Member experience on prevention and control for Vector Borne Disease [Malaysia]

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World Organisation for Animal Health
Founded as OIE

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Vector Borne Disease situations

Disease of concern	Distribution	Impact	Mode of incursion*
Lumpy Skin Disease	**Disease present**	**Economical**	**Insect vectors, direct contact, fomites, animal movement**
African Horse Sickness	**Disease absent. Last reported case in 2020**	**Economical- equine related activities, losses of horses**	**Not conclusive**
African Swine Disease	**Disease present**	**Economical, losses of pigs**	**Animal movements, fomites**
Japanese Encephalitis	Disease absent. Last reported case in 2004	Economical, zoonoses	
West Nile Disease*	Disease never reported *growing concern	Economical, zoonoses	Migratory birds/ human

Endemic diseases	Distribution	Impact
Piroplasmosis	Endemic	production losses
Trypanosomiasis	Endemic	

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Detection capacity

Disease	Diagnostic capacity	Surveillance program
Lumpy Skin Disease	**RT-PCR** **Virus isolation** **Serology (Elisa- depends on the availability of kit)**	**Clinical surveillance**
African Horse Sickness	**RT-PCR** **Virus isolation** **Serology (Elisa)** **Vector- morphological ID & DNA barcoding**	**Serosurveillance** **Clinical Surveillance** **Vector Surveillance** **Antigen Surveillance**
African Swine Disease	**RT-PCR** **Virus isolation** **Serology (Elisa)**	**Serosurveillance** **Clinical Surveillance** **Antigen Surveillance**
Japanese Encephalitis	**RT-PCR** **Virus isolation** **Serology (Elisa- depends on the availability of kit)**	**Clinical surveillance*** **Antigen Surveillance*** ***limited to swine**

Detection capacity

Disease	Diagnostic capacity	Surveillance program
West Nile Disease	RT-PCR	Antigen Surveillance (limited to wild birds)
Trypanosomiasis	Buffy coat Thin blood smear	Passive Surveillance
Piroplasmosis: Babesia sp.	Thin blood smear Impression/ squash smear	Passive Surveillance
Anaplasma sp.		
Theileria sp.		

Response to Vector Borne Diseases

Disease	Surveillance	Responses & control	Prevention	Vaccination	Contingency plan
LSD	Animal (clinical)	• Slaughter • Quarantine of infected herd Movement control • Biosecurity • Awareness	• Vaccination • Vector control • Import restrictions • Movement control • Biosecurity • Awareness	LSD-NDOLL	-Awareness on biosecurity -Promote GAHP -Continuous awareness campaign -continuous education of field technicians
AHS	Animal Vector	• Stamping out • Quarantine • Movement control • Biosecurity • Awareness	• Vector control • Import restrictions • Movement control • Biosecurity • Awareness	NA	-Continuous awareness campaign -continuous education of field technicians

Response to Vector Borne Diseases

Disease	Surveillance	Responses & control	Prevention	Vaccination	Contingency plan
ASF	Animal	• Stamping out • Quarantine • Movement control • Biosecurity • Awareness	• Movement control • Import restrictions • Biosecurity • Compartmentalization • Awareness	NA	-Awareness on biosecurity -Promote GAHP -Continuous awareness campaign -continuous education of field technicians
JE	Animal (Ag & clinical)	• Culling of sick animals • Quarantine • Movement control • Biosecurity • Awareness	• Movement control • Import restrictions • Biosecurity • Awareness	Limited to equine	-Awareness on biosecurity -Promote GAHP -Continuous awareness campaign -continuous education of field technicians

Response to Vector Borne Diseases

Disease	Surveillance	Responses & control	Prevention	Vaccination	Contingency plan
WND	Animal (Ag)	• Culling of sick animals • Quarantine • Movement control • Biosecurity • Awareness	• Movement control • Import restrictions • Biosecurity • Awareness	NA	-Awareness on biosecurity -Promote GAHP -Continuous awareness campaign -continuous education of field technicians
Trypanosomiasis	Passive Surveillance	-Treatment -Screen and treat prior to movement	-movement control of infected animals -vector control	NA	-Awareness on biosecurity -Promote GAHP -Continuous awareness campaign -continuous education of field technicians
Piroplasmosis	Passive Surveillance	-Treatment -Screen and treat prior to movement -vector control		NA	

Impact of the actions

- Cost

i. frequency and number of sampling and diagnostic works to support animal movement.

ii. support procurement of vaccine and logistics related to vaccination exercise (LSD)

iii. sampling equipment, consumables and logistics related to vector surveillance (AHS)

iv. medications, awareness campaigns.

v. compensation from the government

- Effective containment of disease
- Capable of progressing toward acheiving disease-free status (AHS)

Challenges and possible solutions

Activity assessed	Challenges	Feasible Solution Plan
Disease control	**1. Large/ small ruminant farming system – >85% is smallholder / backyard with less or no biosecurity measure. 2. Low cooperation among farmers in vaccinating their animals (LSD) 3. Illegal animal movement / flash sale of breeders (pig) from infected farms 4. Lack of awareness & knowledge on economic impact of among farmers/ stableman**	**1. Awareness on biosecurity management 2. Promote GAHP 3. Aggressive campaigning 4. Continuous field staff trainings**
Surveillance	**1. Lack of subject area experts (veterinary-public health importance entomologist) 2. Lack of technical guidance on effective vector sampling (in order to get the maximum yield of Diptera of interest)**	**1. Short term- external technical guidance (WOAH) 2. Long term - to have good number of scholars in Veterinary entomology. -to enhance the specialization of experts in vector-borne diseases**
Budget	**Challenge in maintaining the full function of equipment and high end equipment due to shortage of allocation**	**To acquire special allocation/funds for replacement or repair**

Collaboration with other sectors under One Health approach

- JE is one of the priority zoonotic disease to be monitored DVS-Ministry of Health (MOH)
- Information sharing with relevant Ministry and agency (especially, MOH and Wildlife Department.
- Collaboration in surveillance with Wildlife Department.

Challenge and possible solutions to strengthen the collaboration

Challenges	Possible Solution
Different funding sources and levels- apparently paucity of funds and allocations in respect of animal health	**Educating / increase awareness of policy makers on the importance of veterinary vector borne diseases**
Different strategy of carrier path and capacity building of technical staffs	**1. Innovative approaches for rebuilding and sustaining veterinary or medical entomology/vector biology to complement both sectors.** **2. Continuous training opportunities in disease-endemic and high-risk countries shall made available for veterinary technicians.**
Lack of manpower	**Increase staffing**
Different instituitions with different mission and priorities	**Complement each sectors in jointly combat the incursion/ advancement of zoonotic potential vector borne diseases.**
Attitude- preference to contain the disease crisis within the relevant institute (unless it goes beyond the control)	

Acknowledgement

i. Director General of the Department of Veterinary Services Malaysia
ii. Director of Veterinary Research Division
iii. Director of Veterinary Research Institute, Ipoh
iv. Director of Disease Control and Veterinary Biosecurity Division

Thank you

Expectations for the VBDs workshop (Not Included in the Presentation)

- To get guidance in conducting ASF vector surveillance as to fulfill the requirement of gaining country free status following the last outbreak in April, 2023.
- To seek support on capasity building in vector borne disease expertisation
- What disease experience you expect to gain from member countries/territories? : information on West Nile Disease Surveillance and the incursion risk of Rift Valley Fever into Southeast Asia