



**The 4th FAO-APHCA/OIE/DLD Regional Workshop
on
Brucellosis Diagnosis and Control in Asia-Pacific Region
– Proficiency Test and Ways Forward –
Chiang Mai, Thailand, 18-21 March 2014**

Country report
THAILAND

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NIAH, DLD



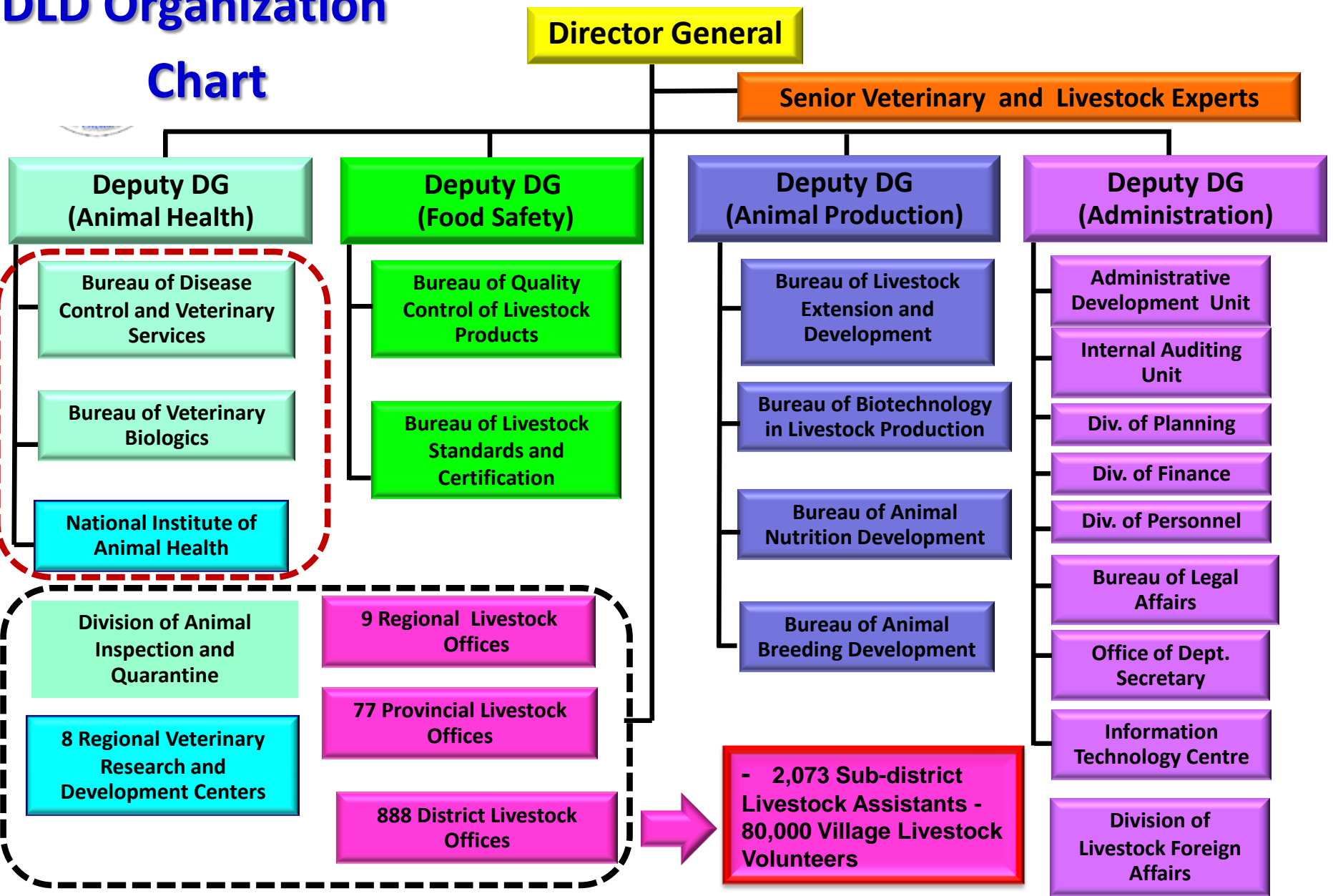


Outline

- **DLD Organization**
- **Brucellosis Diagnosis in Thailand**
- **Laboratory preparedness**
- **Situation of Brucellosis in Thailand**
- **Brucellosis Control Measures in Thailand**
- **Collaboration in “One Health” concept**

