



World Organisation
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中华人民共和国农业农村部

Ministry of Agriculture and Rural Affairs of the People's Republic of China

Best practices on diagnostics, surveillance and control/elimination efforts for Bovine TB/zoonotic TB

Member- **Sri Lanka**

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Title of presenter- Director/ **Veterinary Research Institute**

Department of Animal Production and Health





- **Country profile**

- Sri Lanka is a tropical Island in the Indian Ocean

with an area of 65 610 km² .

- Livestock contribution to the total GDP

225.8 Rs.billion- (1%)

- **Livestock product exports**

Day old chicks, Hatching eggs, Chicken, chicken

eggs, Pork,

(Pet birds/ornamental fish/shrimp)



- Cattle and buffalo population - 1.8 million
- Milk production - 414 million liters
- Beef production - 29.54 (000 MT)
- Swine population - 0.17 million
- Pork production - 9 (000 MT)
- Goat population - 0.7 million
- Mutton production - 1.96 (000MT)
- Chicken meat production - 216.16 (000 MT)
- Egg production - 2435 (000 M)



- **Current disease situation**

- Bovine tuberculosis has been reported and confirmed in cattle in Sri Lanka since 2012 as reported by Department of Animal Production and Health. (Kumara et al., 2014; Kumara et al., 2015).
- However a limited number of research have been done in Sri Lanka on the status, spread and control of the disease both in human and animal populations.
- During the last few years there had been several deaths of cattle due to tuberculosis in few farms in Central Province of Sri Lanka.
- Started active surveillance in central province of Sri Lanka and passive surveillance in rest of the country.



- **bTB surveillance - central province Sri Lanka**

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- Consist of 3 districts (Kandy, Nuwara Eliya, Matale)
- Cattle population- 80,000 (Friesian, Jersey crosses)
- Climate – 16C⁰- 24C⁰
Wet humid
- Cattle management system – Mostly Intensive type





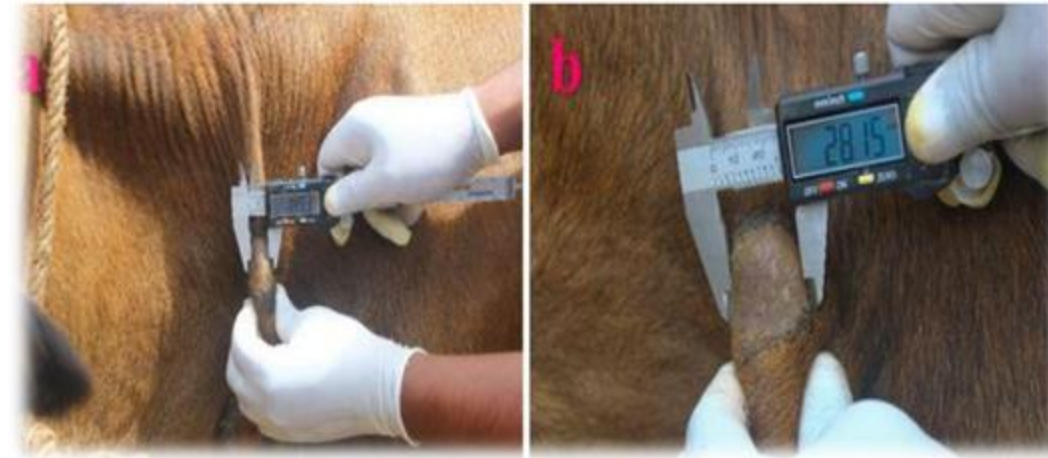
bTB surveillance - central province Sri Lanka

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- **Objective** - Investigate the prevalence of the bTB among cattle and buffalo herds in the Central Province of Sri Lanka.
- **Cattle and buffaloes** were included as the study population. Calves under 6 months of age and cows with more than 7 months of pregnancy were excluded from the study
- **Sample size** – 616 animals
- **Performed** of SICCT test (Single Intradermal Comparative Cervical Tuberculin test)



Negative reaction to the SICCT test; a. avian site, b. bovine site.



