

SURVEILLANCE PROGRAMME FOR AFRICAN HORSE SICKNESS (AHS) VECTOR IN MALAYSIA

PRESENTER :
DR. FAIZAH HANIM BT MOHD SAEID
VETERINARY RESEARCH INSTITUTE
DEPARTMENT OF VETERINARY
SERVICES MALAYSIA

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World
Organisation
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Health
Founded as OIE

Organisation
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de la santé
animale
Fondée en tant qu'OIE

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Animal
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OUTLINE

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KEMENTERIAN PERTANIAN
DAN INDUSTRI ASAS TANI





INTRODUCTION

INTRODUCTION

- African Horse Sickness (AHS) is a vector borne disease in horse that cause by AHSV. The **biting midges** which recognized as *Culicoides spp.* is a **biological vector** that responsible to carry the virus. The main reported species as the vector is *Culicoides imicola*. The spread of the disease give a great economical impact to the equine industry.
- Due to the AHS outbreak in the year of 2020, Malaysia was no longer recognized as AHS free country. Therefore, Department of Veterinary Services (DVS) together with The Equine Council of Malaysia have a discussion regarding the issue on 9th August 2021 and decided to conduct the **vector surveillance programme** in order to regain the **AHS free status**.



OBJECTIVE

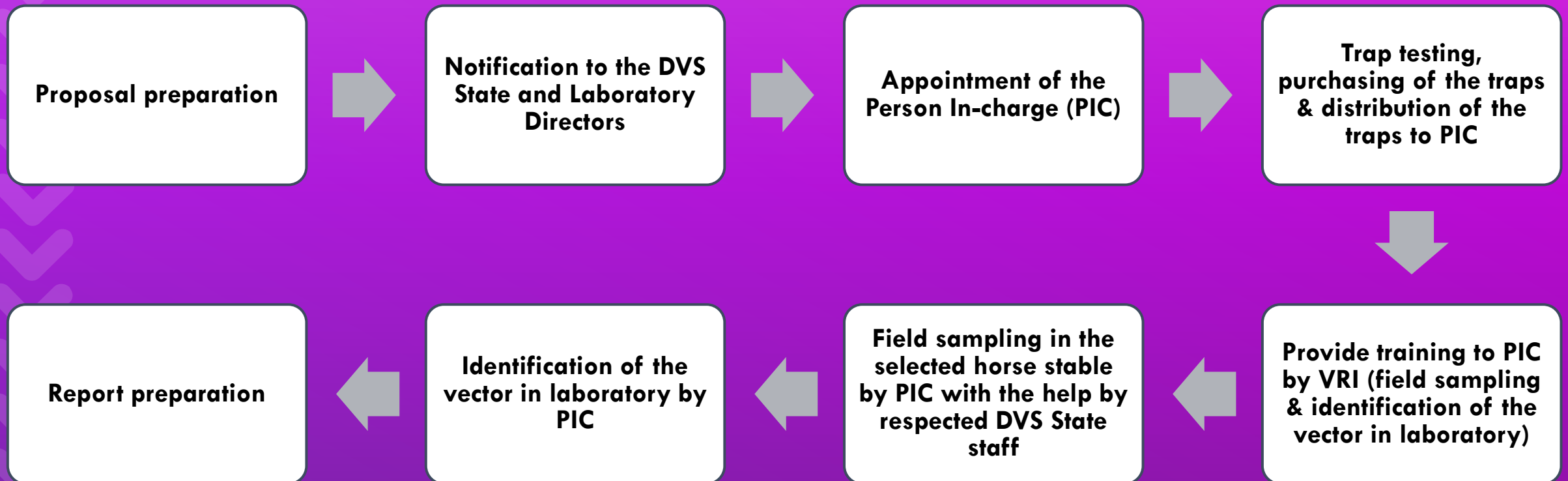
OBJECTIVE

- Therefore, a vector surveys programme for AHS was performed by DVS in order
 - to prove the **presence** or an **absence** of the **vector (*C. imicola*)** in the selected horse premises in Malaysia.
- The AHS vector surveillance programme is one of the initiative to regain the AHS free status.



METHODOLOGY

METHODOLOGY



METHODOLOGY- cont.

The sampling programme was conducted from 22nd November 2021 until 10th March 2022 by PIC with the help from DVS staff from the respective States.

A total of 29 horse premises from 6 zones were screened; Zone I (North), Zone II (East), Zone III (Central), Zone IV (South), Zone V (Sabah), and Zone VI (Sarawak).

3 insect traps were placed in the horse stable for at least 12 hours (from 6 pm, overnight).

The initial screening, categorized according to the types of insect and microscopic identification were performed in veterinary laboratory (VRI, MVZ, MDV & SVDL).

METHODOLOGY- cont.

