EPIDEMIOLOGY OF SURRA DI SUMBA ISLAND OF INDONESIA

World Organization for Animal Health (WOAH) Webinar
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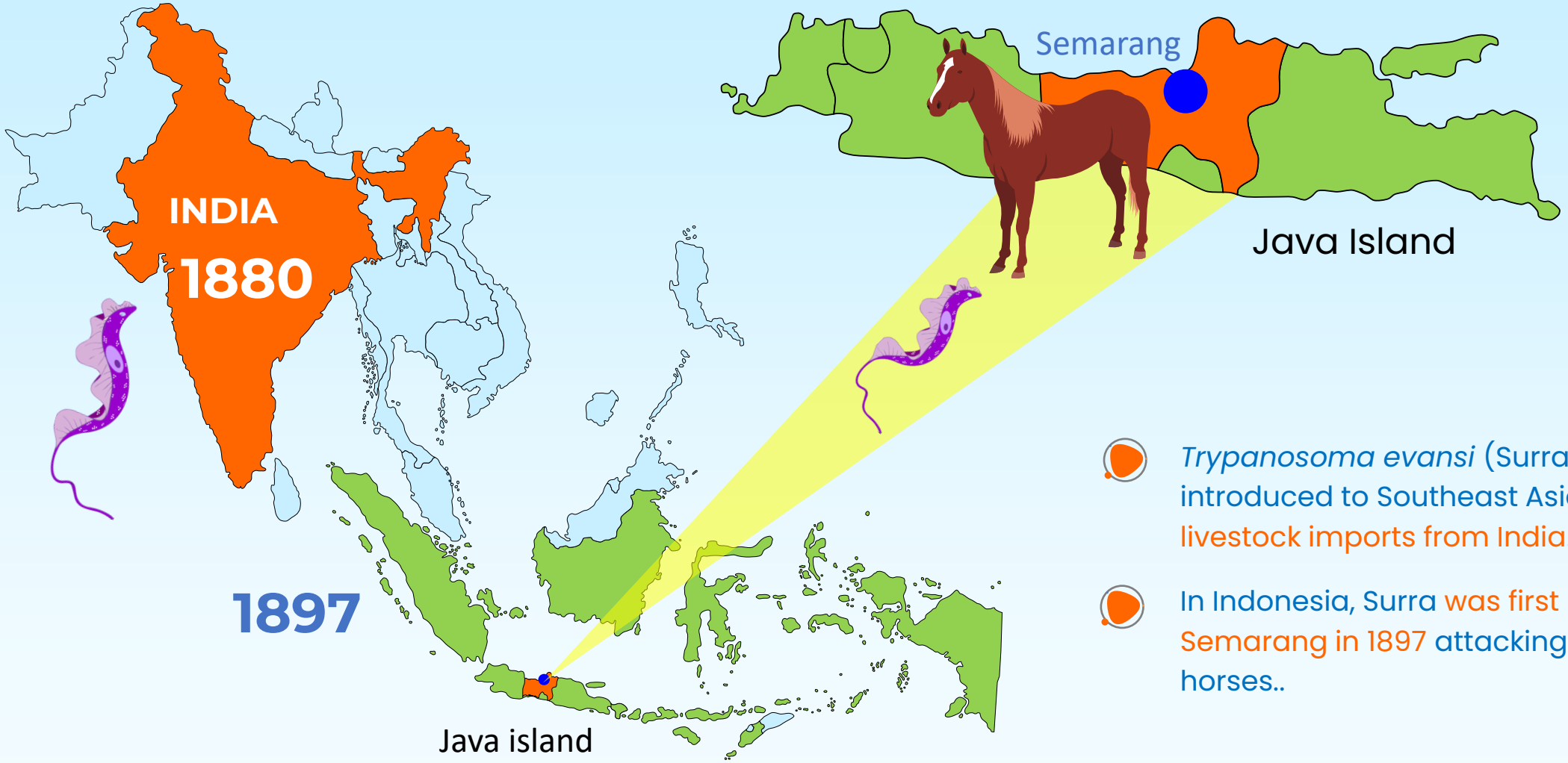
OVERVIEW OF SURRA IN INDONESIA



- *Trypanosoma evansi* (Surra) was introduced to Southeast Asia through livestock imports from India.
- In Indonesia, Surra was first reported in Semarang in 1897 attacking a group of horses..