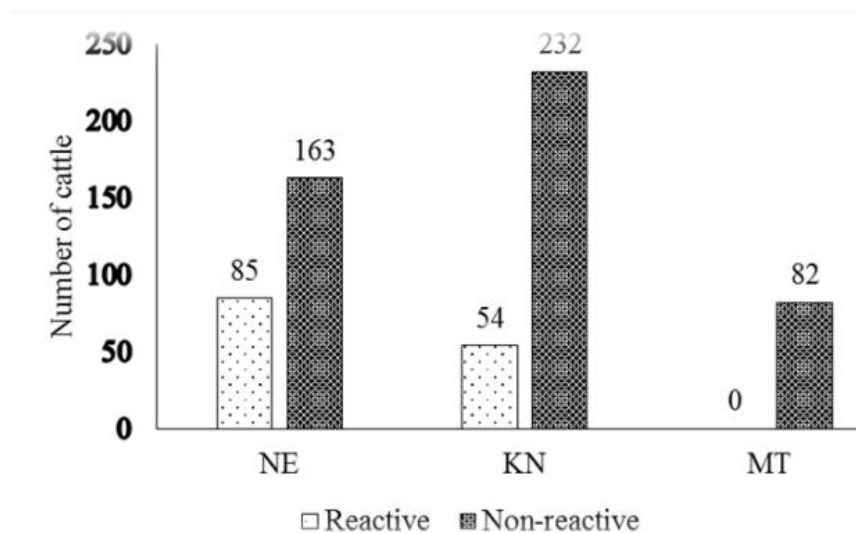


- **bTB surveillance - central province Sri Lanka**

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- Aliquots of 0.1ml containing 25,000 IU/ml of bovine PPD (CZV Bovine Tuberculin PPD, CZ Veterinaria, S.A, Spain) and 0.1ml with 25,000 IU/ml of avian PPD (CZV Bovine Tuberculin PPD, CZ Veterinaria, S.A, Spain)
- Rapid bTB Ab test
- The testing of sera for bTB Ab was performed using Rapid bTB Ab test kit (Quicking Biotech Co., Ltd, Shanghai, China).



