AGROFOOD PRODUCTIVE: EPIDEMIOLOGY OF BIRD FLU: HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) AND ITS THREAT TO MALAYSIA

| 2 DECEMBER 2020 | 11.00AM – 1.00PM | ZOOM WEBINAR |

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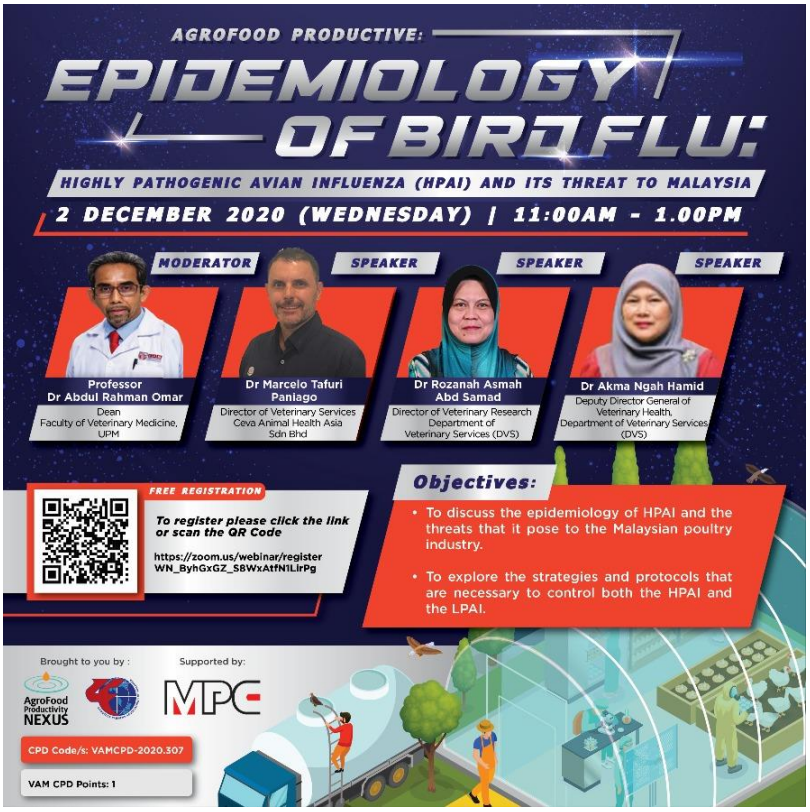

Moderator: **Prof Dr Abdul Rahman Omar, Dean, Faculty of Veterinary Medicine, UPM**

Panel 1: **Dr Marcelo Tafuri Paniago, Director of Veterinary Services, Ceva Animal Health Asia**

Panel 2: **Dr Rozanah Asmah Abd Samad, Director of Veterinary Research, Department of Veterinary Services**

Panel 3: **Dr Akma Ngah Hamid, Deputy Director General (Veterinary Health), Department of Veterinary Services**

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EXECUTIVE SUMMARY

- This edition of the webinar drills deeper into pathogenic diseases that have been infesting farms globally from both High Pathogenic Avian Influenza (HPAI) and Low Pathogenic Avian Influenza (LPAI).
- Audience were introduced to these diseases and the proposed mechanism of minimising infection risks on breeders, layers and broilers together with case study from similar country which has dealt with influenza outbreaks previously.
- Audience were also educated on the philosophy and protocol of containing outbreak in the country which is guided by government rules and regulations under the purview of DVS. To offset the impact from any potential outbreaks, audience were presented with compartmentalisation concept and how it is done.

A. OPENING REMARKS

- This webinar will be discussing on the epidemiology of HPAI and the threats it poses to Malaysian poultry industry. Participants will also be presented on the strategies and protocols of controlling both the HPAI and LPAI infection in their farm(s).
- Malaysia has experienced few outbreaks of HPAI since 2004 with the recent one happening in Sabah, 2018. Malaysia has managed to contain this threat well over the years.
- In cases of low pathogenic, there are several strains of concerns. Since 2017, few repeated cases of H9N2 strains has been reported in several poultry farms in Malaysia.
- The epidemiology of Avian Influenza has changes over the years with more cases of low pathogenic influenza detected in poultries. Strategies to contain both HPAI and LPAI varies between countries. This session will be exploring on the strategies drawing in expert opinion as the panelist members.
- The objectives are:
    - To discuss the epidemiology of HPAI and the threats that it poses to the Malaysian poultry industry
    - To explore the strategies and protocols that are necessary to control both the HPAI and the LPAI.