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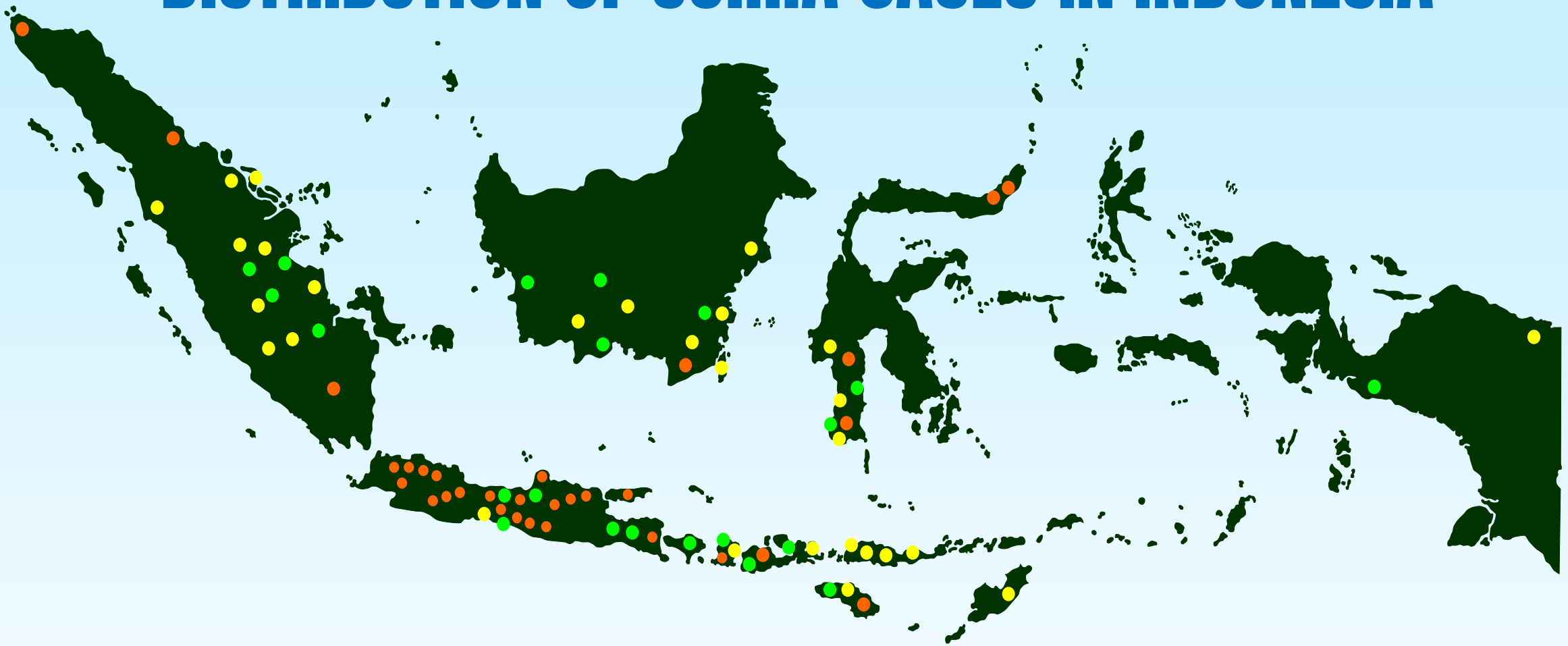
DISTRIBUTION OF SURRA CASES IN INDONESIA



T. evansi preserved in liquid nitrogen at Research Center for Veterinary Science (RCVS – Bogor = 416 isolates of *T. evansi*)

Surra cases reported by RCVS and Veterinary Investigation Center (VIC) in 2006 – 2009

Surra cases reported by RCVS and Veterinary Investigation Center (VIC) in 2010 – 2020

SUMBA ISLAND WAS FREE FROM SURRA UNTIL 2009

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SUMBA ISLAND

Sumba (Indonesian: Pulau Sumba) is an island in eastern Indonesia. It is one of the Lesser Sunda Islands and is located in the East Nusa Tenggara province.

- Area: 11,006 km²
- Population: 779,049 (Census 2020)
- Population density: 70.8/km2 (183.4/sq mi)
- Largest town : Waingapu – East Sumba
- Weather: 32 – 36 °C, Wind S at 13 km/h, 65% Humidity

The terrain consists of low limestone hills, as opposed to the steep volcanoes of many Indonesian islands. There is a dry season between May and November and a wet season between December and April. The island's western part is more fertile and more populated than its eastern side.

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THE BEAUTY OF SUMBA ISLAND

TYPICAL HOUSE OF FARMER IN EAST SUMBA

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Document : April H Wardhana

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SANDELWOD HORSE

Document : April H Wardhana

Sandelwod horse is an indigenous horse of Sumba Island

The characteristics of the sandelwod horse include a height between 110 and 130 cm, a relatively harmonious body shape, short middle body, large and deep chest, tiny ears, a light towing horse type.

