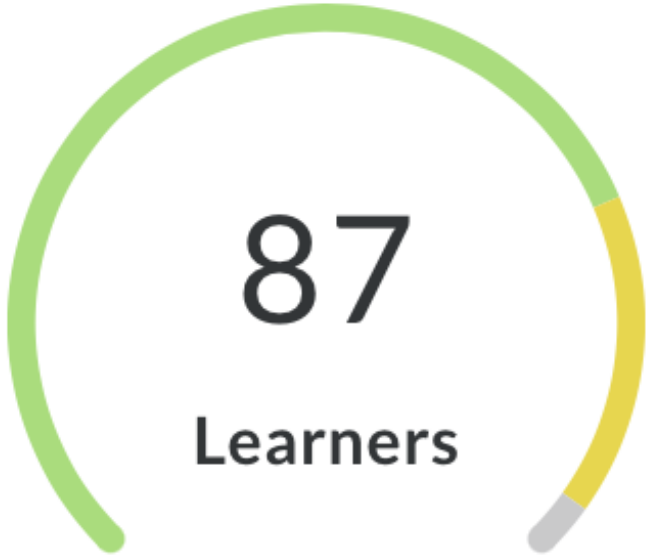
Evaluation of the PPR eLearning module

Dr Navneet Dhand
Dr Mana Mahapatra
Dr Balbir B Singh

World Organisation for Animal Health
Founded as OIE

Thank you for undertaking the eLearning module!



Course status

- 65 completed
- 19 in progress
- 3 not started

Introduction

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About the disease

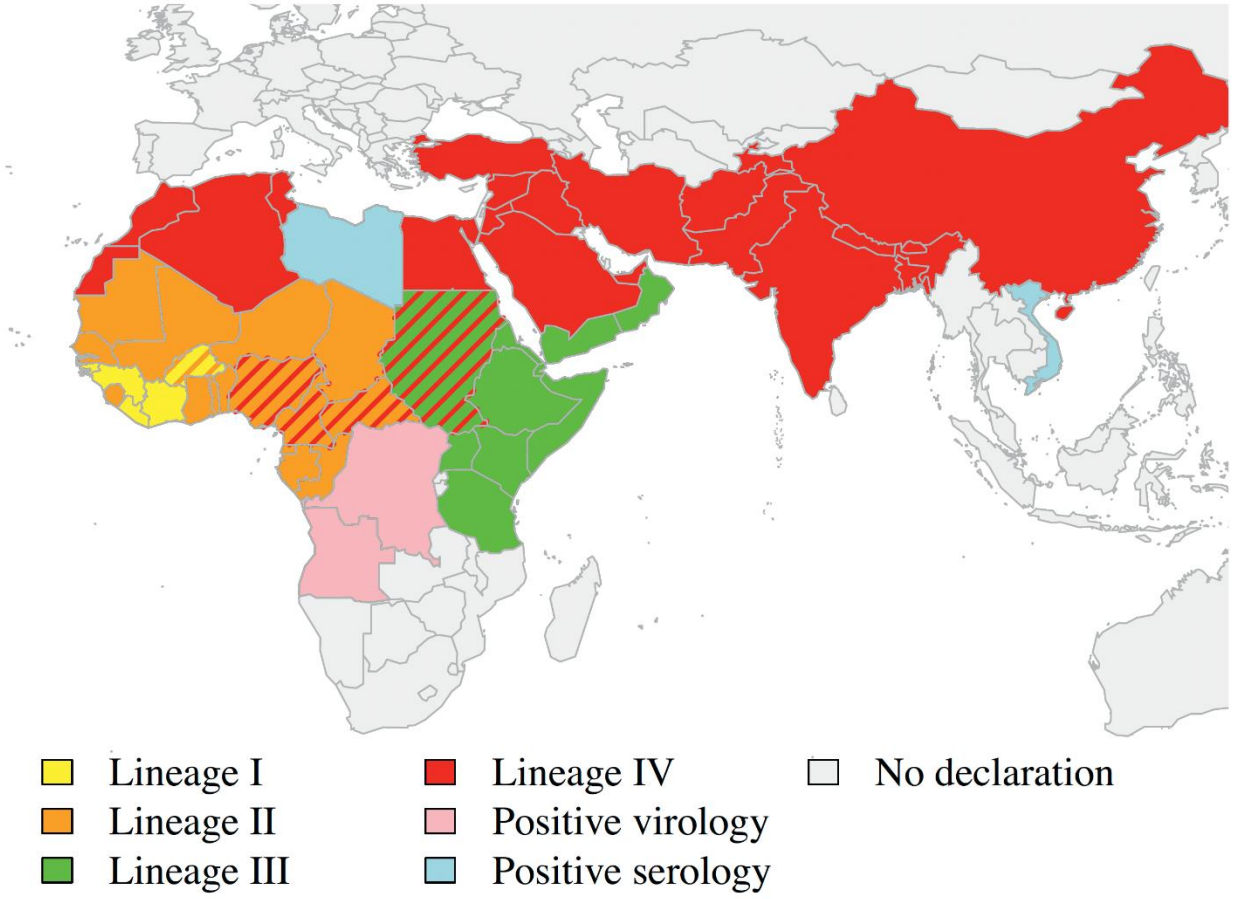
A major viral transboundary disease

Sheep and goats are the primary hosts of PPRV

Several wild ruminants can be infected

Causes high morbidity and mortality

The virus



Genus Morbillivirus of the family Paramyxoviridae

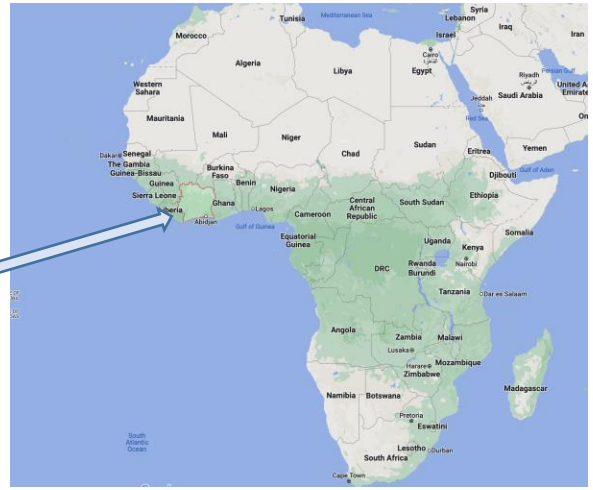
Closely related to: Rinderpest, Measles and Canine distemper virus

