Towards Vaccine Selection Guidelines for Each Regional Virus Pool of Foot-and-Mouth Disease

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1. INTRODUCTION

This presentation reports on the outcome of discussions amongst partners of the Network of OIE/FAO FMD Reference Laboratories, at a meeting in Lanzhou China, 15-19 September 2008, to see if vaccine strains tailored to cover the needs of particular regions could be identified and provide targeted, regionalised vaccine recommendations to complement those of the World Reference Laboratory (WRLFMD) which are not presented in a region-specific manner.

2. MATERIALS AND METHODS

Areas affected by endemic FMD can be subdivided into seven ecosystems or watersheds associated with particular FMDV serotypes and topotypes. For each of these virus pools, working groups were asked to assess the position of the watersheds, list the vaccine seed viruses appropriate for each pool and its vaccine priority in 2008 and to consider what additional work is needed to improve these priorities and for better FMD control.

3. RESULTS

In some parts of the world, this was relatively straightforward due to the existence of regional control programmes that have already identified vaccine strain requirements. At the other extreme, where there is low demand for and availability of FMDV vaccines, there is consequently little incentive to undertake the research and development needed to provide tailored vaccine strains.

3. CONCLUSIONS AND RECOMMENDATIONS

The ecosystem-based, watershed concept is useful, but watershed boundaries sometimes overlap or are uncertain emphasising the need for continuing and in places improved surveillance of circulating viruses. Border areas between pools and neighbouring areas to blind spots might be targeted. A range of measures might facilitate reporting and sample submission to reference laboratories, including: the provision of incentives in the form of vaccine or training in return for samples; submission and analysis of non-infectious materials; fostering regional projects to study the prevalence and genotypes of circulating viruses; establishing new regional laboratories, for example in West Africa.

There is variable harmonisation of vaccine strain use at national and regional level and a lack of coherent information on availability and use of different vaccine strains. Local decision makers sometimes have difficulty interpreting non-regionalised vaccine recommendations and regional advice would be useful. However, conflicts of interest that may affect the impartiality of advice given must be avoided. Regional advice on vaccine selection should be provided in future Reference Laboratory Network reports.

Vaccine matching requirements differ for emergency use and prophylaxis; the former may require a more exact match, whereas for the latter, generic broadly reactive strains may be more appropriate. Vaccines held in reserves of FMD-free countries often differ from those used in endemic countries. Some areas have no tailored vaccine supply and few measures to control suitability, often related to low demand and public identification of need versus private supply. In such cases, more systematic antigenic matching studies are needed to provide confidence in available vaccine viruses and to develop new ones, but it is not always clear when this is a research
or a commercial activity. Therefore, there may be benefit in seeking to clarify roles with respect to vaccine development and selection between reference laboratories and vaccine producers. Finally, the affordability and quality control of vaccines are separate but very important issues.

4. ACKNOWLEDGEMENTS

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