DLD Organization

Chart





Animal Health Laboratories

- NIAH, Bangkok
- 8 Regional Veterinary Research and Development Centers (RVRDCs)
- OIE Regional Reference Laboratory for FMD
- Veterinary Biological Assay Center/ASEAN Assay Lab





Thailand: Livestock population and farmers

Species	Population (heads)	Farmers
Dairy cattle	512,205	17,094
Beef cattle	4,530,915	768,834
Buffaloes	877,364	194,508
Pigs	9,511,389	210,978
Goats	440,277	41,674
Sheep	42,040	5,170

Source: DLD Data and Information Center

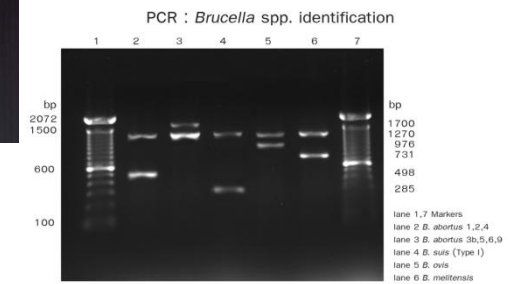
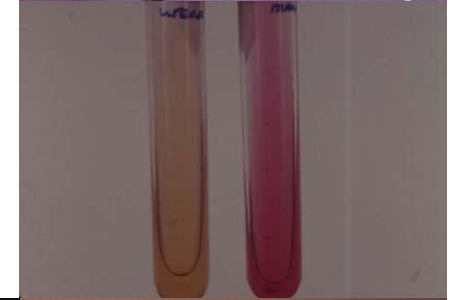
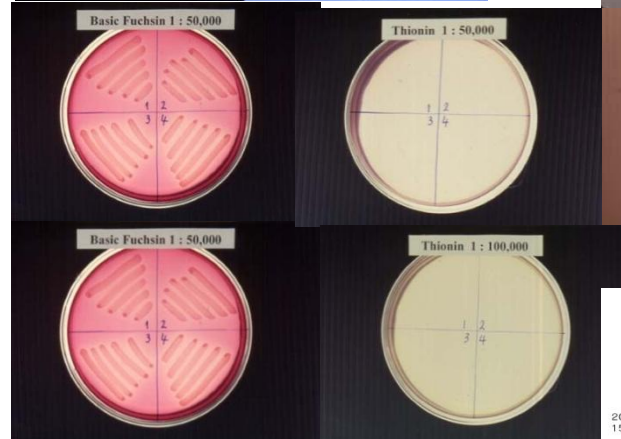
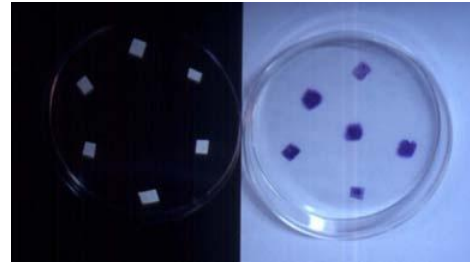
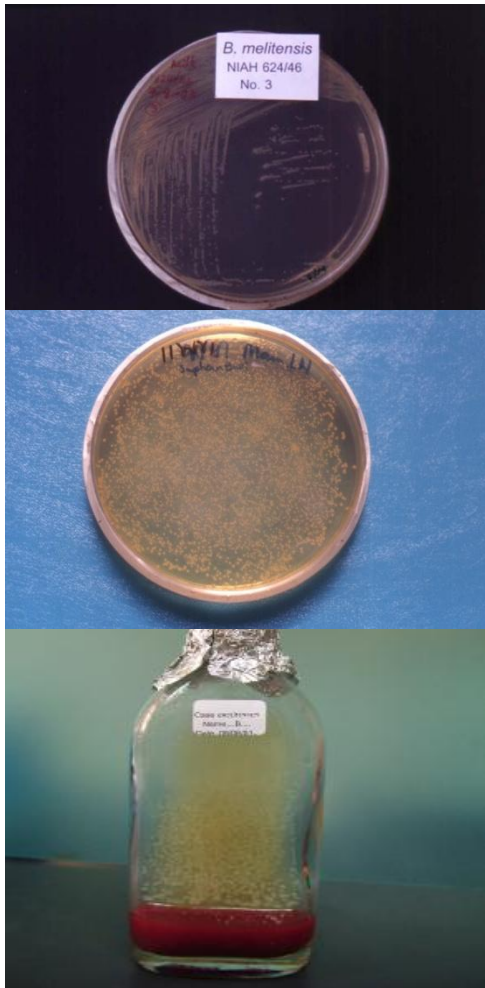