Single serotype but four genetic lineages

Mainly transmitted through inhalation of aerosols or direct contact

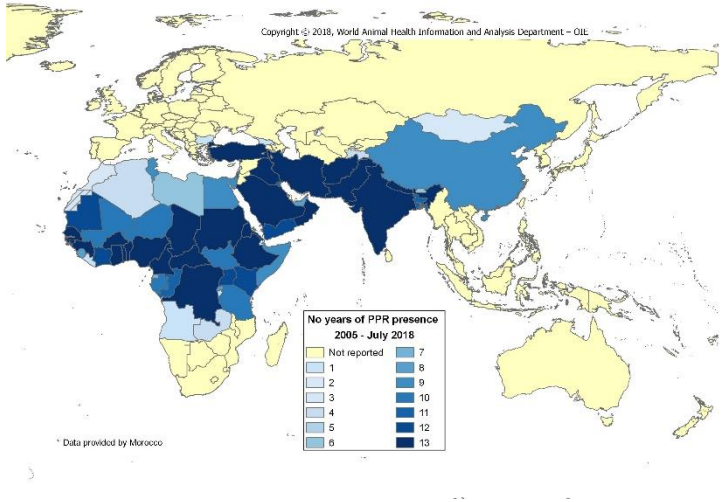
Image courtesy, Banyard et al. (2010) Journal of General Virology, 91, 2885–2897

Distribution and impact



Has spread to 70 countries in Asia, Africa, the Middle East and Europe

Affects 30 million animals each year globally



Causes annual financial losses of USD 1.4 – 2.1 billion

Affects the livelihoods of 300 million families

Map courtesy WOAH

ASEAN region

Historically free from PPR

PPRV introduced in Thailand from Africa in 2021

Diagnosis

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Clinical disease: Acute form

Clinical disease: Variations

Per-acute form

- Occurs in young animals without maternal antibodies or due to the introduction of the virus to naïve populations
- High fever, inflammation of mucous membranes, eye and nasal discharge

- High mortality within 5-6 days

- Erosive lesions, diarrhoea or secondary bacterial infections may not be present