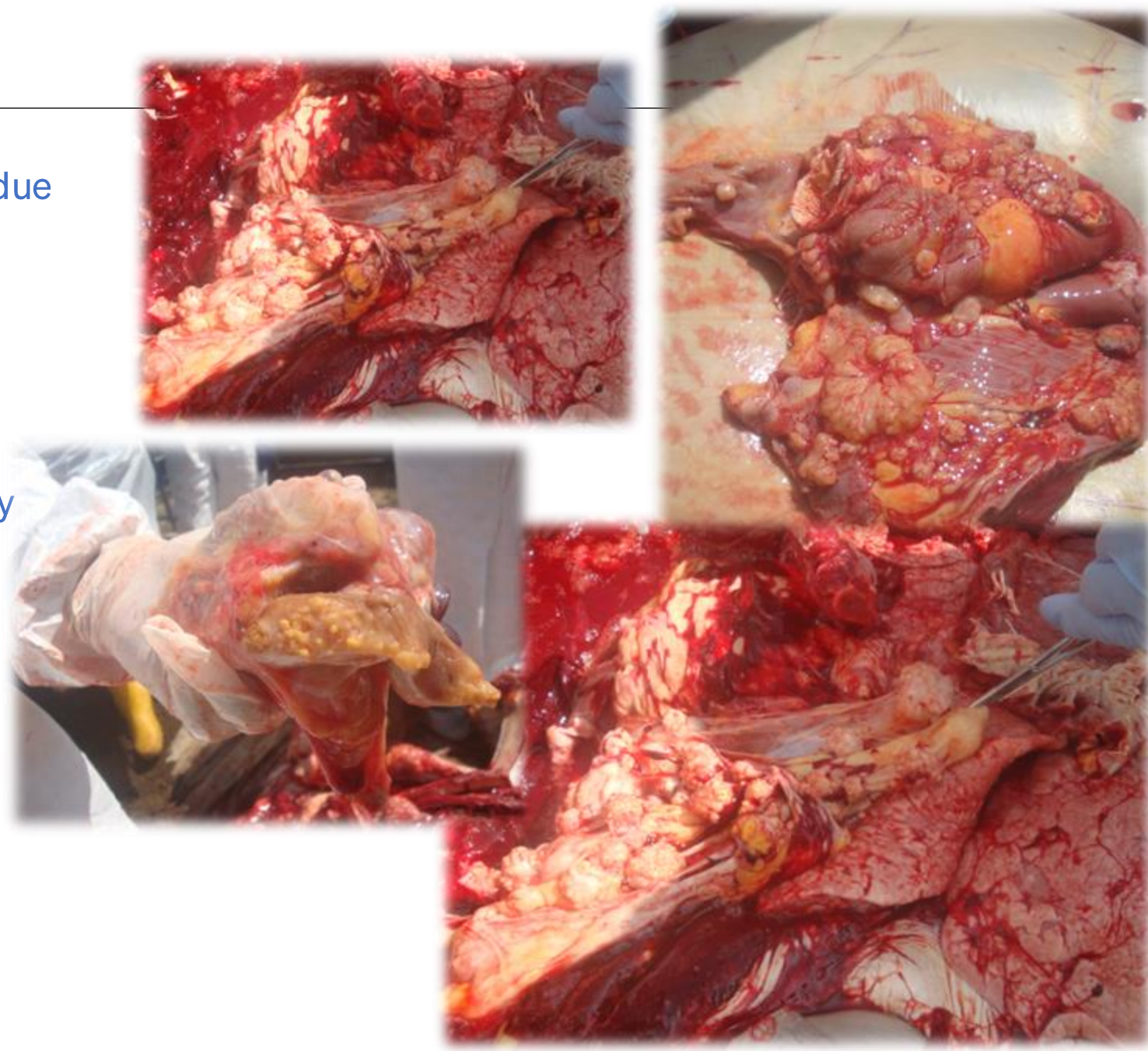


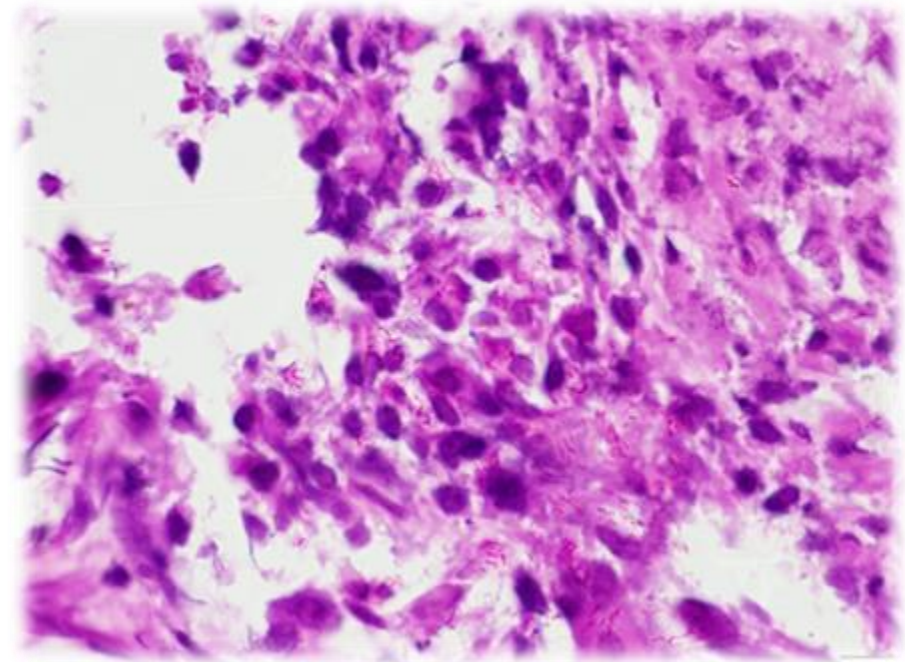
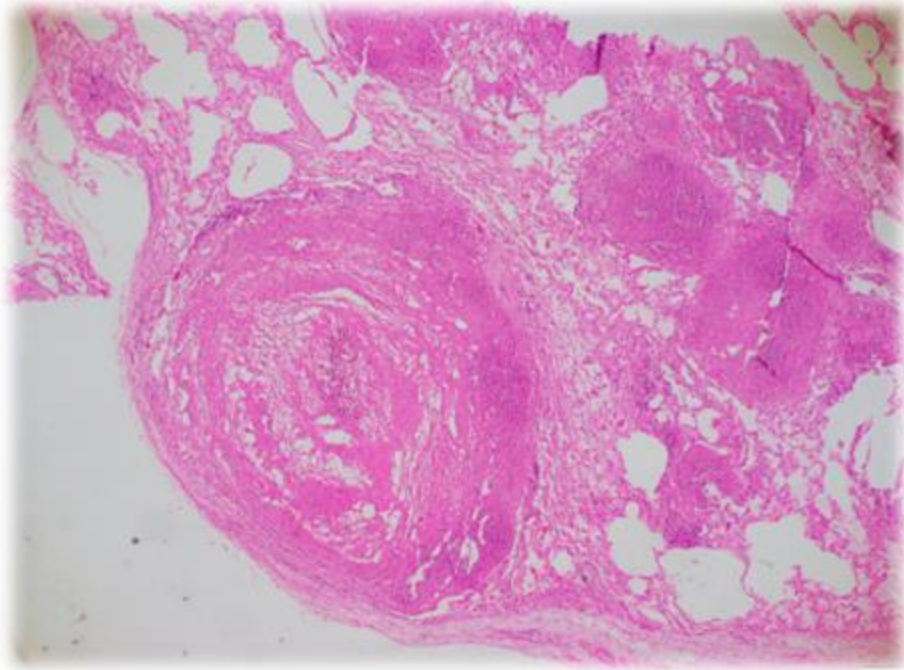
The estimated prevalence of bTB among cattle in the CP of Sri Lanka was 22.6%, as determined