Brucellosis Diagnosis in Thailand

1. **Isolation and Identification of the agents (NIAH)**
 - Isolation of the pathogen/biochemical tests
 - PCR for identification

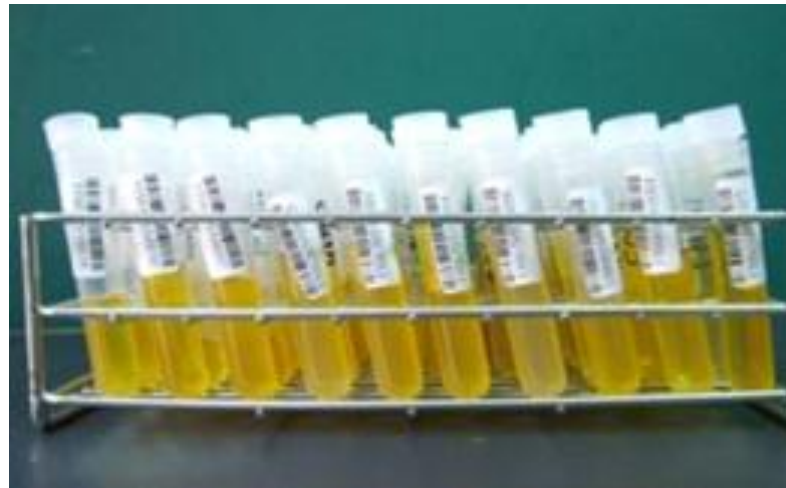
2. **Serological tests**
 - Buffered *Brucella* antigen tests: RBT
 - (EDTA-SAT)*
 - CFT
 - I-ELISA

Brucella spp. isolation and identification



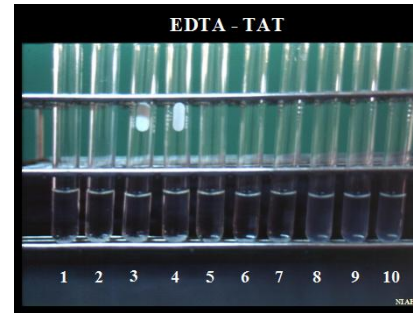
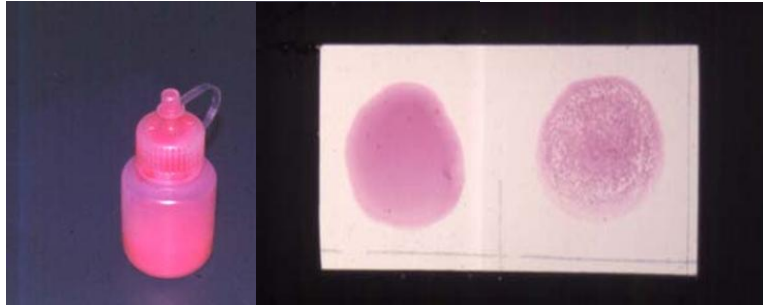