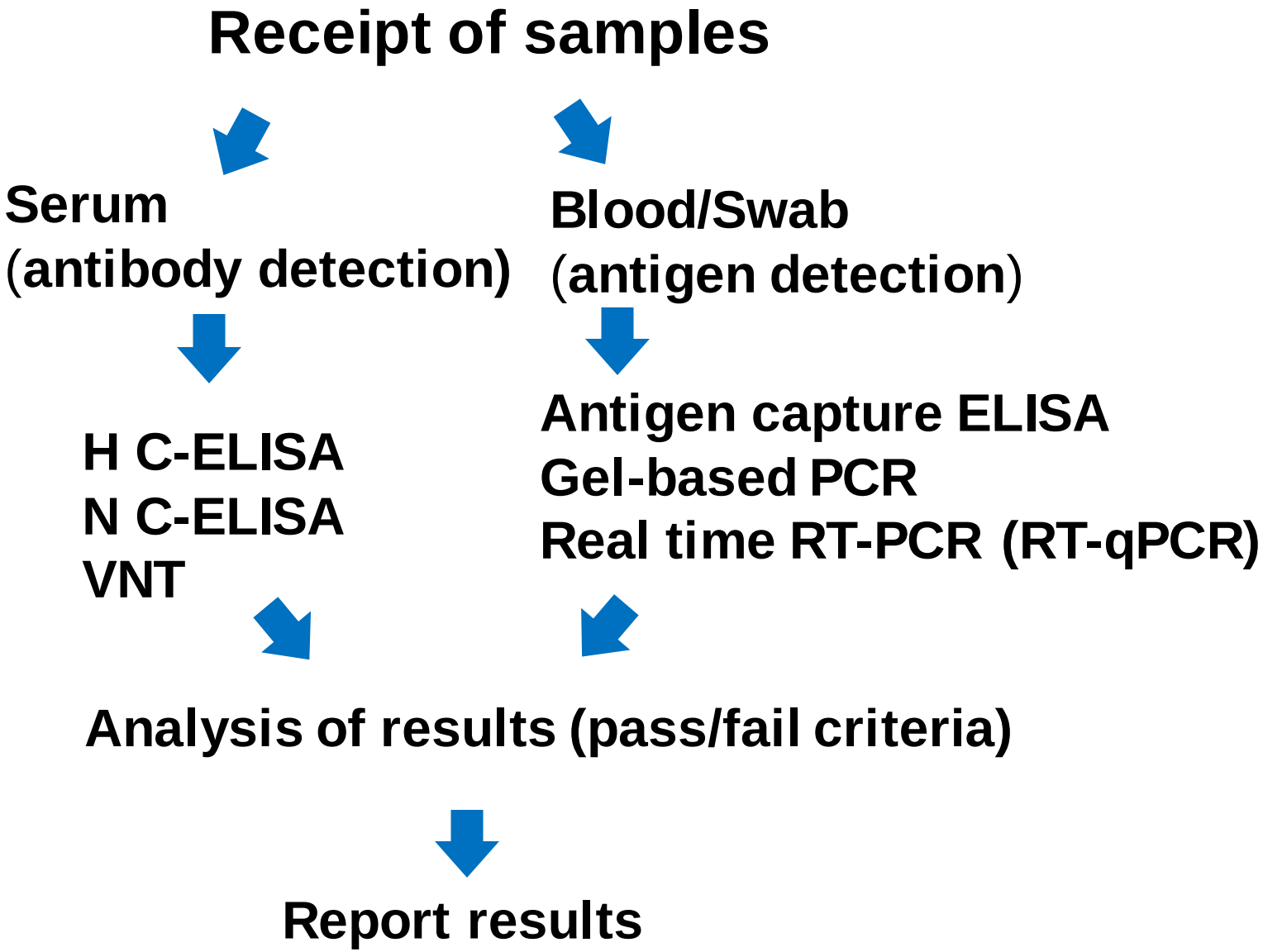
Subacute form

- Milder form
- Moderate fever for 1-2 days
- Other clinical signs may not be evident
- Not usually fatal

Subclinical form

- Asymptomatic infection
- Only evident in serosurveys.

Diagnostic testing profile for PPRV

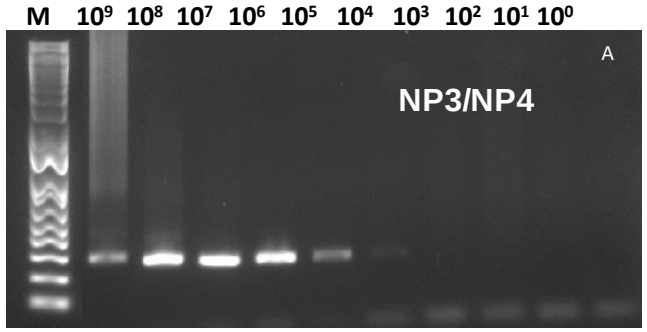


Polymerase Chain Reaction (PCR)

- RNA extraction from blood/swabs/tissues
- Uses primers/probes (in RT-qPCR) in the PPRV N gene
- Robust assay, very sensitive and specific

Gel-based PCR

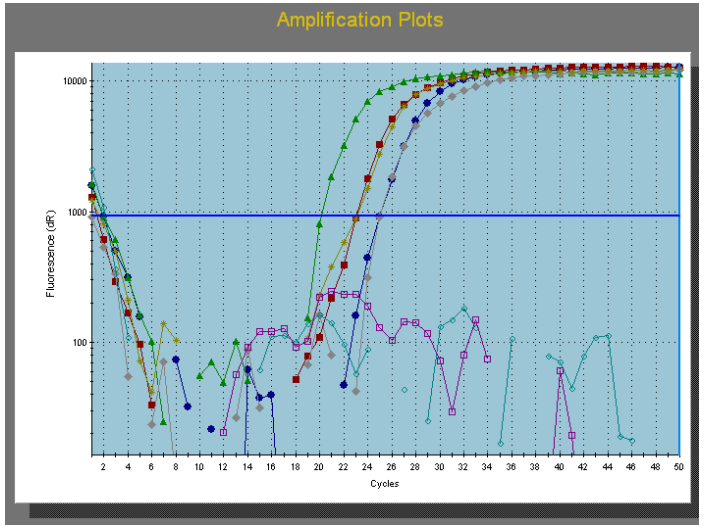
Easy: can be adopted in most labs
Positive if DNA bands visible in gel
Suitable for sequencing



(Couacy-Hymann et al., 2002)

RT- qPCR

Expensive equipment/Trained staff
Positive if C_T value plot crosses threshold
Not suitable for sequencing



(Batten et al., 2011)

Serological tests

VNT

Detects neutralising antibodies against the antigen - gold standard

Limitations:

-Require BSL-3 facilities in non-endemic countries

-Time consuming and technically complex

- Require cell culture facility (Vero/Vero dog SLAM)

ELISA

- Competitive ELISAs - Can be used for multiple species
- Commercially available kits:
  - ID Screen® PPR Competition (N-protein)
  - bELISA from PANVAC (H-protein)

