International Alliance for Biological Standardization

IABS Meeting on High Pathogenicity Avian Influenza

Vaccination Strategies to prevent and control HPAI: Removing unnecessary barriers for usage

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LPAI H5N2 is enzootic in Mexico and Northern Central America since approximately 1994. Occasional incursions of H5N2 have been documented in the Caribbean as well. HPAI H7N3 is enzootic in Mexico since approximately 2013, with occasional incursions in neighbouring countries. HPAI and LPAI have also caused occasional infections in broiler breeders and turkeys of Chile in South America, beginning in 2002. Overall, avian influenza is enzootic in Mexico and nearby countries, whereas LPAI and HPAI have been controlled in Chile by stamping out. Vaccines and vaccination are commonly used in enzootic countries for both H5 and H7. The biologicals utilized include recombinant vaccines using HVT or FPV vectors expressing H5 or H7 and whole virus inactivated vaccines propagated and inactivated using traditional technologies. Inactivated recombinant vaccines developed by reverse genetics technology are now some of the most used killed vaccines for grandparents, breeders, layers and broilers.

The most significant challenges industry faces for avian influenza control include: a) unharmonious collaborations between industry and Government; b) various obstacles for timely updates of vaccine master seeds to reflect the most prevalent lineages of viruses circulating in the field (heavy vaccination imposes significant immune pressure resulting in frequent emergence of HPAIV and most commonly LPAIV sublineages; c) significant lapses in biosecurity involving manure and bird movement as well as other deficiencies; d) commercialization systems that rely heavily on live bird marketing; e) vaccine and vaccination cost (a vaccination program for commercial layers in a high

prevalence area may cost as much as $250.00 USD or more per 1000 chickens, just for protection against avian influenza without considering the cost of vaccination against many other significant pathogens that also require vaccines and/or medication, the cost of cleaning and disinfection, extended down time, various biosecurity restrictions, loss of access to AI-free markets, etc. Constant oscillations in product availability due to high mortality in broilers, breeders and layers impose a significant strain on the consumer via high poultry meat and egg prices during times of high challenge with AI, in countries with high meat and egg consumption and where the local purchasing power is generally low. Viable solutions or improvements are available for most of the five primary challenges presented herein, two of the most important ones being a strong collaboration with Government to allow for regular updates for vaccine master seeds, and a gradual reduction of commercialization of live birds from large integrators to large intermediary sellers.