No.	Zone	State	Horse Premises	Total Horse Premises	Targeted Premises
1	I (North)	Perlis	6	40	5
2		Kedah	10		
3		Penang	17		
4		Perak	7		
5	II (East)	Pahang	25	128	5
6		Terengganu	56		
7		Kelantan	47		
8	III (Central)	Selangor	13	38	5
9		F. T. K. Lumpur	7		
10		N. Sembilan	18		
11	IV (South)	Malacca	20	51	5
12		Johore	31		
13	V (Sabah)	Sabah	47	47	5
14	VI (Sarawak)	Sarawak	14	14	4
Total			318	318	29

VETERINARY LABORATORIES

DEPARTMENT OF VETERINARY SERVICES

North Zone Veterinary Laboratory
Bukit Tengah, Pulau Pinang

East Zone Veterinary Laboratory,
Kota Bharu, Kelantan

Diagnostic Veterinary Laboratory ,
Kota Kinabalu Sabah.

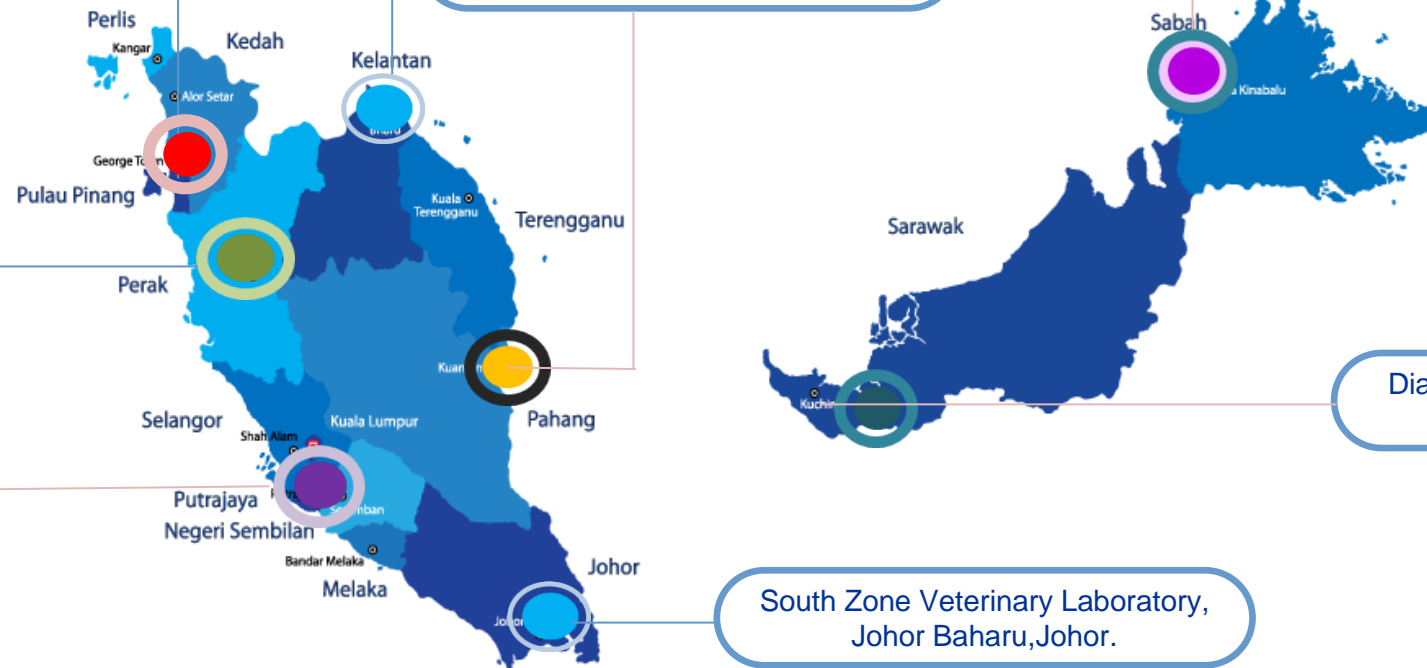
**VETERINARY RESEARCH
INSTITUTE**
National veterinary reference
laboratory

East Zone Veterinary Laboratory,
Kuantan Pahang

Central Zone Veterinary Laboratory
Salak Tinggi, Selangor

South Zone Veterinary Laboratory,
Johor Baharu, Johor.

Diagnostic Veterinary Laboratory
Kuching, Sarawak



METHODOLOGY- cont.

Field Trap Set-Up

3 traps

Placed overnight from 6 pm

20 m from horse stable

1.5 to 2.0 m upward from the ground

50 m between each trap



METHODOLOGY- cont.

