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OIE Sub-regional Representation for North Africa

Regional Strategy and Road maps for Foot-and-Mouth-Disease in North Africa

Regional training workshop on the OIE procedures for the endorsement of national official control programmes with regard to foot-and-mouth diseases (FMD) and peste des petits ruminants (PPR)

Kigali (Rwanda) – 18-20 July 2017



Recente distribution of FMD in North Africa

(1stjan 2015 to 10 feb 2017)



* Data source:
Morocco

FMD in North Africa

FMD serotypes circulating in the North African region since the 1960s

Country	Year	FMD serotype
Algeria	1966, 1990, 1999	O
	1977-2017	A
	2014	O
Libya	1959, 1960, 1962, 1967, 1968, 1972, 1981, 1982, 1983, 1988, 1989, 1994	O
	1979, 2009	A
	2003	SAT2
	2009, 2013	A-O-SAT2
Mauritania	1975, 1976	SAT2
	1997	A
	2000	O
Morocco	1991, 1992, 1999	O
	1977, 1983	A
	2015	O
Tunisia	1965, 1967, 1969	C
	1970, 1975, 1989, 1990, 1994, 1999	O
	1979, 1982, 2017	A
	2014	O

FMD in North Africa

- ❑ The strain (O/ME-SA/Ind-2001 - serotype O) circulated in 2014 in Tunisia and Algeria was introduced into Libya in 2013 – *new serotype in the Maghreb Region coming from Middle East*
- ❑ The sequencing of this new strain showed that it is distant in the phylogenetic tree from the strain (also serotype O) circulated in Libya in the recent past (2010 - 2012)
- ❑ SAT 2 was notified by Mauritania. The last notification of FMD in Mauritania was in 2006

FMD in North Africa

Major key elements

FMD epidemic 2014/2015: the phylogenetic analysis of the viral isolates identified that:

- ❑ There was a unique introduction in North Africa since all Libyan isolates share a common ancestor (Jul 2013);
- ❑ There was a unique introduction from Libya into the so-called “Little Maghreb” (common ancestor beginning 2014);
- ❑ Tunisian field viruses evolved on different branches;
- ❑ Two different introductions into Algeria between the epidemics occurred in 2014 and 2015

FMD in North Africa



Potential pathway of the introduction of FMD strain O/ME-SA/Ind-2001 in Libya in 2013 from the Indian Continent based on the epidemiological investigation carried out by the Libyan Veterinary Authority and subsequent spreading to Tunisia, Algeria and Morocco

Report on FMDV O in Morocco in 2015

Batch: WRLFMD/2015/00030

◆ indicates viruses in this batch

Software: MEGA 6.06

Analysis

Analysis ----- Phylogeny Reconstruction

Scope ----- All Selected Taxa

Statistical Method ----- Neighbor-joining

Phylogeny Test

Test of Phylogeny ----- Bootstrap method

No. of Bootstrap Replications ----- 1000

Substitution Model

Substitutions Type ----- Nucleotide

Model/Method ----- Kimura 2-parameter model

Substitutions to Include ----- d: Transitions + Transversions

Rates and Patterns

Rates among Sites ----- Uniform rates

Pattern among Lineages ----- Same (Homogeneous)

