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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

# Global and regional situation, progress and challenges of Animal Brucellosis

Regional Workshop on Zoonotic Tuberculosis and Brucellosis Control in the Asia Pacific Region

Qingdao Sophia Hotel, Qingdao, China P.R., 24-26 September 2024

Monaya Ekgatat  
National Institute of Animal Health  
Department of Livestock Development





## Global status of *Brucella abortus* (Jul-Dec 2023)



### Selected filters :

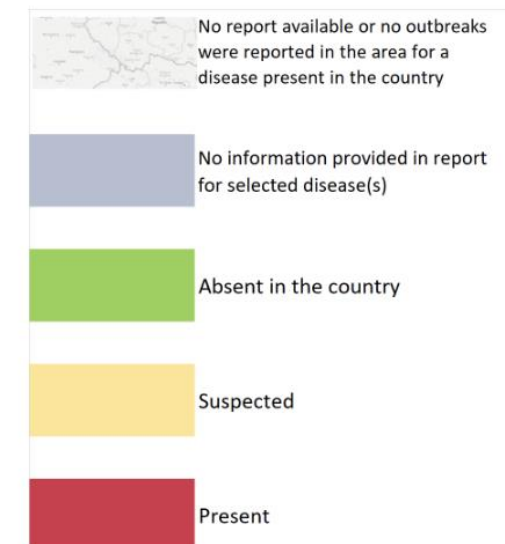
Region: Africa, Americas, Asia, Europe, Oceania

Year: 2023

GlobalStatus: Present, Suspected

Semester: Jul-Dec-2023

Disease: Brucella abortus (Inf. with)





## Global status of *Brucella melitensis* (Jul-Dec 2023)



### Selected filters :

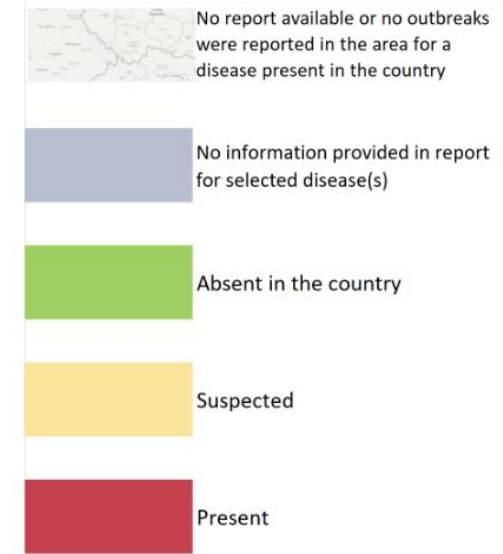
Region: Africa, Americas, Asia, Europe, Oceania

Year: 2023

GlobalStatus: Present, Suspected

Semester: Jul-Dec-2023

Disease: Brucella melitensis (Inf. with)







## Global status of *Brucella suis* (Jul-Dec 2023)



### Selected filters :

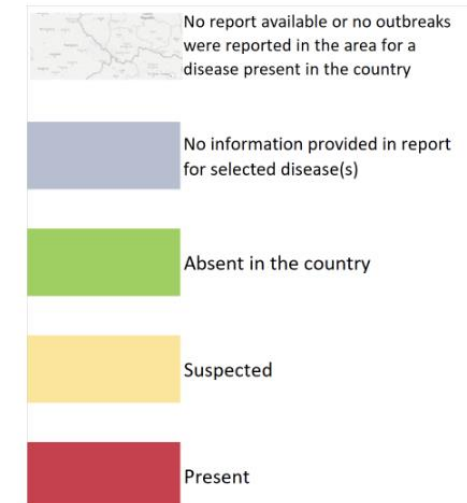
Region: Africa, Americas, Asia, Europe, Oceania

Year: 2023

GlobalStatus: Present, Suspected

Semester: Jul-Dec-2023

Disease: *Brucella suis* (Inf. with)