Any query please contact: **manamahapatra1964@gmail.com**

Prevention and control

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Vaccines

©FAO/Luis Tato

Image courtesy, FAO

Nigeria 75/1 and Sungri 96

Effective against all four lineages

Current vaccines do not possess DIVA capabilities and are cold-chain dependent

Development of DIVA and cold chain independent vaccines is under progress

Vaccination

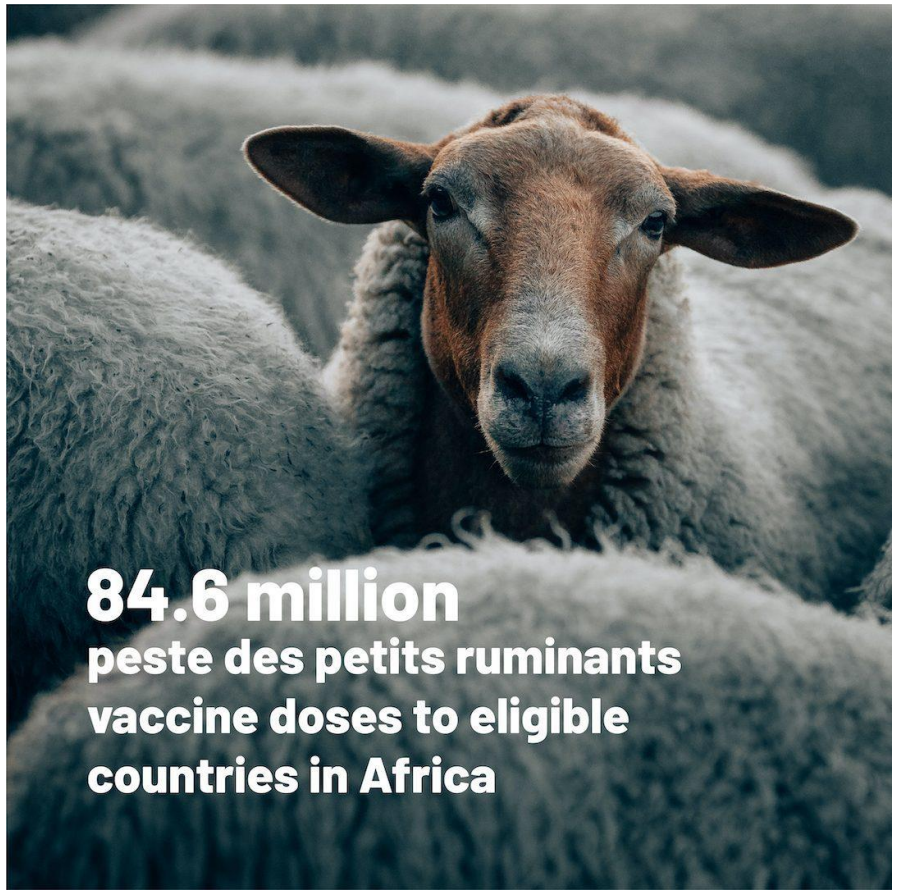

Image courtesy, WOAH

- Maintain cold chain
- Mark vaccinated animals
- Follow good biosecurity practices
- Aim for high coverage
- Adapt mass vaccination periods to farmer needs
- Establish regional vaccine banks

Disease-free regions

©FAO/Luis Tato

Image courtesy, FAO

- Isolate and slaughter all infected and in-contact/exposed animals
- Dispose of carcasses by burning, burying, or rendering
- Decontaminate the premises and all environmental materials
- Quarantine the area and regulate animal movements
- Consider vaccination of high-risk populations or ring vaccination

Endemic regions

©FAO/Luis Tato

Image courtesy, FAO

- Vaccinate > 3-month-old animals
- Follow country strategies for vaccination
- Train the vet workforce to detect and contain outbreaks
- Strengthen PPR surveillance
- Take measures for prompt reporting of the disease

Global Control and Eradication Strategy

Follow a technical step-wise approach

Strengthen Veterinary Services

- Diagnostic systems
- Surveillance systems
- Prevention & control systems
- Legal framework
- Stakeholder involvement

Control other priority small ruminant diseases

Strategy for the ASEAN region is under development

Image courtesy, WOAH

Disease freedom

A country may be considered PPR-free when PPR has not been present for at least the past three years

More on this in the next talk

Evaluation of the eLearning Module

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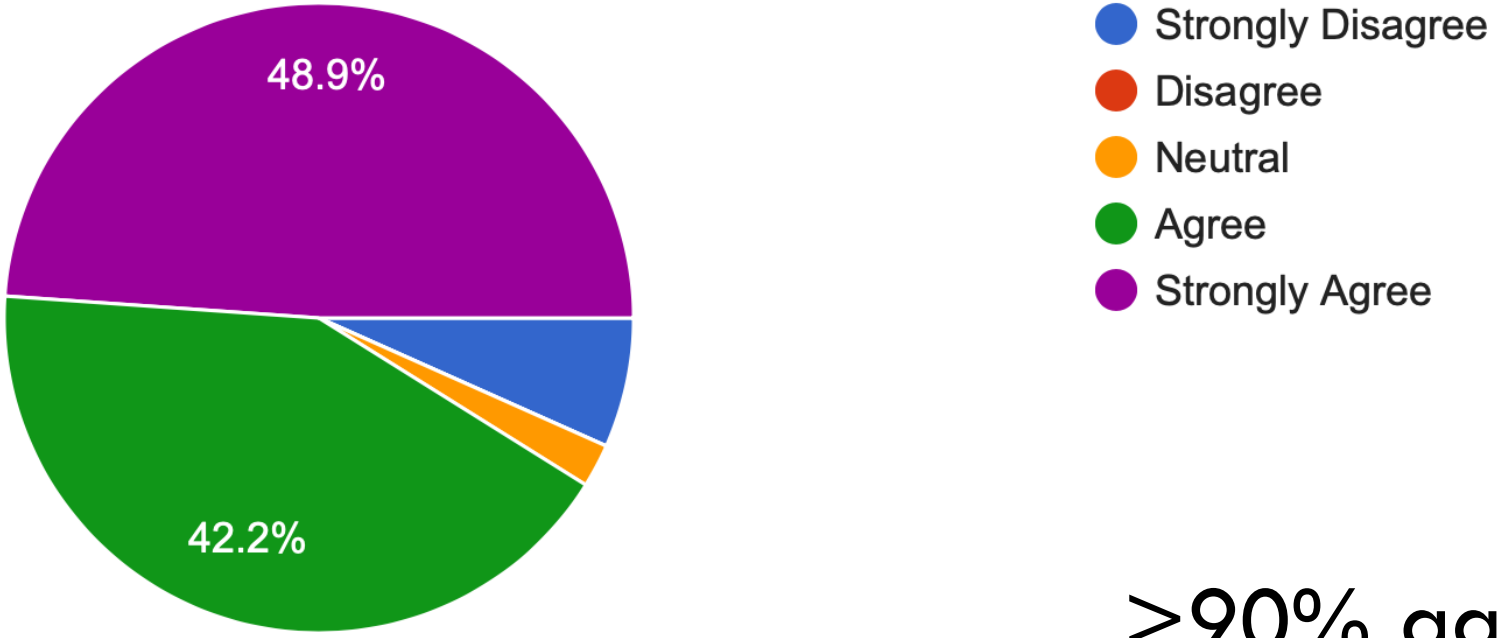
Learning outcomes

The learning outcomes of the e-learning module were clearly stated.