Serological Testing

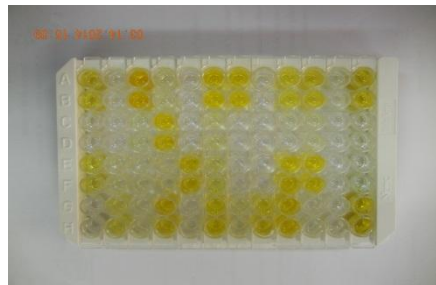
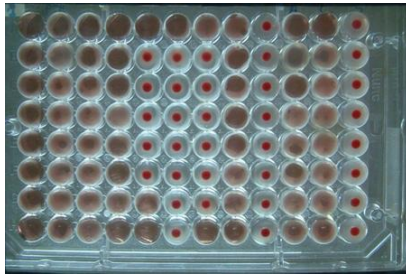




Serological Testing



Ag C S



Sl. No.	Sample No.	Sample Type	Sample Source	Sample Date	Sample Time	Sample Location	Sample Status	Sample Remarks	Sample Ref.	Sample No.	Sample Date	Sample Time	Sample Location	Sample Status	Sample Remarks	Sample Ref.
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10



Laboratory preparedness

2010 -2013

“OIE Laboratory Twinning Programme: Brucellosis”

Parent Laboratory :

OIE/FAO/EU Reference Laboratory for Brucellosis,
ANSES, France

OIE Expert: Dr. Bruno Garin-Bastuji





Laboratory preparedness

- A complementary activity is supported by FAO-APHCA, OIE Asia-Pacific Office and DLD in order to organize a regional **proficiency ring-trial** regarding to serological diagnosis of brucellosis