• Postmortem lesions

- Few cattle has shown clinical signs in due course
- Few cattle deaths were observed. (6)
- 54 cattle's were culled out immediately those who have shown clinical signs.
- Others isolated and subsequently cull out







- *Laboratory diagnostic capacity and current diagnostic tests used*
- *Histopathology- Staining techniques –ZN, H&E,*
- **Mycobacterium 7H11 agar(DIFCO) with OADC enrichment/BBL Middlebrooks culture on Lowenstein Jensen Medium base(Difco)**
- *PPD skin test for screening*
- *Gamma interferon assay - ELISA*



Disease Surveillance

- *Passive surveillance is conducted to suspected cases (suspected clinical signs)*
- *Government farms and large commercial farms are conducting active surveillance biannually.*
- *Positive reactors are isolated and subjected to cull after serology.*





- *Prepared prevention plan for government and large scale commercial breeder farms 2023/2024.*
- Testing of animals for Tuberculosis
- Screening of animals in all farms annually by Tuberculin Skin Test (TST)
- If one or more animals are TST positive for annual testing in any farm, it will be considered as infected farm and positive animals will be immediately isolated within the farm for subsequent culling.
- An infected farm should be tested bi- annually
- The clinically diseased animal in all farms should be culled (slaughter) and disposed in the presence of a DAPH monitoring team
- Restocking should be considered only 2 yrs after the culling of animals after consultation with DAPH



- The infected farm should be fenced to prevent the exposure of wild animals to the infected and vice versa.
- Development of wild animal surveillance/testing program
- Any animal in infected farms, their products and by products of animal origin should not be distributed or sold to outside of the farm for any purpose other than culling process.
- The details of animals already distributed to the field from infected farms should be informed to Director Animal Health (DAH) by farm managers and, will be tested by the respective field officers.
- The animals in infected (TST positive) farm should not be moved to either outside of the farm or introduce new uninfected animals to the farm
- TB awareness programs should be conducted for farm managers/workers and animal handlers by NLDB authority with the collaboration of regional officers of Ministry of Health



- All workers of the infected premises should be followed routine testing for TB annually
- The farm manager should make sure that milk in infected farms are subjected to suitable processing methods (pasteurization or any other means) to destroy the organism
- An appropriate Insurance scheme for animals at should be arranged to cover economic losses during culling of animals under disease control activities



1. The prevalence of bTB in the cattle population is not known due to lack of reliable census data, testing, reporting and adequate policy and political will to eradicate the disease.
2. The extent of bTB in humans is unknown as no differentiation between MTB and bTB occurs routinely
3. Cattle testing will continue to rely on the SITT as gamma interferon serological tests are generally not an option due to cost, paucity of laboratories performing these tests, and time and temperature constraints involved.



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Thank you!

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