45 responses

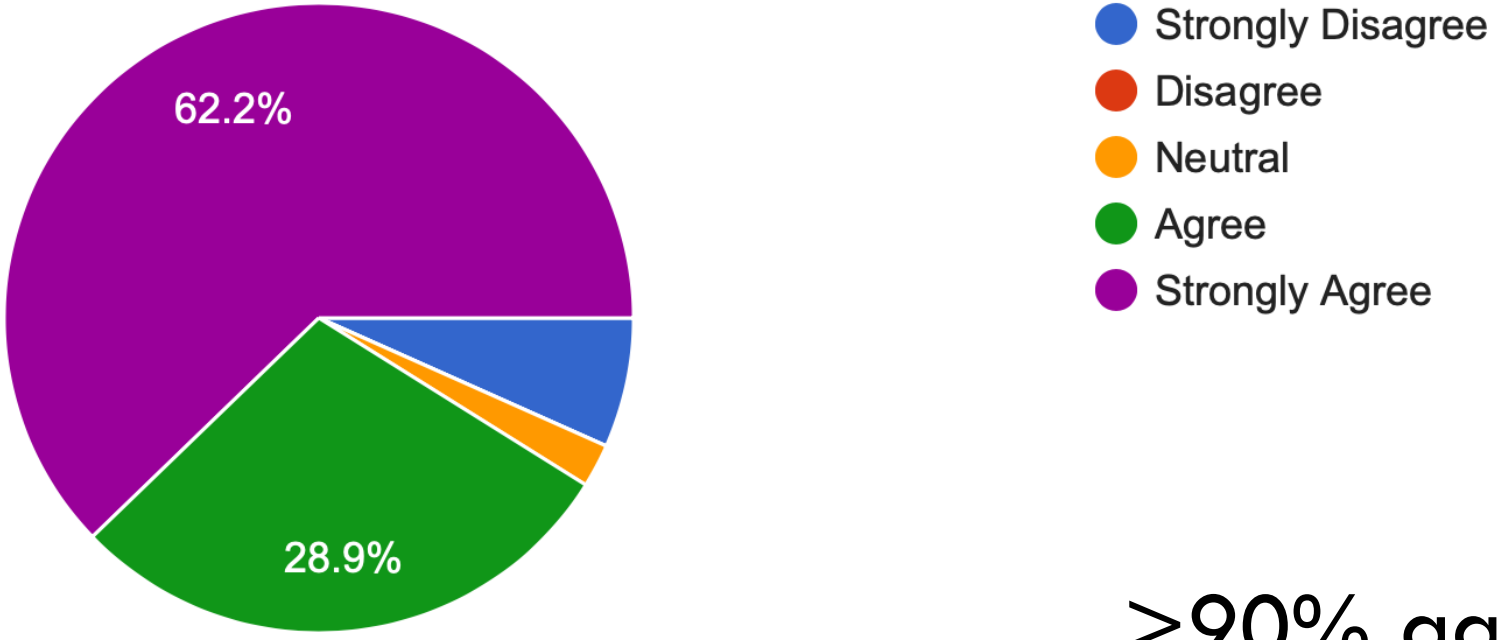


>90% agreement

Content

The content of the e-learning module was arranged in a clear and logical way.

45 responses

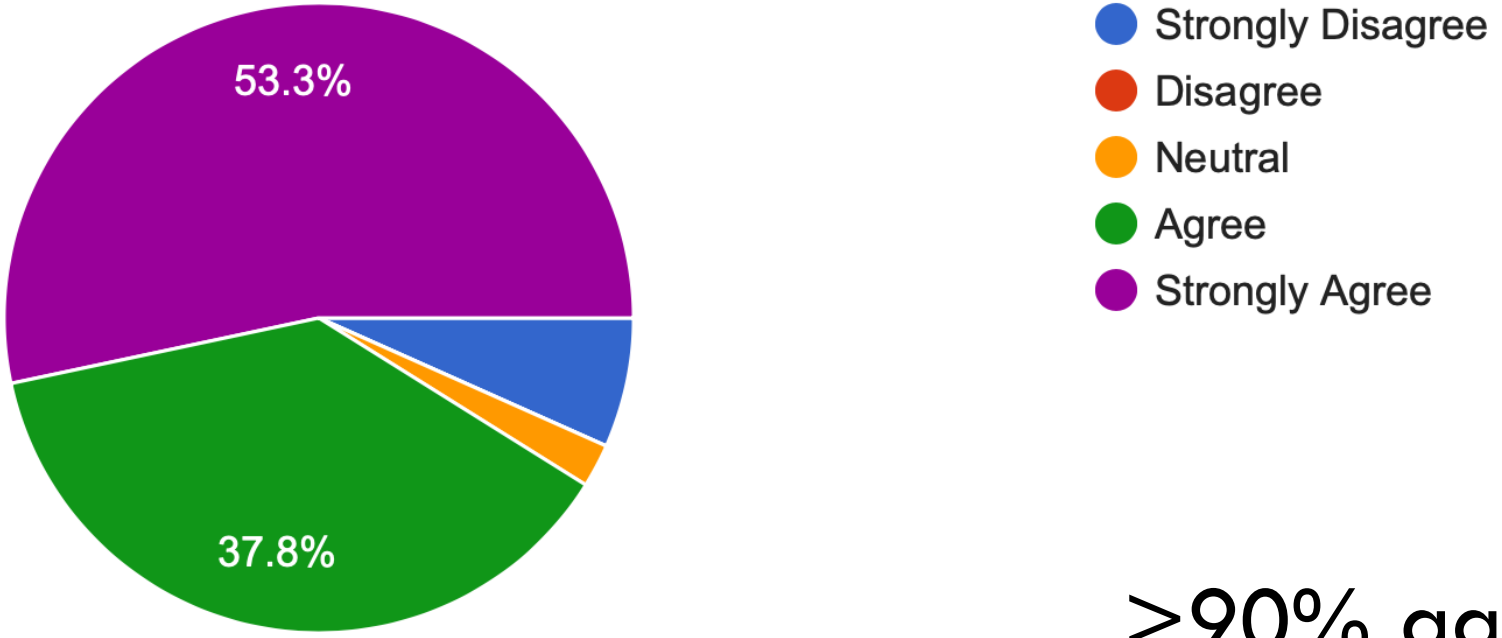


>90% agreement

Relevance

The content of the e-learning module is relevant to me.

