NSP	405	1036
Porcine serum	270	NSP	260	10



# challenges

- Lack of reagents and required equipments
- No restriction of cattle movement in region
- Lack of effective regional co-ordination on surveillance and vaccination programmes
- Poor funding of FMD research and training of personnel

# conclusion

- To control FMD in the region it is important to understand the complex epidemiological relationships that are occurring added to the unrestricted movement of animals.
- Effective implementation and vaccination program will require characterization of currently circulating field isolates and continued monitoring to ensure that the vaccine is protective

Thank you for listening