2014

**FAO-APHCA/OIE Regional Workshop on Brucellosis
Serum Proficiency Test**

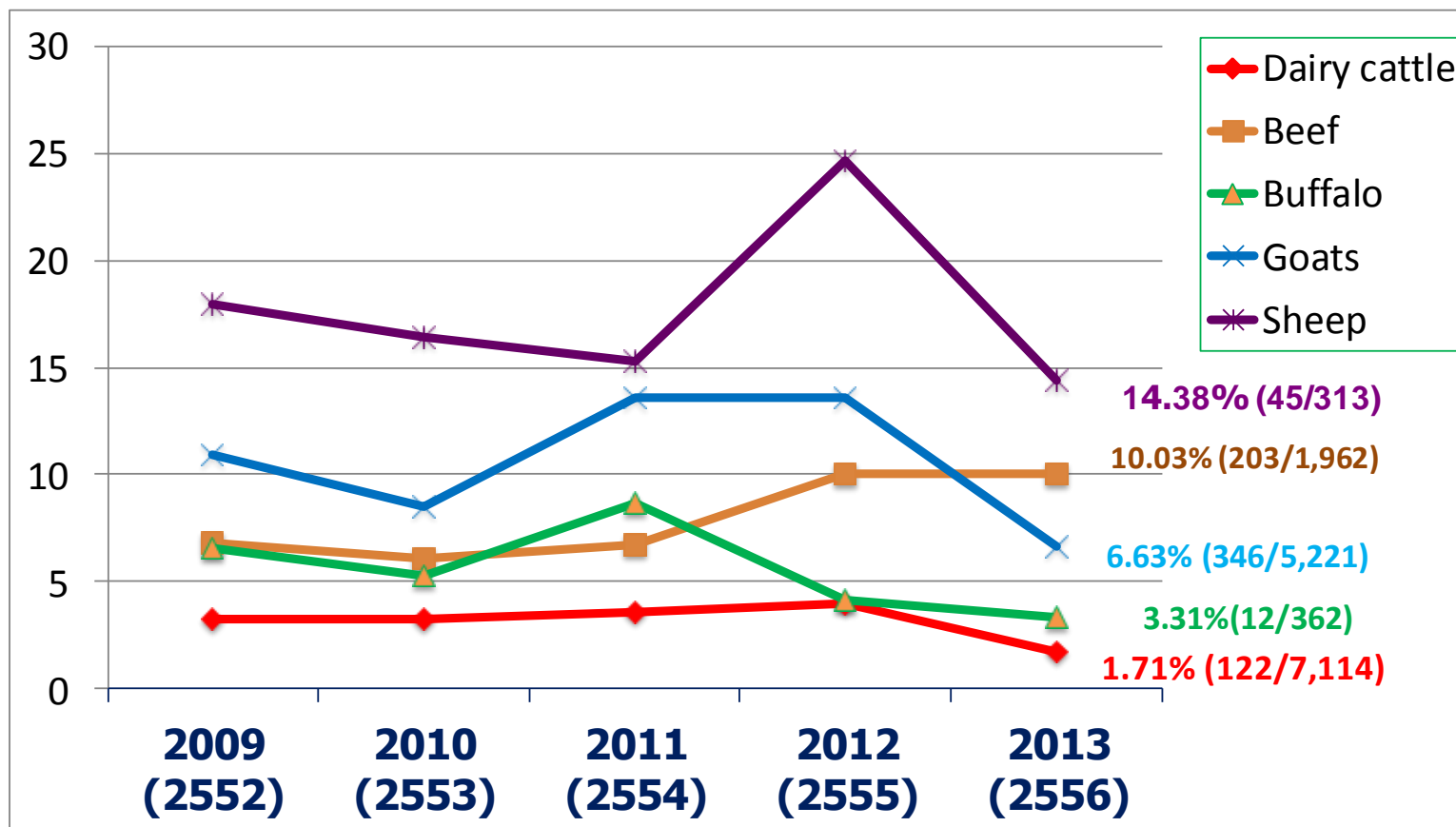
18-21 March 2014, Thailand



Situation of Brucellosis in Thailand

