

# SEROLOGICAL INVESTIGATION OF RACEHORSE VACCINATION AGAINST EQUINE INFLUENZA IN MOROCCO

**O Fassi-Fihri<sup>1</sup>, M Dilai<sup>1</sup>, M Piro<sup>1</sup>, S Fougerolle<sup>2, 3</sup>, M El harrak<sup>4</sup>, W Maher<sup>5</sup>, R El mourid<sup>5</sup>, L Legrand<sup>2, 3</sup> and R Paillot<sup>2, 3</sup>**

<sup>1</sup>Hassan II Institute for Agronomy and Veterinary Medicine-Rabat, Morocco

<sup>2</sup>Universite de UniCaen Normandie-BIOTARGEN, France

<sup>3</sup>LABÉO Frank Duncombe, France

<sup>4</sup>MCI Animal Health, Morocco

In order to evaluate the vaccination status and the protection level against equine influenza (EI) virus infection in racehorses, a serological investigation was carried out on 509 racehorses from 6 different regions in Morocco using three serological tests: enzyme-linked immunosorbent assay (ELISA), hemagglutination inhibition (HI) and single radial hemolysis (SRH). The serological analysis showed 56% of seropositivity (285/509) by ELISA, 67% (343/509) by HI and 89.4% (455/509) by SRH, with 69.9% (356/509) above the clinical protection threshold, 19.4% (99/509) with low non-protective antibodies SRH titers and 10.6% (54/509) of horses with no SRH antibodies. Using the Kappa test, the SRH and HI assays showed a strong agreement, the SRH and ELISA assays had a moderate agreement and the HI and ELISA assays showed a poor agreement, which confirmed the low sensitivity of the ELISA assay when compared with the other serological methods. Seropositivity was positively correlated with the age of horses and the number of EI immunization received. The EI vaccines used had a weak influence on the serological status. This effect was observed when the EI vaccines Calvenza® (Boehringer Ingelheim) and Fluvac Innovator® (Pfizer) were used, with 94.1% and 100% of seropositivity when measured by HI, and with 100% and 94.7% exceeding the clinical protection threshold using (SRH), for these two vaccines respectively. The EI vaccine Fluvac Innovator® was administered prior to importation into Morocco (this vaccine was not commercialized at the time of the study). Other EI vaccines, including Prequenza-Te® (MSD Animal Health) (the most frequently used in Morocco with 67% coverage (342 horses out of 509 studied)) and Proteqflu-Te® (Boehringer Ingelheim) (22% coverage (114/509)) did not influence the serological status; with 64% and 67.5% seropositivity (HI) and with 66.4% and 72.8% above the clinical threshold (SRH), respectively. The location and the time since last vaccination have no influence on the serological result. Several factors relating to humans, vaccination or horses could influence this serological status.

[o.fassifihri@iav.ac.ma](mailto:o.fassifihri@iav.ac.ma)