

Presentation Title: Challenges and Opportunities for Brucellosis Diagnosis, Surveillance and Control in Cambodia

Country: Cambodia

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Diagnosis

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Follow-ups done since last training in August 2025*

brucellosis preparedness, including:

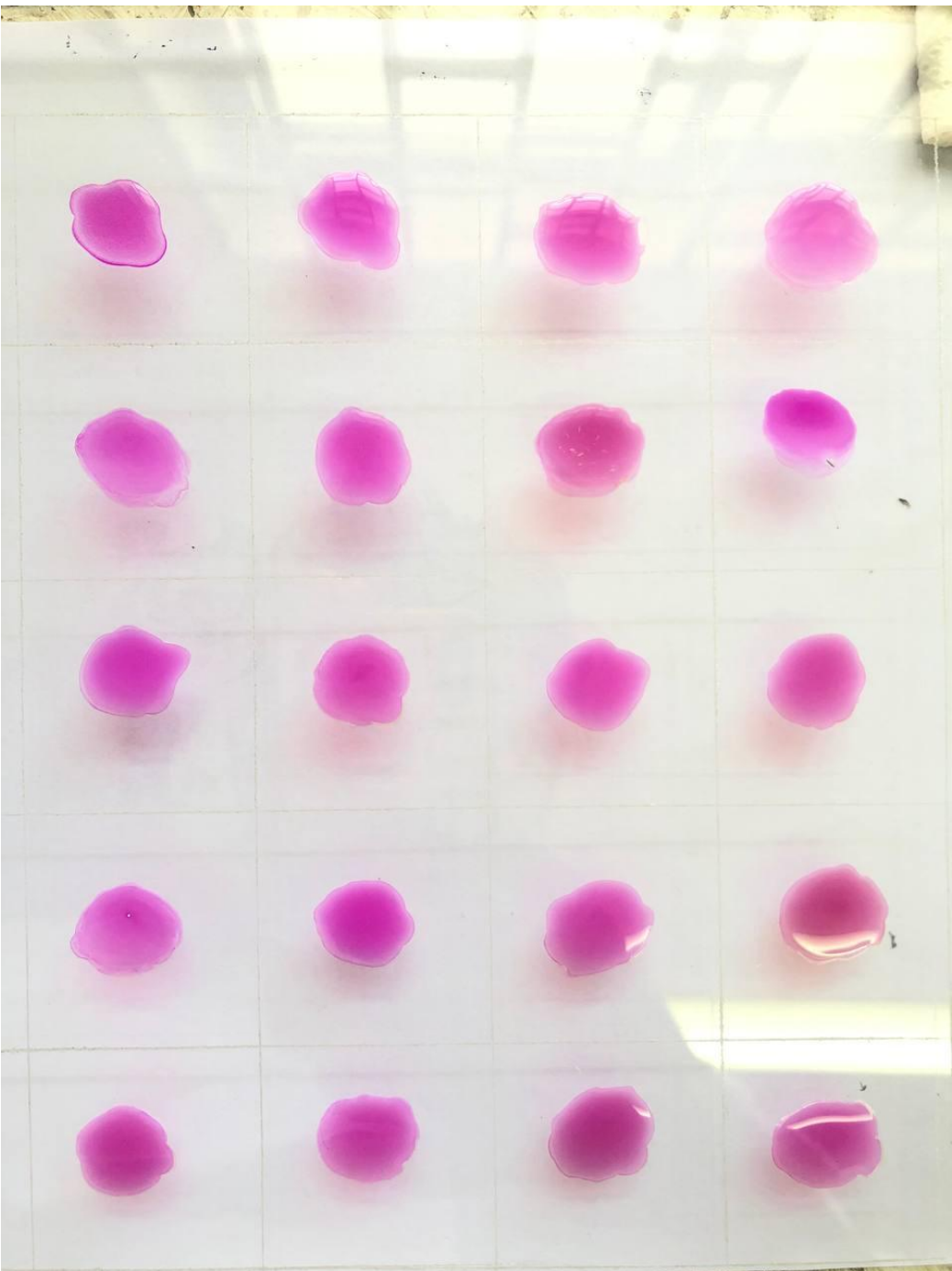
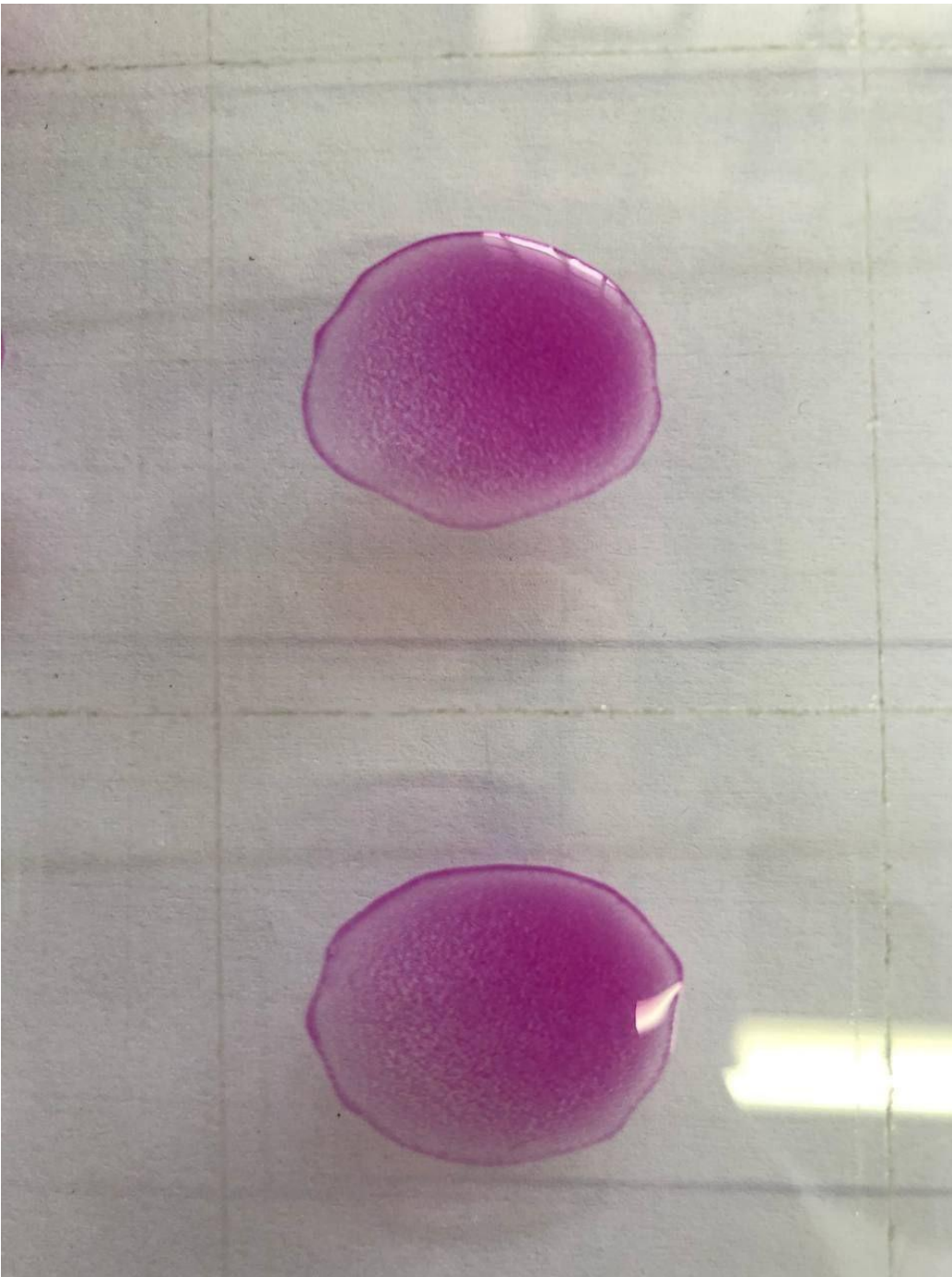
- enhanced outbreak investigation procedures, as national guideline
- stronger integration of animal-human coordination system
- Establish hotline reporting system for all zoonotic disease in Cambodia