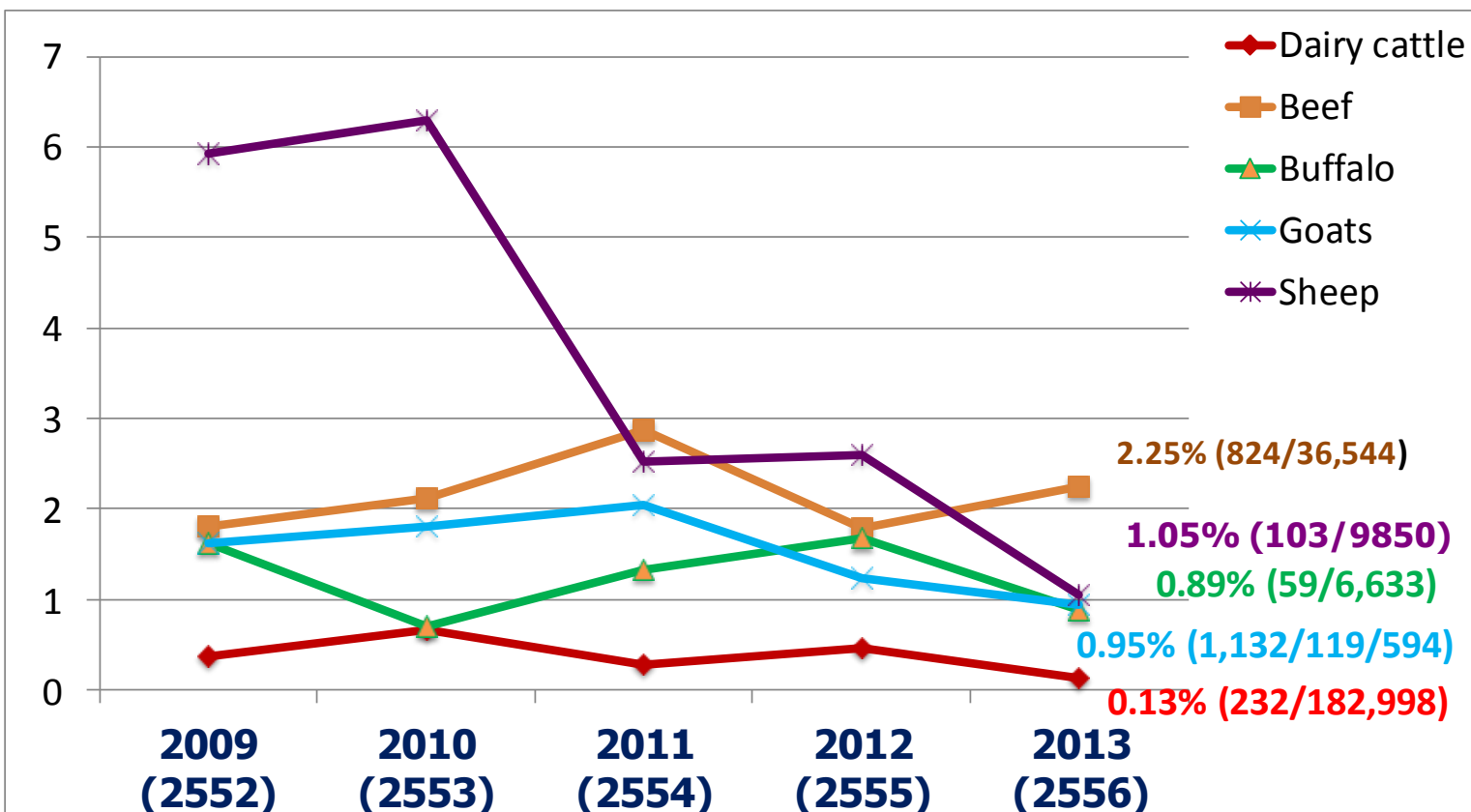


Brucellosis Laboratory Surveillance at Herd Level



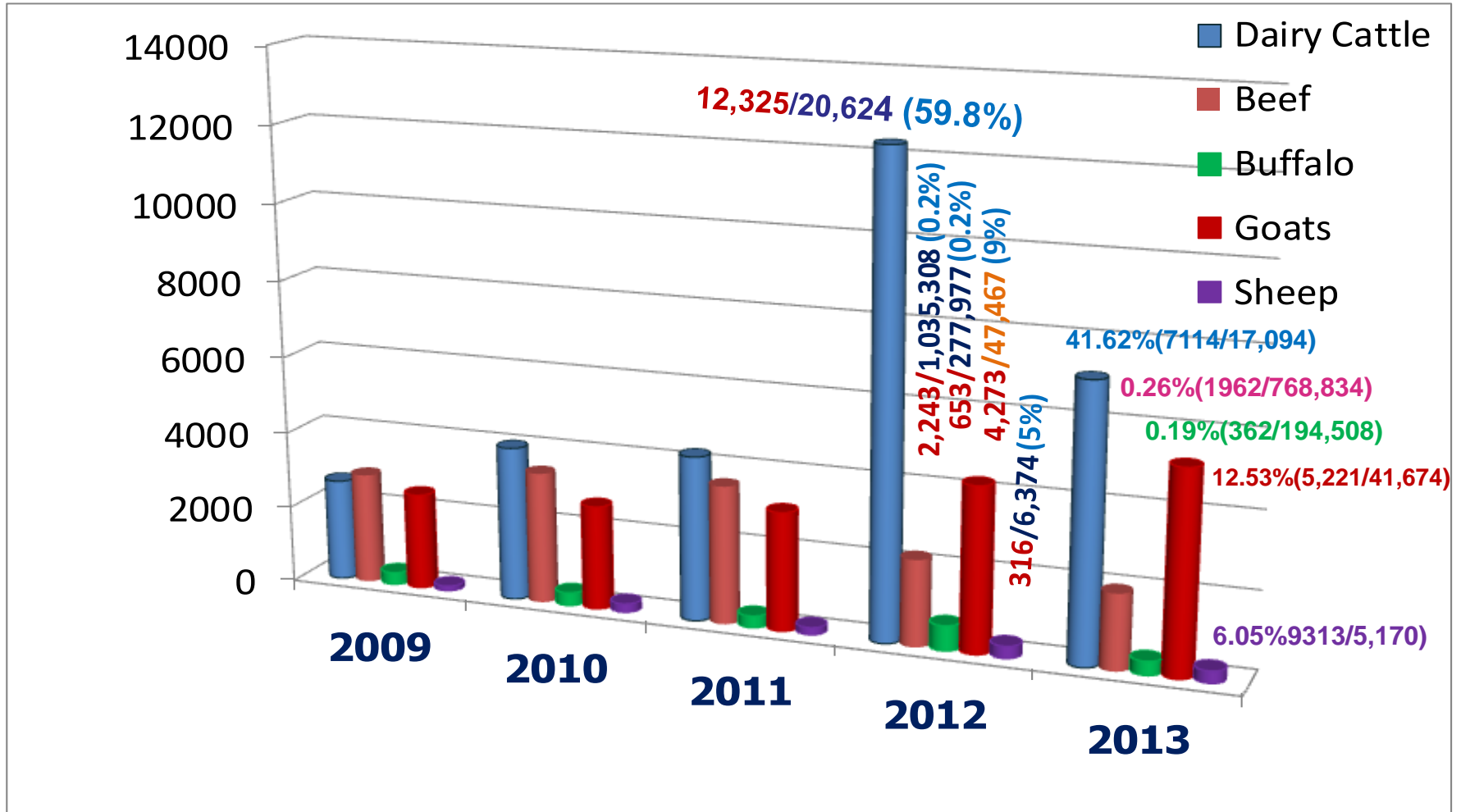


Brucellosis Laboratory