Identification



Separation according to insect type & size

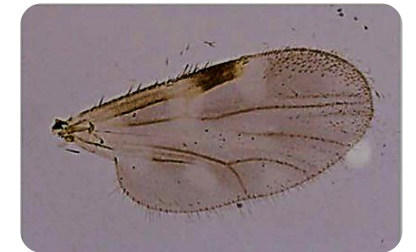


Mosquito wing

VS



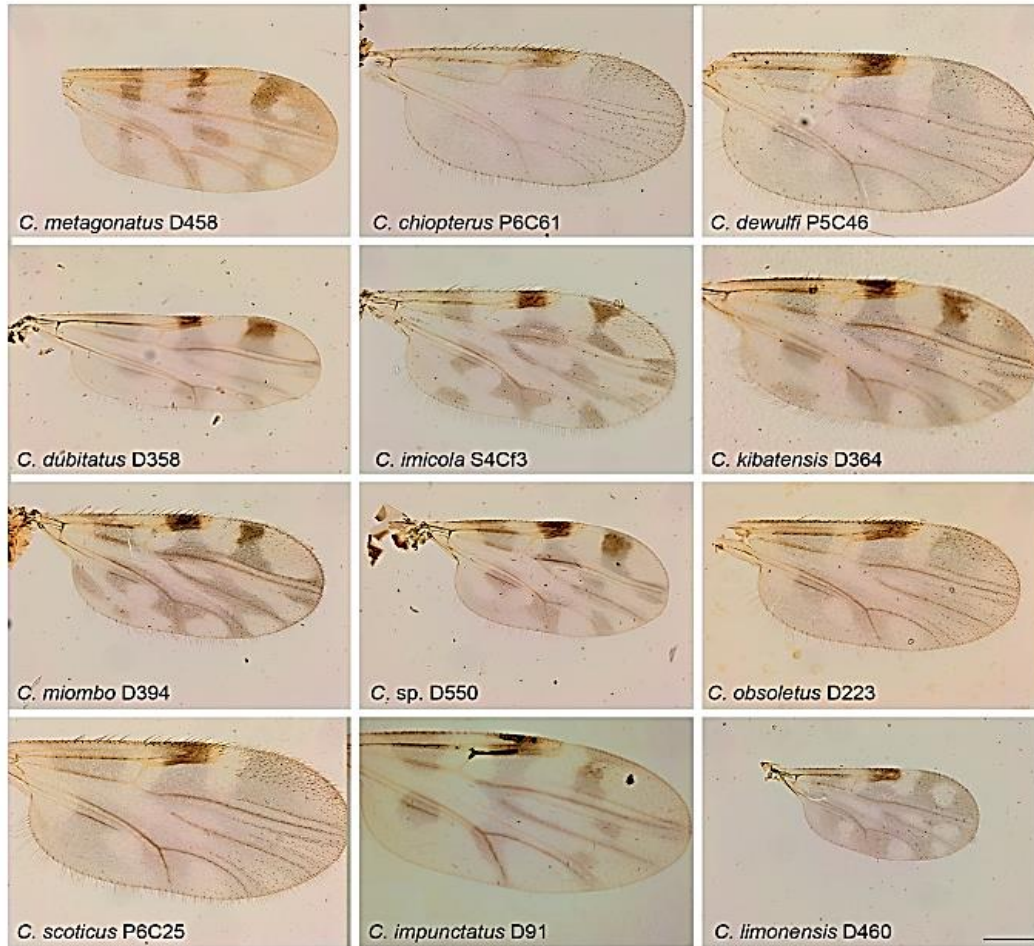
Culicoides spp.



Gnat/Midge wing

METHODOLOGY- cont.

Culicoides spp. wing pattern



Culicoides imicola wing pattern





RESULT

CLASSIFICATION OF DIPTERA

Phylum	Arthropoda								
Class	Insecta								
Order	Diptera								
Sub-order	Nematocera				Brachycera	Cyclorrhapha			
Family	Ceratopognidae (Midges)	Simuliidae (Black Flies)	Phychodidae (Sand Flies)	Culicidae (Mosquitoes)	Tabanidae (Horse Fly)	Muscidae (House & Stable Flies)	Calliphoridae (Blow fly)	Hippoboscidae (Forest Fly & Keds)	Oestridae (Bot Fly)