A Sandelwod horse is a crossbreed horse between an Arabian horse and a local pony to enhance its appearance as an Indonesian racehorse.

Sandelwood horses are also bred as horseraces. Additionally, in the culture of Sumba, horses are also regarded as family members and serve as a sign of honor and family pride.

For the people of Sumba, the Sandelwod horses hold considerable cultural significance, where they are employed in traditional ceremonies and practices, most notably as dowries in matrimonial unions and an integral part of the Pasola traditional ceremony (the dexterity of throwing wooden javelins from horseback).

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OUTBREAK OF SURRA IN SUMBA ISLAND (2010 - 2012)

- Sumbawa Island is one of endemic Surra islands in Indonesia
- Prior to 2009, Sumba Island was believed to be the sole Indonesian island devoid of the Surra caused by *Trypanosoma evansi*.

- In March 2010, the island of Sumba was introduced to *Trypanosoma evansi* from Sumbawa Island with two hypotheses.

Hypothesis I : The price of buffaloes in Sumbawa Island (Bima District) is cheaper than in Sumba

Hypothesis II : Traditional horse racing events conducted regularly as part of Sundanese's culture

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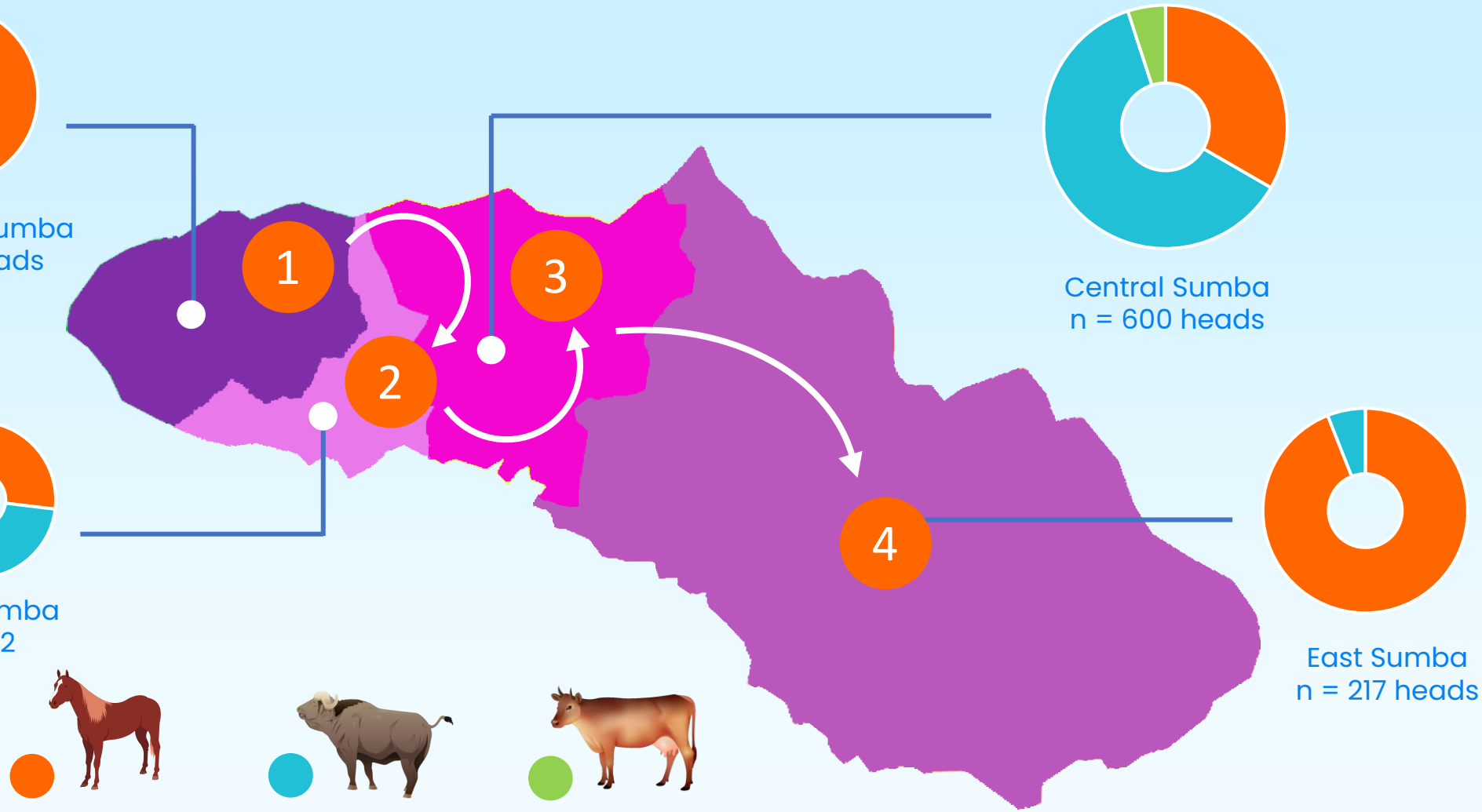
CRONOLOGY & MORTALITY OF LIVESTOCK IN SUMBA ISLAND DUE TO SURRA (2011)



