

Preliminary Outbreak Assessment

Foot and mouth disease in North Africa

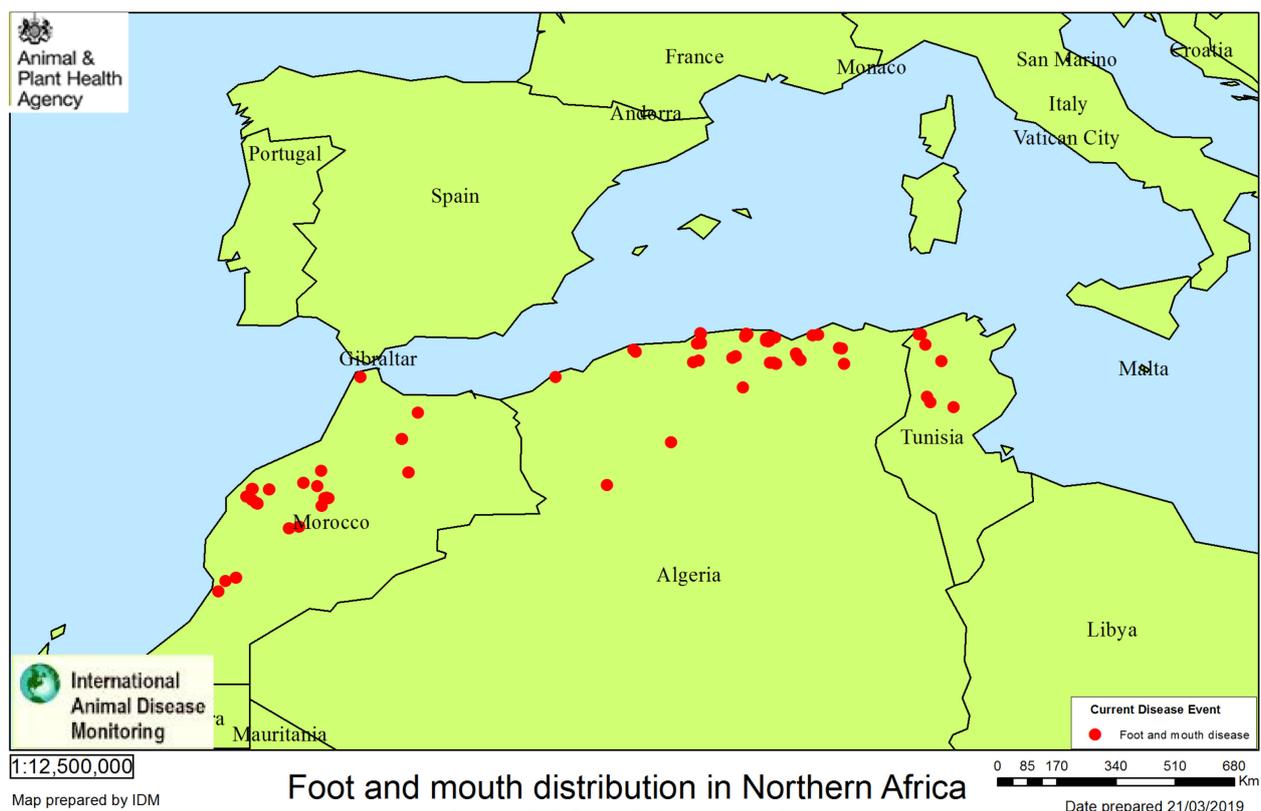
20 March 2019

Ref: VITT/1200 FMD in North Africa

Disease report

Outbreaks of foot-and-mouth disease (FMD) due to the incursion of a new serotype O FMD virus have been reported in Algeria, and more recently in Morocco and Tunisia.

In **Algeria**, since June 2018, 146 outbreaks of FMD Serotype O have been reported (OIE, 2018). All outbreaks were reported in cattle, and in October cases were reported several kilometres from the border with Morocco. New outbreaks of FMD due to serotype O were reported in December 2018 in **Tunisia**, while in **Morocco**, outbreaks due to this FMD serotype were reported in January 2019. The map below shows FMD outbreaks in North Africa since June 2018, with the number of outbreaks by month from June 2018 in each country summarised in Table 1 (below).



FMD virus sequence data generated by international FMD reference laboratories at WRLFMD (Pirbright) and ANSES (France) has characterised the causative virus as belonging to the serotype O/ East Africa 3 (O/EA-3) topotype. Analyses of these sequences shows that these cases are due to a new virus incursion into the region, since the causative FMD virus is distinct to the serotype O (O/ME-SA/Ind-2001d lineage) FMDVs that caused previous outbreaks during 2013-15 in North African countries.

The number of outbreaks by month from June 2018 in each country is summarised in Table 1 (below).