45 responses

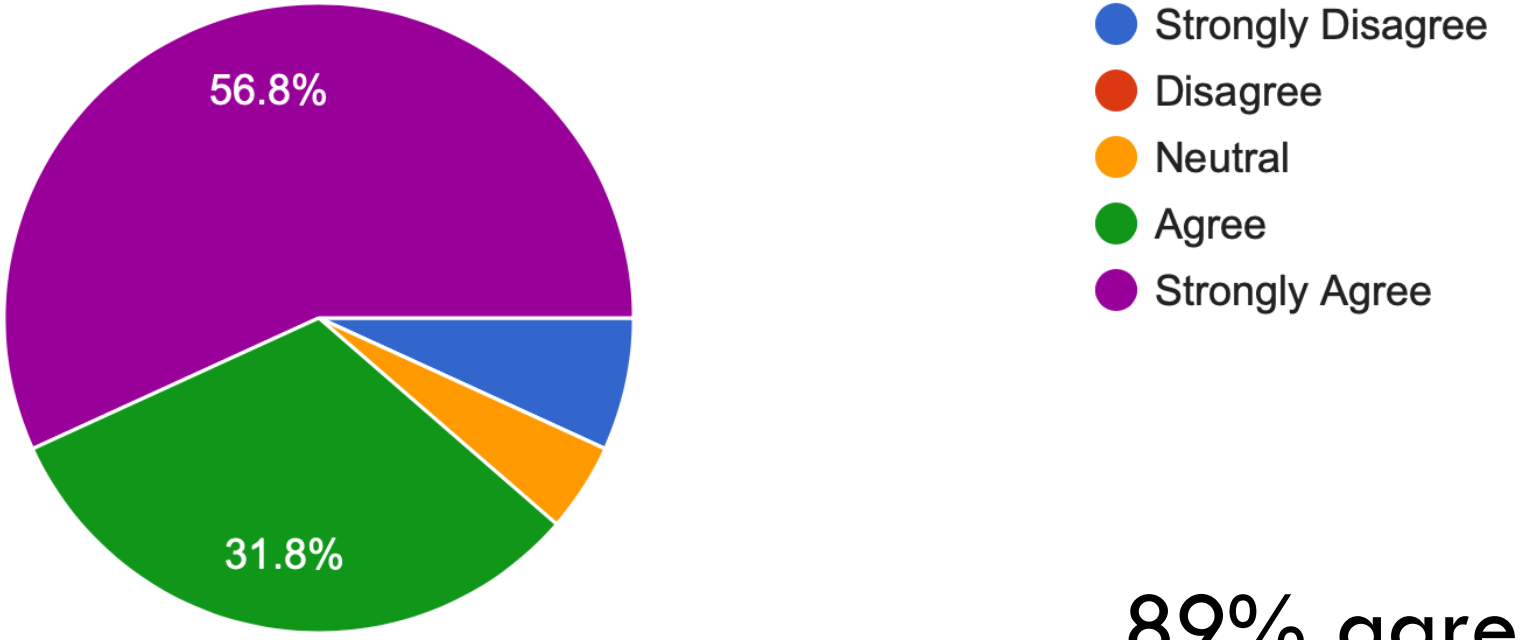


>90% agreement

Module navigation

The e-learning module was easy to navigate.