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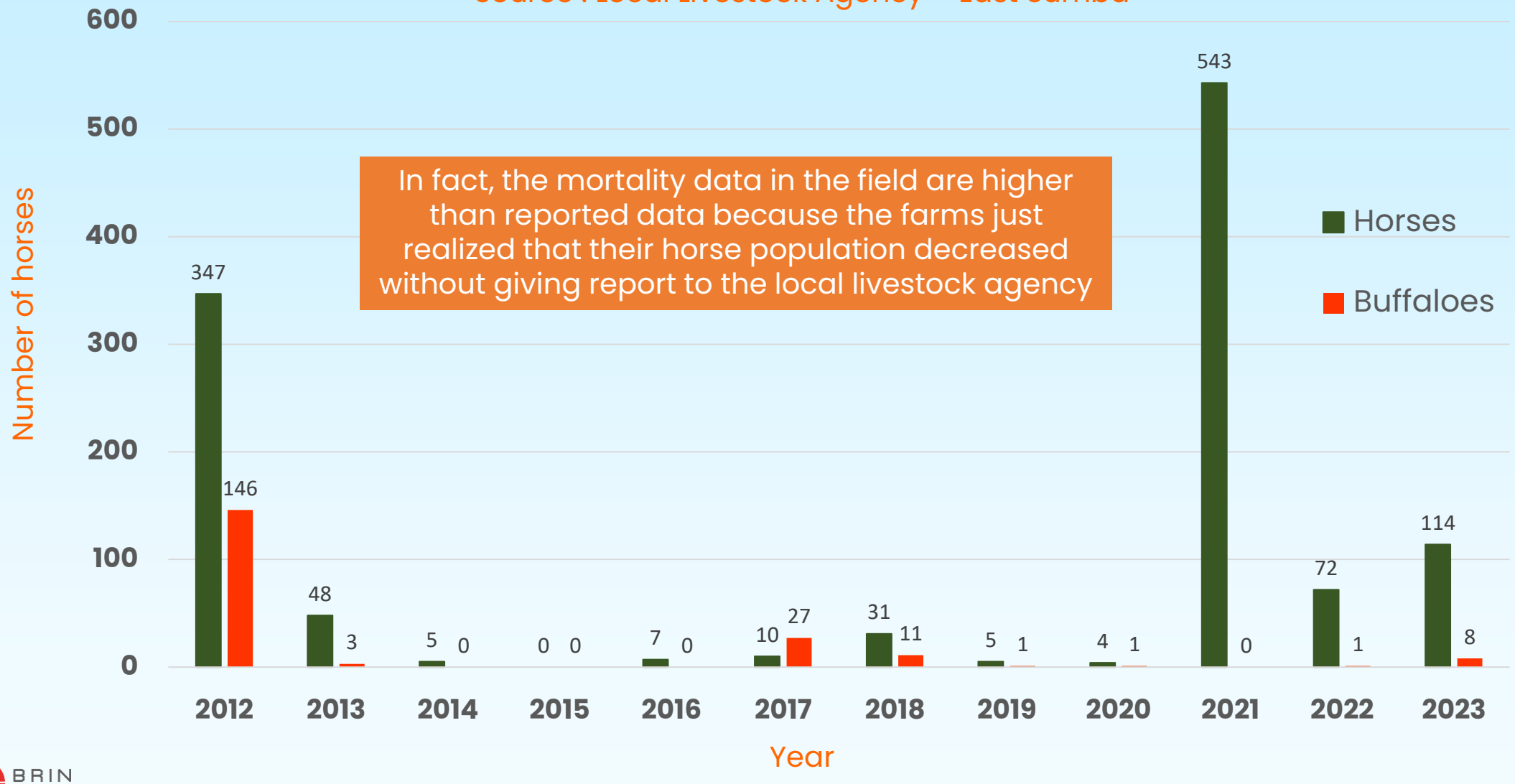
MORTALITY OF HORSES & BUFFALOES DUE TO SURRA