B. PAPER PRESENTATION

Panel 1: Dr Marcelo Tafuri Paniago, Director of Veterinary Services, Ceva Animal Health Asia

Key Highlights from the Presentation

- Avian Influenza has been infecting poultries globally with different variants unique between regions. For the year 2020, some infections have been detected mainly in Europe. Trends over the years indicates that infection happens during migratory of birds from one region to another.
- Despite not involved in birds' migration, Malaysia are still exposed to Avian Influenza threat. Past cases were eradicated professionally.
- H9N2 cases recorded from 2008 - 2018 has been relatively low. This is contributed by regulation in some regions where H9N2 cases are not mandatorily reported.
- 4 isolates from H9N2 have been detected in peninsular Malaysia in the year 2018.
- H9N2 is thought to have bigger economic impact to industry players than HPAIV despite difficulty in measuring the exact impact.
- Some experts consider H9N2 as capable to be transmitted from animal to humans. This virus contributes to the diversity of other subtypes through combination with other strains. To date, no country has managed to eradicate H9N2 in their country.
- Protection against H9N2 can be achieved with inactivated vaccine, despite not being able to provide complete protection against this virus.
- On average, H9N2 vaccines have yielded positive result in providing protection in farms. Tests were done at farms in Korea indicating reduced infection year- on- year and no infections since 2009 in vaccinated farms.
- Vaccination has been found to be assisting in curbing the diversity of H9N2 virus for both birds and eggs. Further periodic update on the vaccine should be considered to maintain control of this virus' future outbreaks.

Key challenges

- n/a

Recommendation

- Proper vaccination programme with the rights homology is paramount to the success of containing H9N2 threats among birds and eggs in this country.

Panel 2: **Dr Rozanah Asmah Abd Samad, Director of Veterinary Research, Department of Veterinary Services**

Key Highlights from the Presentation

- DVS, under the purview of MAFI, is the only competent authority that manages human health and veterinary services in Malaysia.
- DVS aims to provide quality veterinary services as an assurance to public health and sustainable livestock industry as means to ensure safety of human welfare.
- DVS responsibilities begin from the farm until the processing plant. They are the reference point and regulatory body in standards for livestock breeding and rearing, compliance to quality standards of products, livestock welfare, prevention of animal and zoonotic diseases and control of livestock imports and exports.
- HPAI outbreaks in Malaysia started in 2004 at Kelantan. Subsequent outbreaks occurred in 2006, 2007, 2017 and 2018 but all threats were managed to be eradicated.
- In occurrence of any animal/ zoonotic diseases that would trigger crisis, DVS will be deployed to conduct investigation before overcoming outbreaks by controlling virus spread, reducing damage inflicting by the outbreak and reduce losses.
- 5 Pillars of Animal Disease Management:
    - Preparedness encompasses formulating SOPs, regulations in operations and plans in cases of crisis. SOPs, protocols, manuals and guidelines can be accessed at DVS Malaysia website. Relevant personnel will be equipped with sufficient capability. Stakeholders will be educated with the right knowledge through suitable platforms.
    - Prevention dictates that prevention of outbreak occurrence by doing regular inspection, assessment and enforcing control. This involves multiple agencies at various stages and places throughout the supply chain. Poultries are required to comply to Malaysian standards and requirements.
    - Detect any threat of diseases through surveillance and traceability of poultry products. This involves collaboration between various agencies and sharing of information through regular meetings.
    - Response addresses the system and execution of this system in reaction to any relevant issues or crisis arising from any threats. This is an end- to- end respond undertaken by DVS to ensure outbreak eradication and ensuring no further threat arising from improper response.
    - Recovery deals with steps to ensure disease have been eradicated properly and supporting affected farmers to start producing again.

- Disease area as stipulated in Animal Act 1953 mandated the identification of threat area and measures required to properly react to virus containment. The radius of the area is subjected to investigation findings.

Key challenges

- n/a

Recommendation

- n/a

Panel 3: Dr Akma Ngah Hamid, Deputy Director General (Veterinary Health), Department of Veterinary Services

Key Highlights from the Presentation

- Compartmentalisation is segregation of birds by different level of health status to contain infection from spreading to safe areas.
- This serves as preventive measure to preserve health status of animal subpopulation to ensure animal and animal products trade remain uninterrupted amidst disease outbreaks. Compartment is recommended to be established during the zone is free from any threats.
- A zone is a territory/ country that contains animal subpopulation which is primarily defined on geographical basis. Compartment can be one or more establishments within a zone defined mainly by management and husbandry practices related to biosecurity.
- Zoning dictates the actions required at the outbreak and surrounding areas. Different countries have different zoning strategy. Zoning in Malaysia requires culling of birds in the infected zone; 1km radius from infected farm and surveillance zone of 10km radius from infected farm where any new infection will be observed for 42 days.
- Compartment should be defined clearly indicating the location of its components e.g. feed mills, slaughterhouse, rendering plants etc. and the interrelationship and separation between livestock in compartment and subpopulation with different health status.
- Application for compartmentalisation requires documented evidence to Veterinary Authority (VA) that addresses the following elements:
    - Physical or spatial factors that affects the status of biosecurity in a compartment. Any epidemiological premises or units need to be identified. Proper boundary provides protection from adjacent animal populations with different health status.

