

Challenges and Opportunities for Brucellosis Diagnosis, Surveillance and Control in Timor-Leste



MINISTÉRIO DA AGRICULTURA
PECUÁRIA PESCA E FLORESTAS



DIRECÇÃO NASIONAL DE
VETERINÁRIA

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Diagnosis

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Current disease situation in Timor-Leste

- The current situation of animal brucellosis in Timor-Leste is considered to be uncertain but potentially underdiagnosed, because there is limited published national surveillance data and no large-scale official eradication program publicly reported in recent years.
- Current Situation in Timor-Leste Brucellosis is recognized as an important zoonotic disease that can affect:
 - cattle (*Brucella abortus*), [Some data available](#)
 - goats and sheep (*Brucella melitensis*) No data available
 - pigs (*Brucella suis*) No data available
- There are currently limited published prevalence studies available nationally, meaning the real burden may be underestimated. As such as
 - Brucellosis in Timor-Leste: Knowledge, attitudes, and practices among cattle farmers and animal health workers (<https://www.sciencedirect.com/science/article/pii/S0167587725002065>)
 - Developing strategies to reduce brucellosis transmission in Timor-Leste based on One Health collaboration (<https://www.aciar.gov.au/project/LS-2022-161>)
- Veterinary diagnostic capacity for brucellosis has been improving gradually through strengthening of the national veterinary laboratory and surveillance systems.
- In Timor-Leste, the disease is considered a potential risk for livestock production and public health, especially in: traditional farming systems, cross-border animal movement, communal grazing systems, and informal slaughter practices.
- Need to strengthen nationwide brucellosis surveillance in all species of animals
- Brucellosis vaccinations campaign in Bobonaro Municipality and other five Centre of Buffalo Milk producer areas.

Disease Diagnostics

The disease diagnostic capacity of the Timor-Leste Veterinary Diagnostic Laboratory (VDL) for brucellosis is currently considered **basic to moderate but improving significantly** through international collaboration and One Health programs.

Current Brucellosis Diagnostic Capacity of VDL Timor-Leste

The national Veterinary Diagnostic Laboratory was established in 2012 and expanded with a Molecular Veterinary Diagnostic Laboratory in 2022 to improve rapid disease diagnosis in animals.

At present, the VDL has the following capacities relevant to brucellosis diagnosis:

Serological Testing Capacity

The VDL mainly performs:

- Rose Bengal Test (RBT)
- ELISA Test
- Other screening serology for livestock surveys
- Molecular can be performed depend on the project plan.

The laboratory has historically focused strongly on serology and surveillance surveys for diseases including brucellosis.

Disease Surveillance

Timor Leste Brucellosis data availabilities 2023				
Municipalities	Numbers of samples collected	Positive	Negative	Prevalensia %
Bobonaro	1027	389	678	38
Covalima	311	150	161	48
Dili	22	1	21	5
Liquica	15	2	13	13
Oecusse	200	81	121	41
Municipalities Prevalence	1575	623	994	40
Timor Leste Brucellosis data availabilities 2024				
Municipalities	Numbers of samples collected	Positive	Negative	Prevalensia %
Bobonaro	75	3	72	4.00
Covalima	75	13	62	17.33
Dili	42	3	39	7.14
Lautem	92	14	78	15.22
Manufahi	22	8	14	36.36
Oecusse	75	4	71	5.33
Viqueque	26	8	18	30.77
Total	407	53	354	13.02
Timor Leste Brucellosis data availabilities 2025				
Municipalities	Total animal	Positive	Negative	Prevalensia %
Aileu	57	0	57	0.00
Ainaro	84	1	83	1.19
Baucau	93	3	90	3.23
Dili	21	0	21	0.00
Ermera	138	15	123	10.87
Liquica	93	4	89	4.30
Lospalos	231	17	214	7.36
Manatuto	84	0	84	0.00
Manufahi	106	7	99	6.60
Viqueque	278	15	263	5.40
Total	1185	62	1123	5.23
National Brucellosis Prevalences	3167	738	2471	23.30



Timor Leste
Brucellosis
National
Prevalences 23.30%

Disease Prevention and Control or Preparedness Strategy

- **Main goals :** to prevent, detect, control, and progressively reduce brucellosis in livestock and humans in timor-leste through coordinated surveillance, laboratory diagnosis, biosecurity, vaccination, movement control, and public awareness.
- **National Preparedness Components :**
 - Strengthen nationwide regular surveillance system (Passive & Active surveillance program)
 - Improve capacity building National and field staff.
 - Upgrade basic laboratory capacity in Municipality level
 - Deployment of Veterinarian in Municipality level
 - Baseline prevalence survey.
 - Risk mapping by municipality.
 - Integration with zoonotic disease and food safety monitoring systems.
 - National brucellosis contingency plan
- **Strengthen VDL Capacity :** Advance diagnostic capacity need, The isolation of *brucella* is considered the gold standard for diagnosis, but requires high biosafety measures.
- **Nationwide Animal Vaccination against brucellosis.**
- **Strengthen One Health collaboration:** Human, Animal and environments
- Partners collaborations

Key challenges/issues

- **National serosurvey**
- **Establish national reporting system**
- **Train veterinary staff**
- **Strengthen VDL diagnostics**
- **Develop SOPs**
- **Community awareness campaigns**
- **Vaccination campaign**
- **Strengthen quarantine and border control**
- **Introduce traceability system**
- **Improve outbreak response capacity**

- Timor-Leste aims to progressively
 - strengthen brucellosis surveillance system,
 - laboratory diagnosis,
 - vaccination,
 - biosecurity, and
 - one health collaboration, to reduce the impact of brucellosis on livestock production, public health, and rural livelihoods.”



Thank you!

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