Source : Local Livestock Agency – East Sumba



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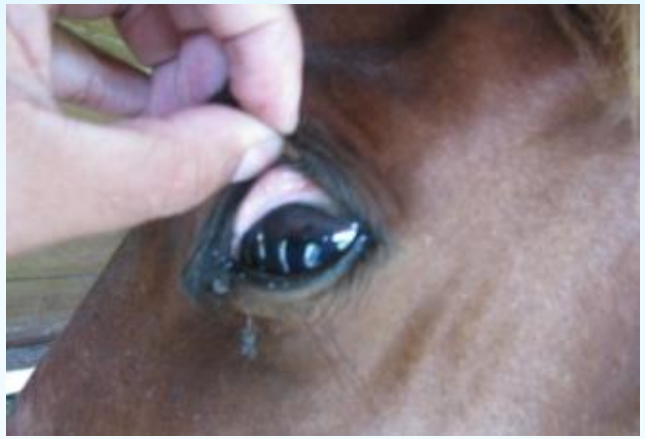
CLINICAL MANIFESTATION IN LIVESTOCK



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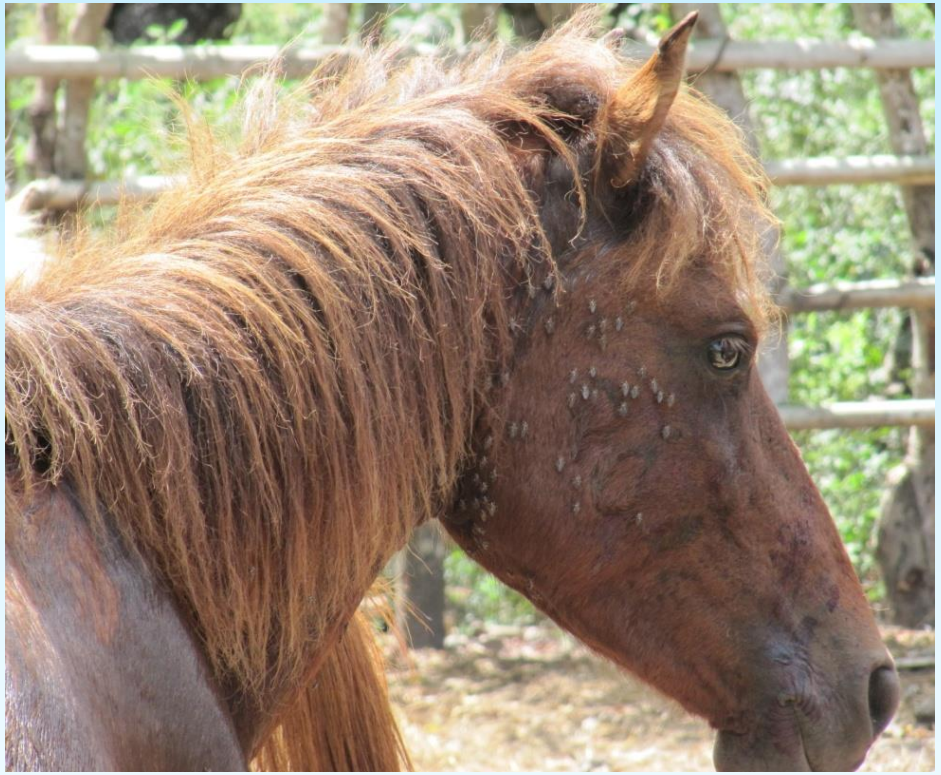
SURRA VECTORS ATTACK ON LIVESTOCK



Surra vector attacking a horse face

Tabanids attacking foods of cattle

Surra vector attacking abdomen of a horse

(Documents : April H Wardhana)

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SURRA CONTROL PERFORMED DURING THE OUTBREAK - 2010

During the Surra outbreak, the Surra drugs was not yet accessible on the island of Sumba, and the mortality of livestock due to Surra continued to rise. To reduce the risk of transmission, infected livestock were slaughtered and burned. In addition, the farmers sprayed insecticide to prevent hematophagous flies (Vector Surra – blood sucking flies) from attacking their livestock.

