○○○ **Chair: Dr Jamil Gomes De Souza**

AVAILABILITY AND USE OF VACCINES FOR FOOT AND MOUTH DISEASE IN DIFFERENT PARTS OF THE WORLD - ROLE OF MANUFACTURERS FOR A TIMELY SUPPLY OF AFFORDABLE AND FIT-FOR-PURPOSE VACCINES

● Philippe Dubourget [(1)], Martin Ilott[(1)] & Tim R. Doel[(2)]
(1) MERIAL SAS, Lyon, France
(2) MERIAL Animal Health Ltd., Pirbright, UK

Vaccination is recognized as an important tool in Foot-and-Mouth Disease (FMD) control programs, and, in that respect, the role of manufacturers for a timely supply of affordable and fit-for-purpose vaccines in all regions of the world is instrumental.
The production of such vaccines requires a profound scientific and technical knowledge and extensive experience on their part:

- They must follow internationally accepted principles of Quality Assurance and Good Manufacturing Practice as a minimum prerequisite.
- The use of the most appropriate vaccine as part of an integrated control programme relies on an in-depth knowledge of the virus strains circulating in a region.
- Beyond the need to match field and vaccine strains, the selection of immunodominant strains, more immunogenic and with a broader cross-reactivity, is of considerable importance, especially in the currently fast-changing epidemiological environment of the Near and Middle East. Clearly, the isolate(s) chosen by different manufacturers to adapt to tissue culture and the methodology used in the adaptation could result in fundamentally different vaccine strains bearing the same generic name.
- Deep freezing of antigens has been a groundbreaking development for manufacturers, who can now anticipate the potency of the final vaccines and formulate them within less than a week when required.
- High potency vaccines have been proven to protect cattle as early as four days post-vaccination when tested by contact challenge and are particularly useful in emergency situations when vaccines are finished from antigens held in a Bank.
- Validated processes of purification of antigens remove most of FMDV non structural proteins, the markers of FMDV infection. Consequently vaccines produced from such purified antigens have the valuable property not to interfere with serological surveys carried out to identify infected/carrier groups of animals in the vaccinated population (DIVA vaccines).
- Cost effectiveness is achieved through harnessing the technology, optimizing the capacity of vaccine manufacturing plants and transferring technology locally whenever the option is proven viable.

Practical examples are given for illustrating these points. However, in order to achieve even faster and more targeted product development, as well as potentially for the supply of less costly vaccines, research efforts by both academic and industry should continue to focus and invest in these areas.