Surveillance at **Animal Level**





Brucellosis Tested Herds 2009-2013





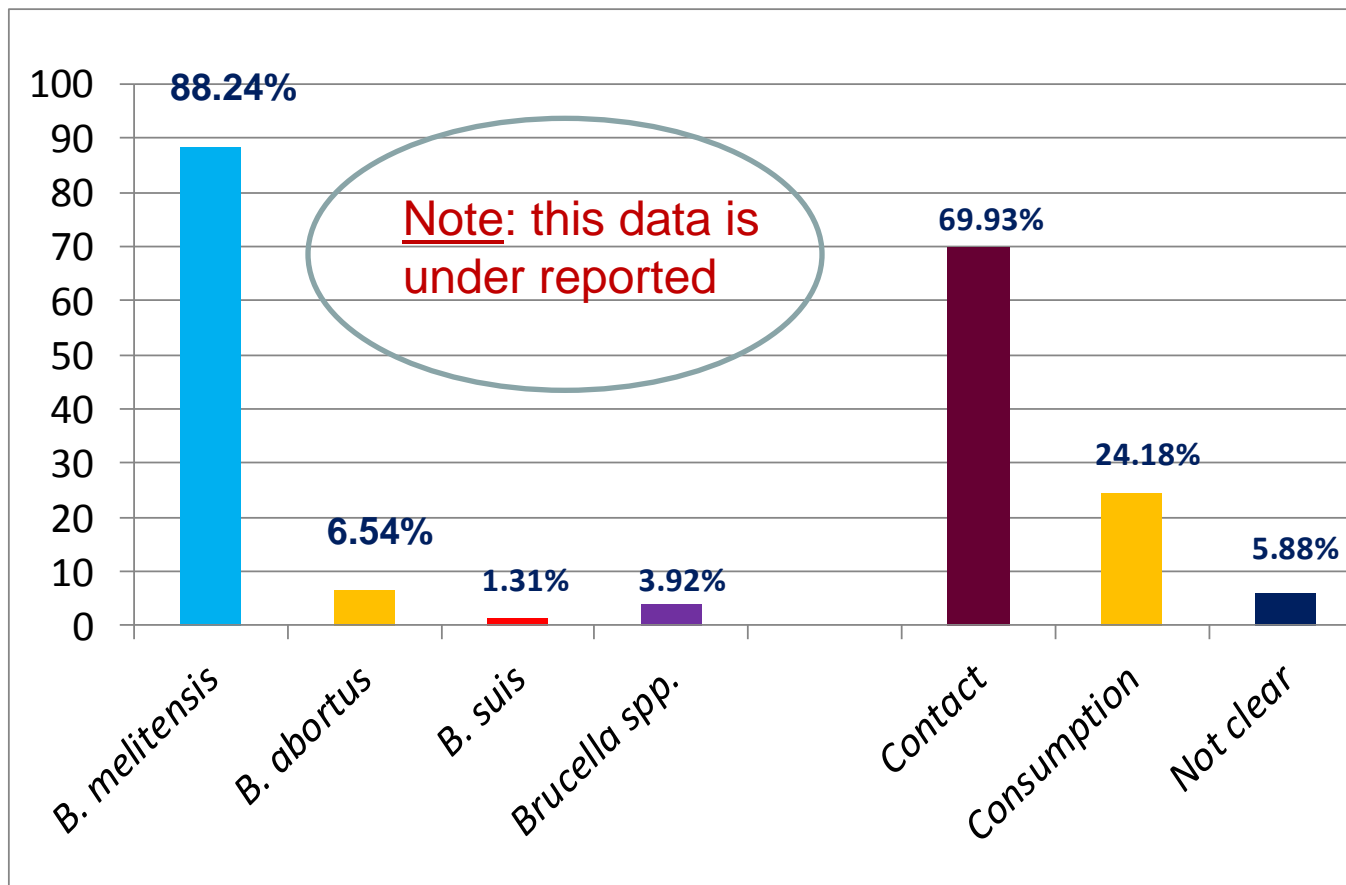
Human Brucellosis : clinical cases and sero-positive cases