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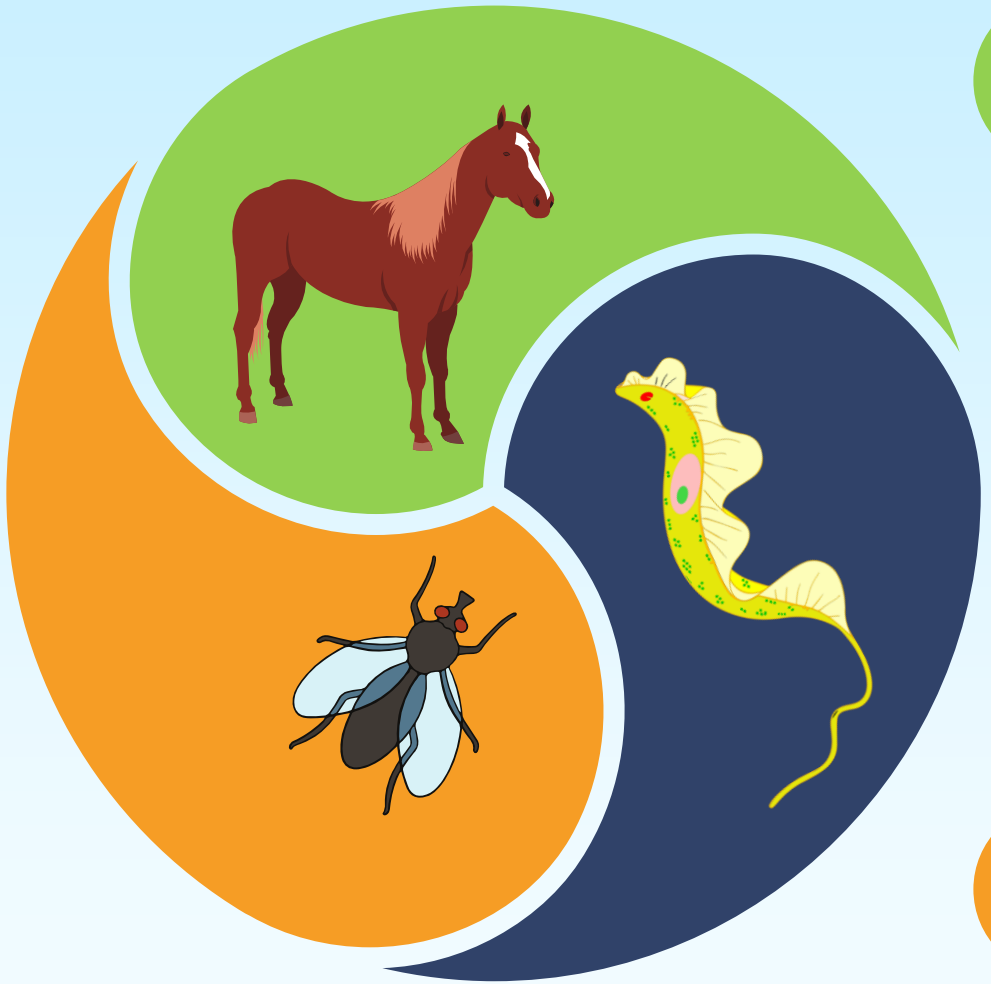
PROBLEMS OF SURRA IN SUMBA ISLAND



1

Livestock reared extensively

Livestock are released into the field or forest, they graze alongside buffaloes and cattle. Additionally, the farmer's residence is situated in a challenging geographical location. There are many animals that may act as reservoir, such as dog, pig, sheep, goat etc.

2

Only one surra drug is available in Indonesia and limited diagnostic tools

Diminazene aceturate (Tryponil) is ineffective for horses. Diagnostic of Surra in Sumba Island just rely on blood smear examination.

3

Vector control program

Sumba Island's biological environment is conducive to the survival of hematophagous flies. However, no suitable vector program exists to manage the Surra vector on Sumba Island.