- Infrastructure factors. Adequate facilities to accommodate physical separation needs to be in place e.g. fencing, people entry facilities, animal facilities and other structures.
- Biosecurity Plan requires risks of infection agents access pathways, SOPs, mitigation plan and competent workers upskilling to be identified and executed properly.
- Traceability system denotes the needs to have proper documentation that recorded the source of feedstock/ materials into facilities, process flows and flock records to transportation of harvested broilers to markets.

- Surveillance of agents or diseases should be covering both internal and external surveillance employing combination of active and passive surveillance to ensure effectiveness.
- Diagnostic for any potential threats should be conducted by certified government and private labs. Early detection of disease and rapid notification are key to containing outbreaks. In any event of disease suspicion, free status of compartment should be suspended followed by revocation upon confirmation.
- VA is responsible to grant, suspend or revoke the status of a compartment. Continuous supervision to ensure compliance to requirement will be undertaken by VA followed by notification to the importing countries to ensure confidence in Malaysian poultry products.
- recognition of compartmentalisation is a bilateral agreement by relevant Malaysian authority and its counterpart in a foreign market that ensures continuous trade even in the event of change of healthy status in this country. Criteria of Compartment in Malaysia are as follows:
    - myGAP certified farm
    - Certified disease- free by DVS
    - Good health management record (high disease immunity).
    - Good infrastructure and farm management (GVHP)
    - Good processing plant management (GMP & VHM)
    - Application from interested farms/ premises

<u>Key challenges</u>

- n/a

<u>Recommendation</u>

- n/a

C. PANEL DISCUSSION

- Panel 1 mentions that China, Saudi Arabia and Egypt vaccinated their broilers for protection against H9N2. Malaysia does not allow H9N2 vaccination. Panel 2 advises that policy against vaccination for H9N2 has been revised recently. After thorough research and deliberation, Breeders and layers are vaccinated for this disease as a pilot approach. The outcome will be the basis for future vaccination for broilers. Panel 3 says that currently only select farms which are at risk for this disease have been allowed vaccination for H9N2. Any farms that are interested to vaccinate their birds will need to request for permission from state DVS.
- Panel 1 says that titre Korea consider 6.2 is a protective titre. However, he says that the higher titre the better.
- Panel 2 remarks that under Animal 1952, section 20, no compensation shall be payable to farmers for any animal culled for any confirmed outbreak, especially commercial farms. This payment is a courtesy from DVS to assist farmers in restarting their operation.
- Prof. Dr. Abdul Rahman Omar mentions that only farms at high risk are required to vaccinate their birds. DVS will evaluate and approved vaccination for respective farms.
- Panel 2 mentions that Sabah & Sarawak has their own ministry in agriculture with their own regulations. These states have imposed some restrictions on importing poultries from Peninsular Malaysia.
- Panel 2 remarks that eggs from LPAI H9N2 vaccinated farms are safe for consumption and fit to be exported to foreign market. Malaysia allows import of broilers from countries which vaccinated their breeder birds for H5N1 due to the minimal risks. Panel 1 adds that these vaccinated poultries are safe for human consumption. However, for import purposes, selling of broilers are subjected to agreement terms between respective countries.
- Panel 2 says that current revision of vaccination practices only allows for vaccination on long live birds (layers and breeders). Administration of vaccine to village chicken is subject to the outcome from this trial on long-live birds.
- Panel 2 advises that commercial test kit to monitor serology on AI will be available soon in the market. However, serology only helps monitoring the situation. Proper diagnosis requires more than just serology monitoring. Panel 2 mentions that they are some kits available that is capable of performing mini- PCR which is capable of detecting antigen of H9N2 and identifying the subtypes of Avian Influenza. Panel 3 says that DVS would recommend opting for lab test that is approved by DVS. These labs employ methods as recommended in the OIE.

D. SUMMARY

- Panel members have presented on HPAI and LPAI and the trends of global infection for the past decade. It is critical for these diseases threat to be dealt with proactively through preventive measures that covers vaccination according to government guidelines apart from conducive farms condition that could deter introduction of agents to poultries.
- The Malaysian government has put in place extensive Acts, SOPs and guidelines with regards to both prevention of infection, and eradication of confirmed disease outbreak in the country. Compliance to these regulations is key to ensure consumers' access to quality poultries and access to foreign market for industry players.