I. PERSON IN-CHARGE (PIC)

No.	Name	Position	Workplace
1	Dr. Faizah Hanim binti Mohd Saeid *Programme advisor	Veterinary Officer/GV52	VRI, Ipoh
2	Dr. Fazly Ann binti Zainalabidin *Programme coordinator	Research Officer/Q44	
3	Pn. Azima Laili Binti Hanifah	Research Officer/Q48	
4	Dr. Aisyah Munira binti Mohd Amir	Veterinary Officer/GV41	
5	Pn. Premaalatha A/P Bathmanaban	Assistant Science Officer/C29	
6	En. Erwanas Asmar bin Ismail	Laboratory Assistant/ C19	
7	En. Mohd Hasril Bin Muhamad Janip	Assistant Librarian/S22	
8	Pn. Thenamutha A/P Muniandy	Research Officer/Q44	MVZU, Bukit Tengah
9	Dr. Ainnul Malini binti Ismail	Veterinary Officer/GV41	MVZS, Johor Bahru
10	Pn. Siti Fatimah binti Mohamad @ Abdul Aziz	Research Officer/Q41	MVZT, Kuantan
11	Dr. Tuba Thabitah binti Abdullah Tahir	Veterinary Officer/GV41	MVZT, Salak Tinggi
12	En. Syahrol bin Zamzuri	Research Officer/Q41	
13	Pn. Norazura binti Baharom	Assistant Science Officer/C29	
14	Dr. Wan Norulhuda binti Wan Abdul Wahab	Veterinary Officer/GV44	MVZT, Kota Bharu
15	En. Sulaiman bin Ibrahim	Laboratory Assistant/ C19	
16	En. Mohd Azrul bin Baharudin	Laboratory Assistant/ C19	
17	Dr. Wan Maryani binti Wan Hassan	Veterinary Officer/GV41	EPIS, BKPBV, HQ
18	Dr. Jackie Anak Peter	Veterinary Officer/GV41	SVDL, Kota Samarahan
19	En. Joeship Anak Empol	Assistant Veterinary Officer/GV32	
20	En. Ag. Muhammad Sagaf bin Abu Bakar	Research Officer/Q41	MDV, Kota Kinabalu
21	Cik Nornismah binti Hadis	Veterinary Assistant/GV 19	
22	Dr. Resya Soffiana binti Yassin	Veterinary Officer/GV 41	

Epidemiology Unit, Keapayan

II. TRAINING

**The Workshop on Sampling & Identification of African Horse Sickness (AHS) Vector, *Culicoides imicola*
at Veterinary Research Institute, Ipoh, Perak**

Workshop Session	Date	Participant	Workshop Mode
I	20 th October 2021	PIC Zone I (North), Zone III (Central) & Zone VI (Sarawak)	Hybrid
II	21 st October 2021	PIC Zone II (East), Zone IV (South) & Zone VI (Sarawak)	Hybrid
III	23 rd December 2021	PIC Zone V (Sabah)	Virtual

II. TRAINING-cont.



Field trap set-up

Storage of the samples

Categorized the samples

Vector identification

Vector confirmation by VRI

Recording of the data



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME

The number and percentage according to the types of insect trapped during the African Horse Sickness (AHS) vector surveillance programme in Malaysia.

Types of insect	Number of insect	Percentage (%)
Flies	903	1.17
Mosquitoes	14,070	18.24
Gnat	2,732	3.54
Others	59,441	77.05
Total number of insect	77,146	100.00

III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

The number of insect trapped during the African Horse Sickness (AHS) vector surveillance programme in Malaysia according to zone.

Zone	Type of insects (n)				Total (N)	Culicoides spp.
	Flies	Mosquitoes	Gnat	Others		
Zone I (North)	428	8,133	637	35,688	44,886	380
Zone II (East)	193	984	875	4,166	6,218	147
Zone III (Central)	51	1,138	482	9,268	10,939	316
Zone IV (South)	72	791	89	5,251	6,203	53
Zone V (Sabah)	152	1,885	462	2,824	5,323	122
Zone VI (Sarawak)	7	1,139	187	2,244	3,577	150
Total	903	14,070	2,732	59,441	77,146	1,168

III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE I (NORTH): PERLIS, KEDAH, PENANG & PERAK



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE II (EAST): PAHANG, TERENGGANU & KELANTAN



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE III (CENTRAL): SELANGOR, F.T. K. LUMPUR & N. SEMBILAN



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE IV (SOUTH): MALACCA & JOHORE



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE V (SABAH)



III. SAMPLING & IDENTIFICATION OF VECTOR PROGRAMME-cont.

ZONE VI (SARAWAK)





CONCLUSION

CONCLUSION

Overall, the AHS vector surveillance programme was smoothly conducted according to the planned timeline with the help by various parties in DVS, Equine Council and the owner of the horse premises.

The sampling programme was performed in 4 months which involved 29 horse premises all over Malaysia.

The results showed the **absent of AHS vector which is *Culicoides imicola***.

Therefore, the data and results were suggested to be used as one of the prove in order to regain the AHS free status in Malaysia.

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- Hopefully, this cooperation will continue in the future.

THANK YOU

VETERINARY RESEARCH INSTITUTE
Veterinary Research Division
Department of Veterinary Services (DVS)
Malaysia
No 59, Jalan Sultan Azlan Shah, 31400 Ipoh,
Perak
Malaysia

Tel : 605-5457166

Fax : 605-5463368