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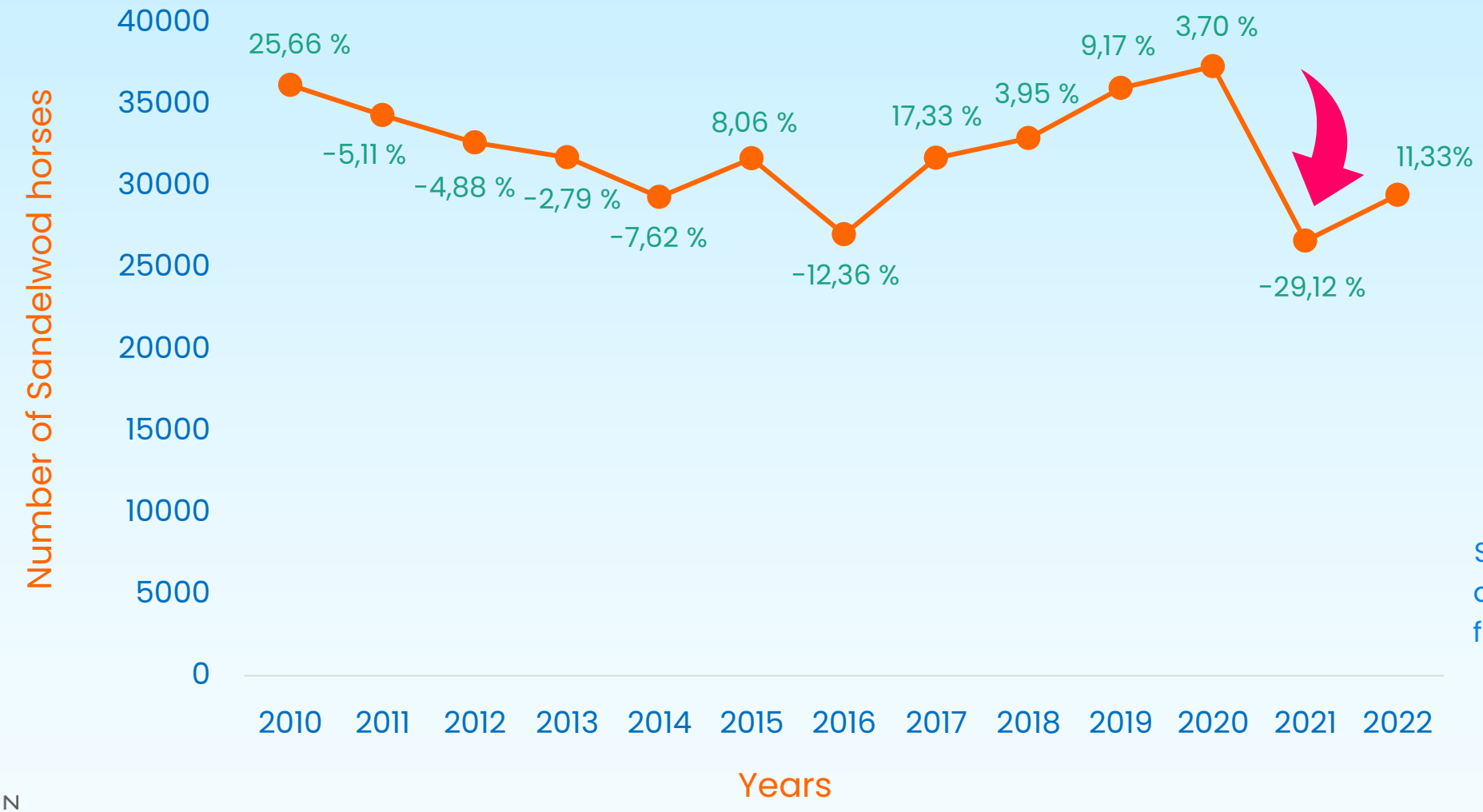
POPULATION OF SANDELWOD HORSE IN EAST SUMBA



Population of Sandelwod horse decreased 29,12% from 2020 to 2021

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PREVENTING THE THREAT OF EXTINCTION OF THE SUMBA SANDELWOD HORSE

The relevant agencies and farmers must collaborate to implement synergistic preventive measures against Surra in horses. For instance, animal movements must be regulated and monitored not only for traditional purposes but also during horse racing events.

The maintenance of the Sandelwod horse population is imperative due to the economic, cultural and social significances that the island's germplasm possesses for the inhabitants of Sumba Island.

Effective surra drugs must be immediately available on Sumba Island (For example : Quinapyramine sulphate/chloride), including the availability of diagnostic kits for serological tests (CATT *T. evansi*) and relatively good quality microscopes to support the diagnosis of surra in horses