	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019
Algeria	3	34	13	14	16	25	41		
Morocco								19	11
Tunisia							7	5	2

The O/EA-3 topotype originates from East Africa (countries such as Sudan, Ethiopia and Eritrea). It has previously spread to Egypt in 2012 (where it has persisted), Libya in 2012 (one report of disease), Palestine (Gaza & the West Bank; 2017) and Israel (2017) and has also been introduced into West Africa (Nigeria; 2007-2009). Analyses of this new sequence data indicates that the source of disease in North Africa appears to be from West Africa (FAO, 2018) and has been associated with what appears to be an upsurge in FMD cases due to this viral topotype in a number of West African countries during 2018 (including Burkina Faso, the Gambia, Guinea, Mauritania, Senegal and Sierra Leone). In many ways, these FMD virus movements parallel the earlier introduction of the A/AFRICA/G-IV into North Africa during 2017 (Pezzoni, 2019). This raises questions about trans-Saharan connectivity between countries and the precise routes by which FMDV is being spread. The trans-Saharan Highway runs from Lagos in Nigeria directly north to Algiers in Algeria.

Situation assessment

Morocco:

During January and February 2019, 30 outbreaks were notified on multispecies farms where serotyping was only carried for some of the outbreaks with the detection of FMDV O/EA-3 topotype. Another two outbreaks have been reported in March, to date. Previous reports of FMD in the country were in November 2015 due to O/ME-SA/Ind2001d. The precise source of the virus causing these outbreaks is unknown and general control measures were put in place with the vaccination of farms as reported as following. This is the first report of this serotype in the country in 4 years.

Tunisia:

From December 2018, 14 outbreaks due to FMDV O/EA-3 topotype were reported on multispecies farms. A vaccination campaign was launched against FMD in cattle and small ruminants January 2019. The date of previous occurrence of FMD in the country was in May 2017, with the circulation of A/AFRICA /G-IV.

Algeria:

Since June, there have been 146 reports of FMD in Algeria, and FMDV serotype O was detected (OIE, 2018), which was identified as O/EA-3, and the most closely related field viruses are those detected in the country during the outbreaks that occurred in 2018 (FAO, 2019).

Disease situation in North Africa and risks to Europe:

Since 2013, there have now been at least three different introductions of FMD into these countries in North Africa (due to the O/ME-SA/Ind-2001 in 2013/15, A/AFRICA/G-IV in 2017 and O/EA-3 in 2018). Compared to the situation prior to 2013 (where no FMD cases had been reported in the Maghreb since 1999), the emergence of these viral lineages represent a new route by which FMD might be introduced into Southern Europe. Inadvertent fomite transmission, or illegal importation of infected animal products probably represents the highest risk of introduction in to southern Europe. We understand that there are many lorry movements via ferries between southern Europe (namely Spain, France and Italy) and these North African countries, and should these vehicles be used for animal transport and not correctly disinfected then this represents a possible pathway of the circulating FMD virus in to southern Europe. In the North African region there are many livestock movements in to Algeria and Tunisia, with links to West Africa. The European Commission has warned EU MSs about empty livestock vehicles returning from the region having a fomite risk.

We consider that risk of introduction into southern Europe via long-distance airborne introduction is less likely. Although there are a number of published studies that show that the risks of long-distance spread via airborne transmission are higher across water, for example from France to the Isle of Wight, the role of pigs producing a sufficient plume for such transmission in North Africa is unlikely. Synchronous infection in a large cattle herd could also provide an airborne source of FMD virus (as shown from an example across the Solway in 2001) – and it is impossible to rule this out if the circumstances were favourable.

Relatively few people come directly from North Africa to the UK compared to those coming in from Spain and France. The risk of FMDV entry to the UK will increase significantly if the virus jumps into livestock in to southern Spain from Morocco, or into southern France from Algeria. Many tourists and British Nationals visit southern Spain each year.

Conclusion

There is a complex picture of viral incursion around the borders of the EU. This report highlights how this virus can still make significant and unexpected jumps, often through trade, or through illegal movements, and therefore there is a need for continued vigilance. We therefore consider there remains an overall **low** risk of introduction of disease from any affected region in the world and that the situation in North Africa currently does not change this risk level at present, but does merit enhanced support and vigilance. The risk from illegal imports is difficult to quantify but would be valid for any currently affected region in the world, including North Africa. We will continue to monitor the situation and remind livestock keepers of the importance of maintaining strict on-farm biosecurity, compliance with current legislation such as the swill feeding ban and reporting all suspicions of notifiable disease promptly.

Authors

Dr Francesca Gauntlett

Dr Paul Gale

Josef Bowen

Anthony Pacey

Dr Don King, NRL for FMD, The Pirbright Institute

References

All disease reports are available from the OIE WAHIS database.

FAO (2018). Foot-and-Mouth Disease Situation Food and Agriculture Organization of the United Nations Monthly Report, at: <http://www.fao.org/eufmd/global-situation/global-monthly-reports/en/>

Pezzoni G, Bregoli A, Grazioli S, Barbieri I, Madani H, Omani A, Sadaoui H, Bouayed N, Wadsworth J, Bachanek-Bankowska K, Knowles NJ, King DP, Brocchi E. Foot-and-mouth disease outbreaks due to an exotic virus serotype A lineage (A/AFRICA/G-IV) in Algeria in 2017. *Transbound Emerg Dis.* 2019 Jan;66(1):7-13. doi: 10.1111/tbed.13017.



© Crown copyright 2019

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.2. To view this licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2/ or email PSI@nationalarchives.gsi.gov.uk

This publication is available at <https://www.gov.uk/government/collections/animal-diseases-international-monitoring>

Any enquiries regarding this publication should be sent to us at iadm@apha.gov.uk