Data Subset to Use

Gaps/Missing Data Treatment ----- Pairwise deletion

Codons Included ----- 1st+2nd+3rd+Non-Coding

No. of Sites : 642

No Of Bootstrap Reps = 1000

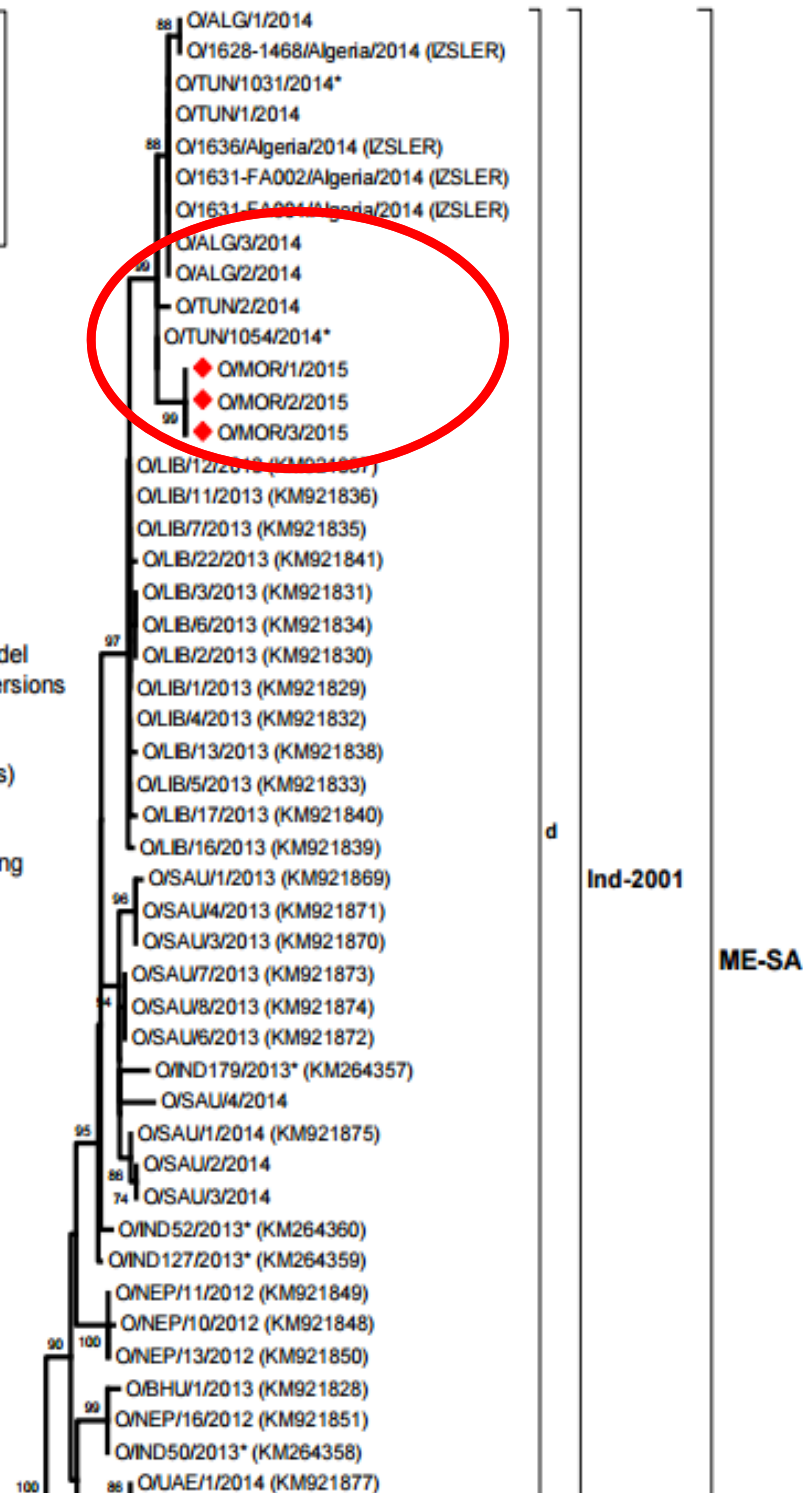
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,
20 November 2015

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FMD in North Africa

Lessons learnt from the 2014/2015 FMD epidemic

- ❑ Difficulties were encountered in controlling animal movements between the countries and within the countries;
- ❑ No financial compensation mechanisms available in Tunisia to implement the stamping-out;
- ❑ Difficulties were faced when dealing with animal traders;
- ❑ Difficulties in having immediate availability of appropriate vaccine for some countries that were ready to pay for it (e.g. Algeria and Morocco);
- ❑ Difficulties in implementing regular active surveillance in the affected countries which is needed in such cases;
- ❑ Challenges related to the political instability in the region

FMD in North Africa

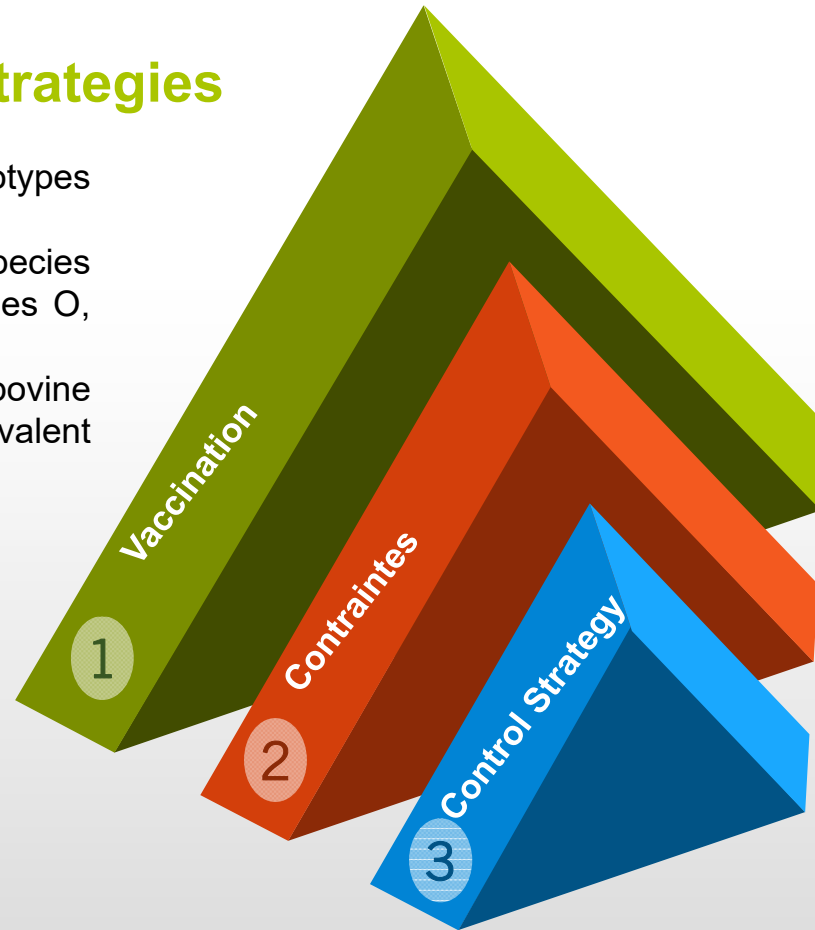
- **Progressive deterioration of the epidemiological situation in North Africa region**
- **Control in North Africa requires a subregional approach, due to the diversity of coexisting epidemiological situations**
- **The OIE encourages countries in the Region to share precise data on the disease and its control via WAHIS**