44 responses

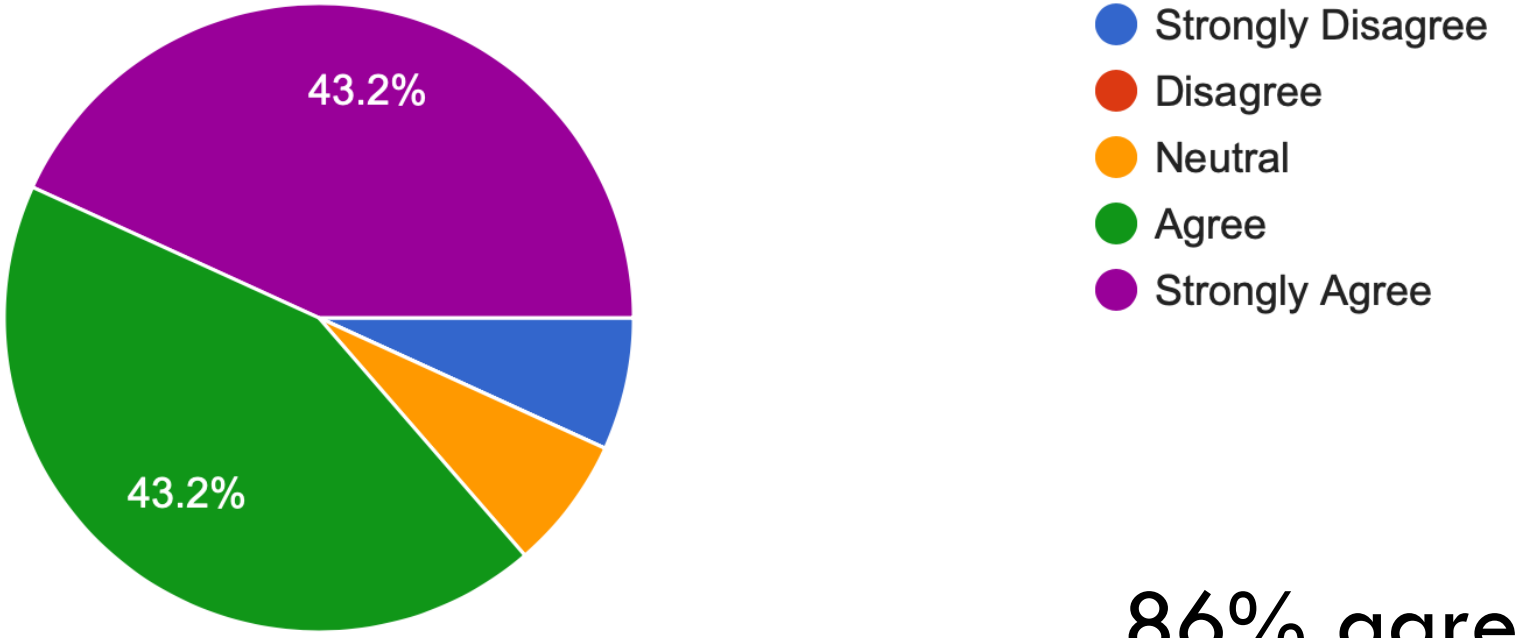


89% agreement

Intuitive design

The overall design of the e-learning module was intuitive.

44 responses

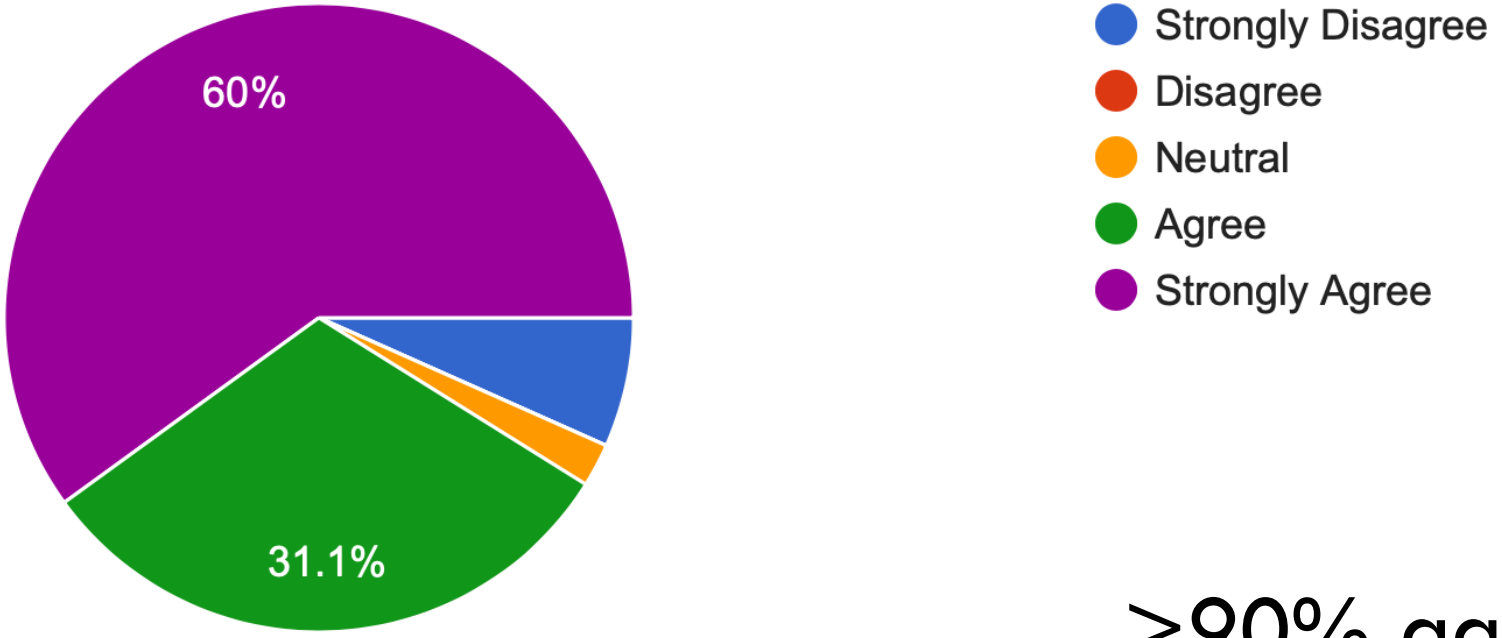


86% agreement

Assessment

The assessment questions were related to the module's learning outcomes and the content.

