Qualitative risk assessment of the introduction of RVF in Yemen from the great Horn of Africa

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Rift Valley Fever (RVF) is a mosquito-borne viral zoonosis of increasing global importance. It appeared for the first time in 1930 in Kenya , being then encountered in an enzootic or epizootic form along the eastern and southern coast of Africa, and in Madagascar (Daubney R. *et al.*, 1931; Gerdes GH, 2004 ; Kasari TR, 2008). The first time it was detected outside the African continent was in September 2000, in Saudi Arabia and Yemen, leading to human deaths and major losses in livestock populations (Ahmad K., 2000). Its recent confirmation in Mayotte reminded its high potential of geographic extension. Strains isolated from Aedes mosquitoes during the 2000 outbreaks in Arabic Peninsula being phylogenetically close to the strain isolated in Kenya (1997-1998), the virus was thought to have been introduced from the Horn of Africa by ruminants (Shoemaker T. *et al*., 2002).

Assuming the virus has not survived in Yemen, data from field studies and literature was used to qualitatively assess the likelihood of “re-introduction” of RVF into Yemen through the legal importation of small ruminants from the Horn of Africa. After precisely describing the routes and volume of trade from the Horn of Africa to Yemen, different pathways for introduction were developed following the OIE risk assessment method. A matrix of likelihood combinations including four possible levels (very low, low, medium, high) was built and used to combine likelihood of events along each pathway. The overall probability of introduction was assessed low outside the rainy season, medium in summer and most likely to occur via ovine males exported during festival periods. The uncertainty was considered to be medium. Options to reduce the risk to an acceptable level are proposed and discussed, including possible improvements of the current Yemeni quarantine system.