Conclusion...

Heterogeneous nature of implementation of the control strategy....

Vaccination Strategies

- **Algeria:** vaccinates only BV, serotypes O and A,
- **Tunisia:** vaccinates all species Ruminants (BV, OV, CP), serotypes O, A and SAT2,
- **Morocco:** Vaccination of bovine serotype O, vaccination with bivalent bovine vaccine (July 2017).



Contraintes

- **Sanitary measures:** Irregular application and / or absence of regulatory texts.
- **Animal Mobility:** Unknown Mapping of Transboundary Flows of Animals

Control Strategy: Perspectives

- FMD context in the region generates a complex apprehension of the problem;
- Harmonize the control strategy between the countries of the Maghreb in order to prevent FMD from becoming enzootic.

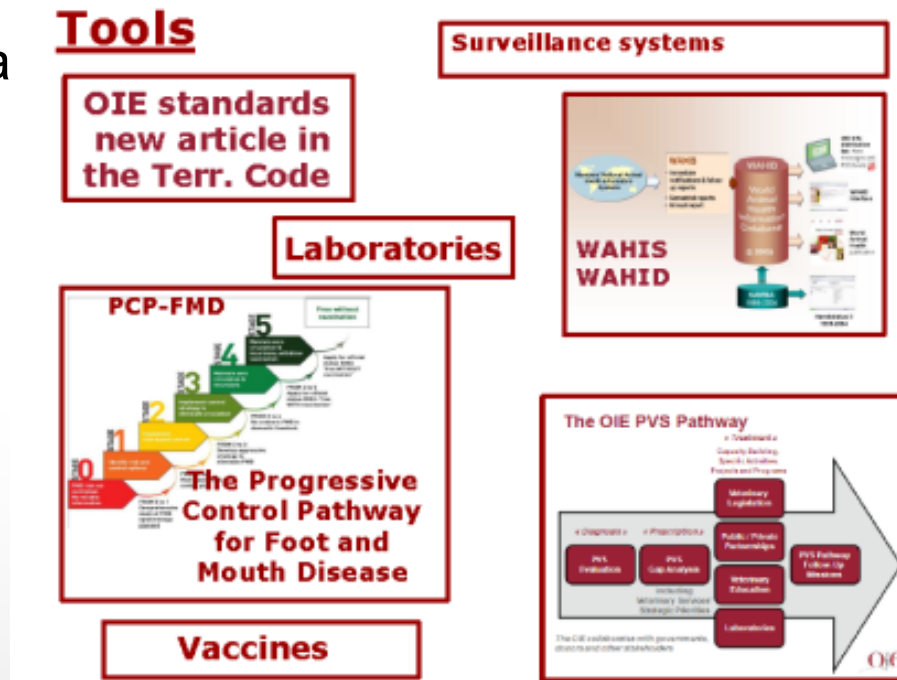
OIE Endorsement of national official control programmes with regard to FMD

-Application forms were done jointly with Tunisia Algeria and Morocco while **respecting the specificities** of the country control programs.

-Several meetings directed by OIE sub-regional representation were held in Tunisia with the participation of **CVOs of 3 countries** for the preparation of the dossiers.

-Endorsement of the control program at the general session in **May 2012**.

-**Annual reconfirmation** in November for the maintenance of the validation of the program



PCP Principles

- Active monitoring for FMD circulation and understanding the epidemiology of FMD
- Appropriate activities in each stage to reduce virus circulation and mitigate disease risk
- Measurable activities and impacts in each stage; generate information and potential benefits to national and international stakeholders
- Optimization of resource use for FMD control



PCP-FMD recognises that:

- FMD freedom may not be the immediate (or even long-term) goal for every country



OIE Endorsement of national official control programmes with regard to FMD

Program performance indicators:

- Clinical surveillance and serological monitoring
- Clinical suspicions cases reported
- Inter-laboratory trials
- Animal identification systems

Significant changes:

- In 2014: New incursion of FMD in the region...
- In 2015: Re-start of vaccination for Morocco...
- Withdrawal of the endorsed official control program for Tunisia and Algeria because the incidence of FMD could not be addressed by the program.





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