45 responses

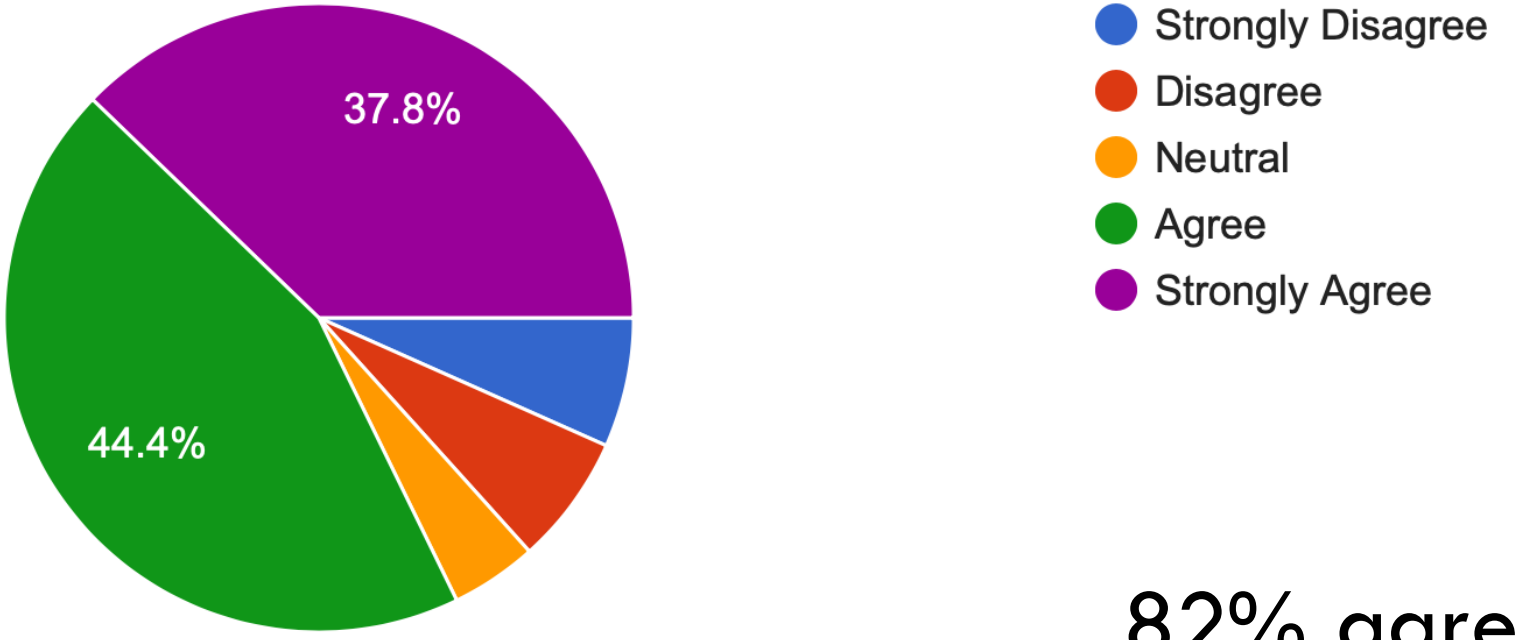


>90% agreement

Functional links

The links within the e-learning module were functional.

45 responses

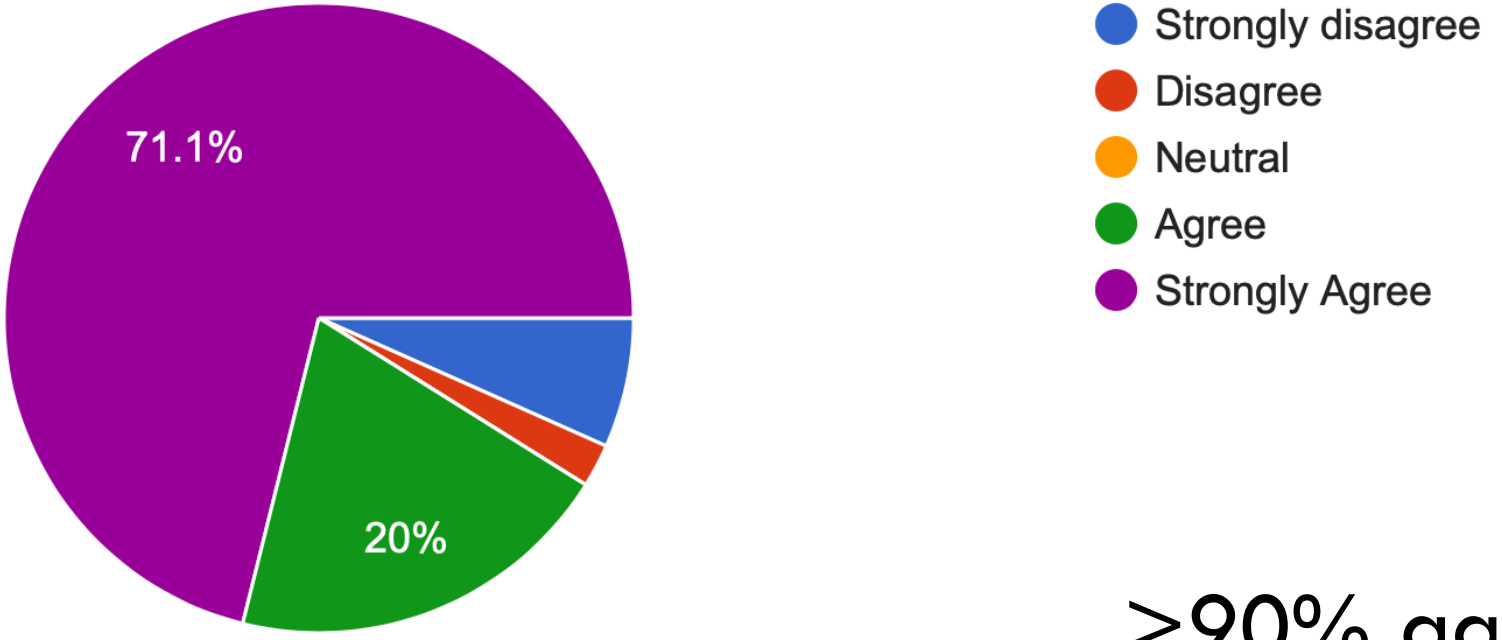


82% agreement

Overall satisfaction

Overall, I am satisfied with the quality of the e-learning module.

45 responses



>90% agreement

What did you like about the module?

Videos

Pictures

Infographics

Sound recording

Interesting

Interactive

Informative

Summarised information

Practice exercises

Easy way to learn

Straight to the point

Clinical signs

Study in my own time

Easy to follow

The flow of the module

Clear presentation

Easy to navigate

User friendly

How can we improve this e-learning module?

Add more info on vaccination

More info on laboratory techniques

Classify stages of the disease

Quiz in each section

Delete some repetition

Add more infographics

Add more images and videos

Add more interactions

Simplify

Follow up learning

Any other feedback

Make eLearning modules for other diseases

Develop modules on zoonotic diseases

Provide lists of commercial test kits

Organise face-to-face training

Allow undertaking the module after the 18th

Share the module with vets more broadly

Acknowledgements

- Dr Karma Rinzin, WOAH Sub-Regional Representation for South-East Asia, Bangkok, Thailand.
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Thank you

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