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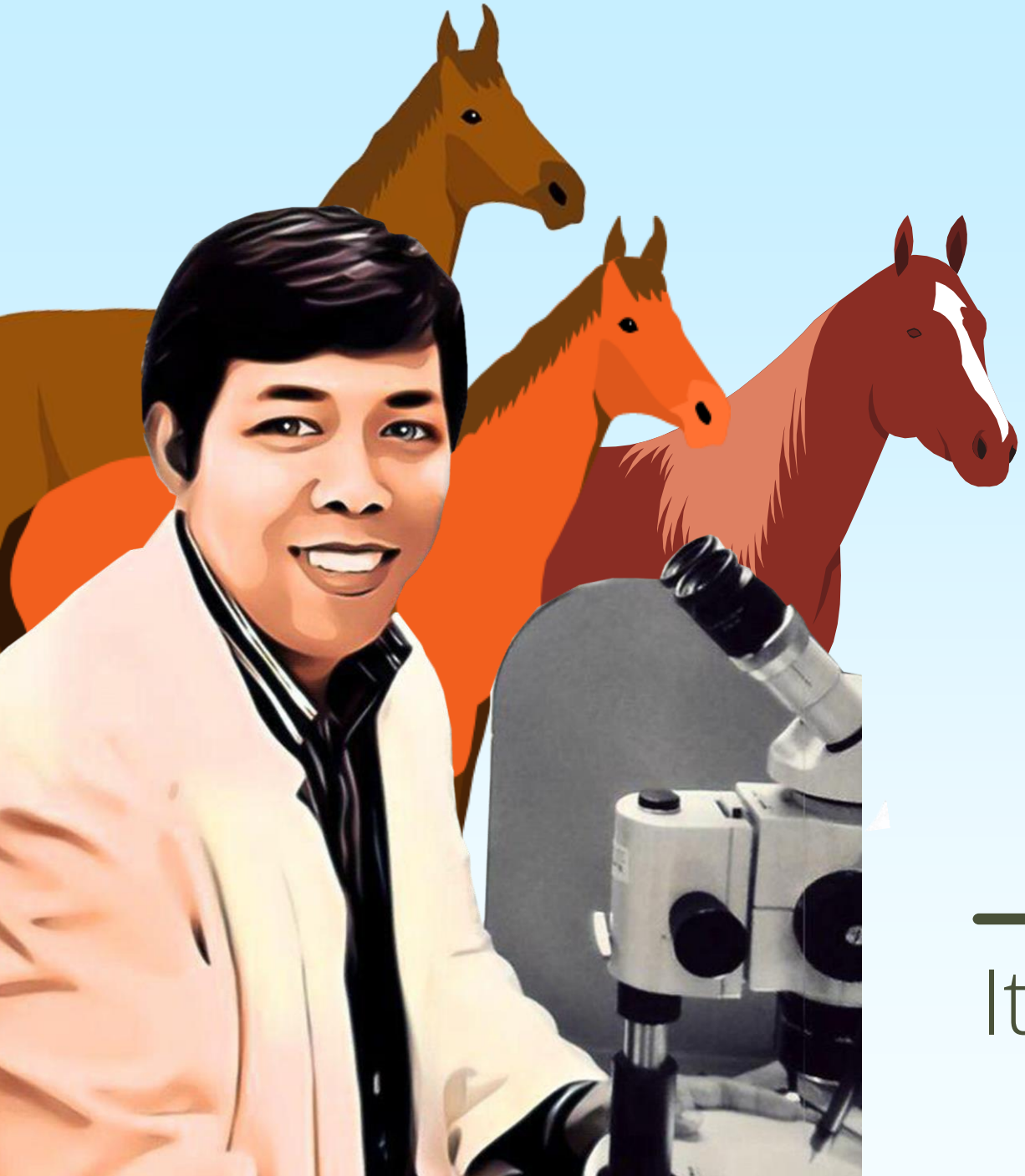

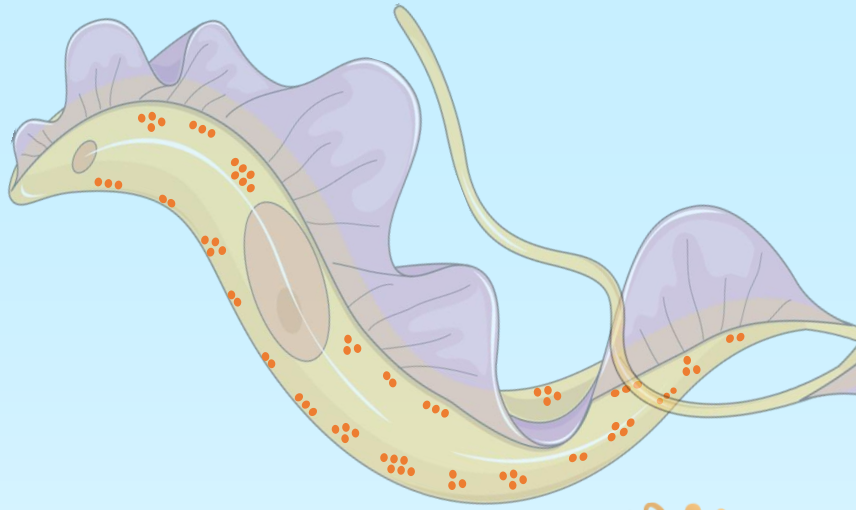

It's time for discussion

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