Human Brucellosis (accumulated 2003 – 2013)

153 cases (64 clinical cases, 89 sero-positives)





Prevention and Control Brucellosis in Thailand



Prevention and Control Brucellosis in Thailand

1. Identification of animals (ID tag/animal number)
2. Surveillance and quarantine for imported animals
3. Animal movement control
4. Animal testing (routine)
5. Laboratory quality control and assurance:
ISO/IEC:17025/2005
6. Laboratory network for brucellosis surveillance
(animal and human health)



Prevention and Control Brucellosis in Thailand

7. Education, awareness campaigns on brucellosis
8. Promotion of and campaign for “Brucellosis-Free Herds”
9. Control measures in **infected herds**
 - Test and isolation/slaughter policy with compensation in DLD control program
 - Strict animal movement control
 - Negative animals retested **every 2 months**
10. Evaluation and report



11. Vaccination control program in Thailand

***B. abortus* strain 19 (attenuated)**

- cattle and buffalo **female calves** (3-8 months)

***B. melitensis* Rev.1: goats and sheep**

- not yet applied in Thailand



Collaboration in “One Health” concept





Collaboration One Health Projects by Epidemiological Teams at the Provincial and district levels in Thailand

Model: 5 projects

1. **Chiang Mai:** Strengthening Survey and Joint Investigation on **Tuberculosis** and **Q fever** among Ruminants, Farmers and Zoo Keepers
2. **Nakorn Ratchsima:** Model Development for **Q Fever**, **Melioidosis** and **Brucellosis** surveillance in Humans and Animals in Nakhonratchasima, 2012
3. **Songkhla:** Development of a surveillance system for **Melioidosis** and **brucellosis** in Songkhla province using the One Health system
4. **Chonburi:** Integrated Surveillance for **Brucellosis** in Humans and Animals under the "One Health" Concept
5. **Kanchanaburi:** Model Development for **West Nile Infection** Surveillance in Humans and Animals





An outbreak of brucellosis among occupational exposure to goats in Borploy subdistrict, borploy district, Kanchanaburi Province, 2012 (Niramon et al., 2012. FETP, Bureau of Epidemiology, MOPH)

- Good example : Brucellosis outbreak at Kanchanaburi were collaborations between physicians, veterinarians, nurses and public health officer to enhance prevention and control of diseases.

One
Health



Brucellosis: Recent developments towards “One Health” concept
Scientific and Technical Review 32(1)
Pleumb et al., 2013





Acknowledgements

- **Regional Veterinary Research and Development Centers**
 - 1) Northern (upper zone) VRDC, Lampang Province
 - 2) Northern (lower zone) VRDC, Pitsanulok Province
 - 3) Northeastern (upper zone) VRDC, Khon Kaen Province
 - 4) Northeastern (lower zone) VRDC, Surin Province
 - 5) Eastern VRDC, Chonburi Province
 - 6) Western VRDC, Ratchaburi Province
 - 7) Southern (upper zone) VRDC, Nakhonsrithammarat Province
 - 8) Southern (lower zone) VRDC, Songkhla Province
- **Bureau of Disease Control and Veterinary Services, DLD.**
- **Bureau of Epidemiology, Department of Disease Control, MOPH**
- **National Institute of Animal Health**





- Immuno-serology section, National Institute of Animal Health, DLD





Thank you for your Attention