Current disease situation

- Cattle: around 3–4 million head
- Pigs: around 2–3 million head
- In 2019, Cambodia reported the following diseases to OIE WAHIS: Brucellosis (*Brucella abortus*): suspected, human cases confirmed.
- Two samples tested positive for brucella antibodies (0.2% (0.4, 0.6), n = 1,141) (our surveillance report) in 2020 in cattle and pig.
- Limited routine diagnostic testing capacity in rural areas
- *Brucella abortus* *Brucella melitensis* and *Brucella suis* in South East Asia

Disease Diagnostics

- summary of the laboratory diagnostic capacity and current diagnostic tests used



Procedures

Modified Rose Bengal Test (mRBPT)

Rose Bengal Plate Test is the test for screening brucellosis in cattle, sheep and goat infected herds. It is a spot agglutination test for individual animal. The positive result is submitted for complement fixation test.

Method

	Cattle	Sheep and Goat
Serum	30 µl	75 µl
Antigen	30 µl	25 µl

1. Bring serum sample and antigen to room temperature.
2. Drop out of each serum sample with micropipette on a glass plate.
3. Shake the antigen bottle well and place the antigen with micropipette near each serum spot.
4. Mix thoroughly to produce a circular or oval zone approximately 2 cm in diameter.
5. Rotating the glass plate with hands gently for 4 minutes.
6. Read the agglutination immediately after the 4 – minute period is completed. Any visible reaction is considered to be positive.
7. Samples giving reactions of agglutination (positive reaction) should be subjected to Complement Fixation Test (CFT test).

A scoring system for results

- ++++ (+ 4) = complete agglutination (100%)
- +++ (+ 3) = incomplete agglutination (75%)
- ++ (+2) =incomplete agglutination (50%)
- + (+1) = incomplete agglutination (25%)
- (+0) =no agglutination

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Rose Bengal Plate Test (RBPT) Worksheet

☐ Cattle ☐ Pig Case No -
☐ Goat ☐ Sheep Received Date - RBPT Batch:
☐ Other Test Performed Date - Expire Date:

Specimen Description _____

OBSERVATIONS							
Sr. No	Sample ID	Score	Result	Sr. No	Sample ID	Score	Result
Comment							

Authorized _____ Operator _____



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Brucellosis Serology SOP

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REVISION PAGE

Versions

*Main Author is defined as the principal writer / contributor to the document and who takes responsibility for its technical content.

Version	*Main (Responsible) Author	Authorised by	Authorisation Date (dd/mm/yy)
1.0	Dr. Chea Rortana		

Disease Surveillance

Abattoir-Based Serological Surveillance for Transboundary and Zoonotic Diseases in Cattle and Swine in Cambodia: A Pilot Study in Phnom Phen Province During 2019 and 2020.

Sample: cattle (Serum)
N sample: 403 samples
Site: Slaughterhouse
Location: 15 provinces (15/25) of Cambodia

Row Labels	Prevalence of Antibody
Negative	399
Positive	4
Grand Total	403

Sample: Pig (Serum)
N sample: 774 sample
Site: Slaughterhouse
Location: 5 provinces (5/25) of Cambodia

All sample negative for antibody

Figures



Figure 1

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Disease Prevention and Control or Preparedness Strategy

(National Guideline for Zoonotic Outbreak & Respond

1. Surveillance & Investigation Taskforce

- Case detection and reporting
- Epidemiological investigation
- Sample collection and laboratory testing

2. Prevention & Control Taskforce

- Biosecurity implementation
- Disinfection and sanitation
- Culling or treatment measures
- Quarantine and movement control

3. Communication & Coordination Taskforce

- Risk communication
- Public awareness campaigns
- Coordination among ministries/agencies
- Community engagement

There is very rare case of Brucellosis, however,

- surveillance systems is not in place
- laboratory infrastructure and reagent order difficulty
- workforce development, in Lab and in Field
- Community awareness

There is no National Strategic Plan Yet.

The future plans would be:

- 1. Strengthening National Surveillance Systems**
- 2. Enhancing Laboratory Capacity and Field Veterinarian for clinical diagnostic**
- 3. Risk-Based Surveillance and Mapping**
- 4. Jion PT test**

Thank you!

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