## Asia: Status of *Brucella abortus* (Jul-Dec 2023)



### Selected filters :

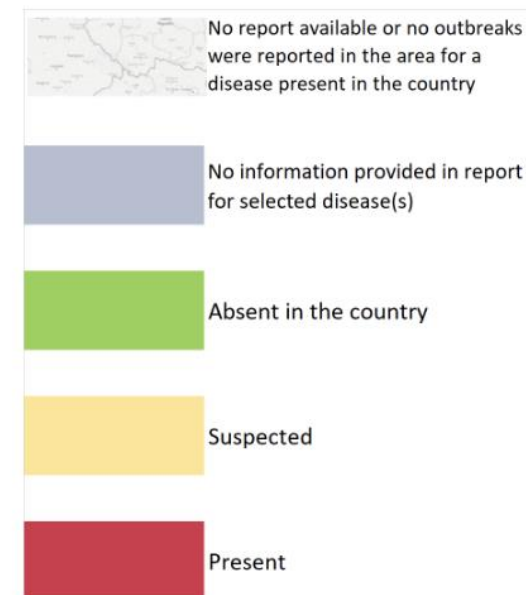
Region: Asia

Year: 2023

GlobalStatus: Present, Suspected

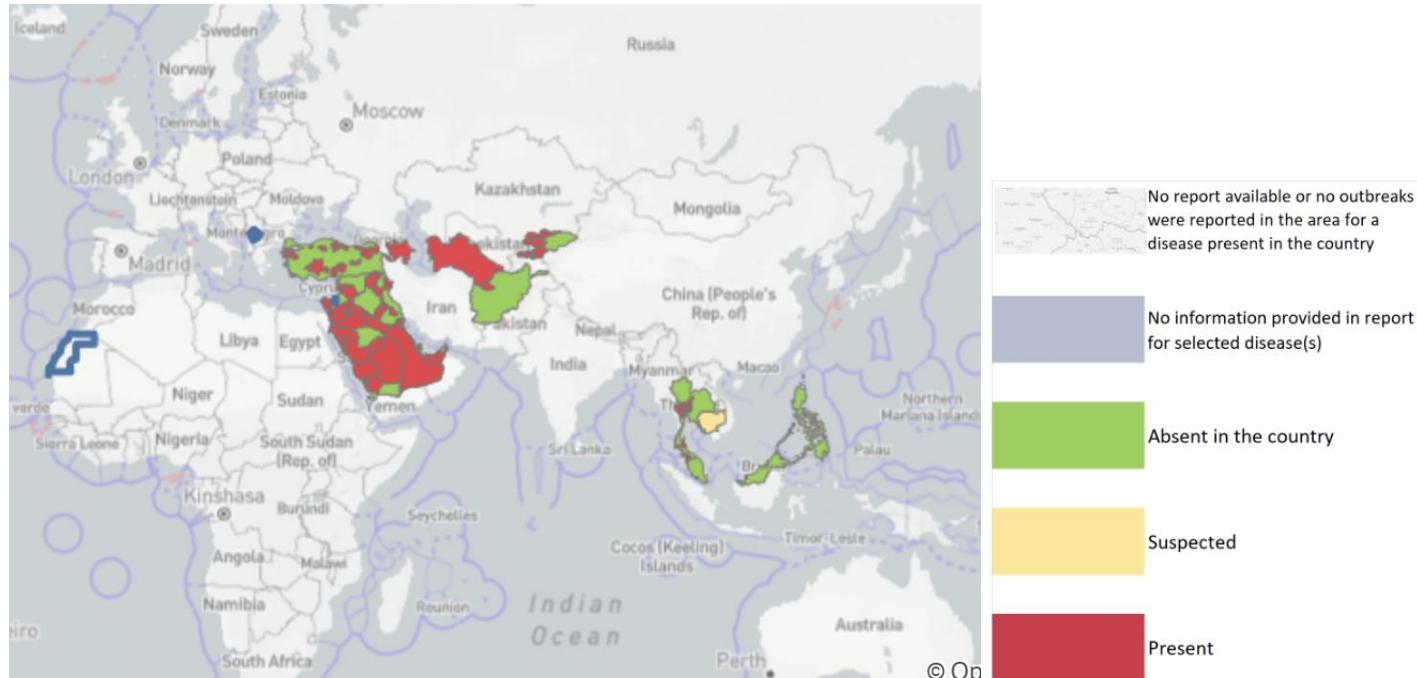
Semester: Jul-Dec-2023

Disease: Brucella abortus (Inf. with)





## Asia: Status of *Brucella melitensis* (Jul-Dec 2023)



### Selected filters:

Region: Asia

Year: 2023

GlobalStatus: Present, Suspected

Semester: Jul-Dec-2023

Disease: Brucella melitensis (Inf. with)

## Status of *Brucella suis* (Jul-Dec 2023)



### Selected filters:

Region: Asia

Year: 2023

GlobalStatus: Present, Suspected

Semester: Jul-Dec-2023

Disease: Brucella suis (Inf. with)

Present: Kyrgyzstan  
Suspected: Cambodia



Countries (Jan-Jun 2023)	
Afghanistan	Malaysia
Armenia	Nepal
Azerbaijan	Pakistan
Georgia	Philippines
India	Saudi Arabia
Indonesia	Sri Lanka
Iraq	Syria
Israel	Thailand
Kuwait	Türkiye (Rep. of)
Kyrgyzstan	United Arab Emirates

Countries (Jul-Dec 2023)	
Afghanistan	Qatar
Azerbaijan	Saudi Arabia
Georgia	Syria
Iraq	Thailand
Israel	United Arab Emirates
Jordan	
Kuwait	
Kyrgyzstan	
Malaysia	
Philippines	





# Status of Brucellosis in Asia (2023)



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WAHIS

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## No. of cases (Jan-Jun 2023)

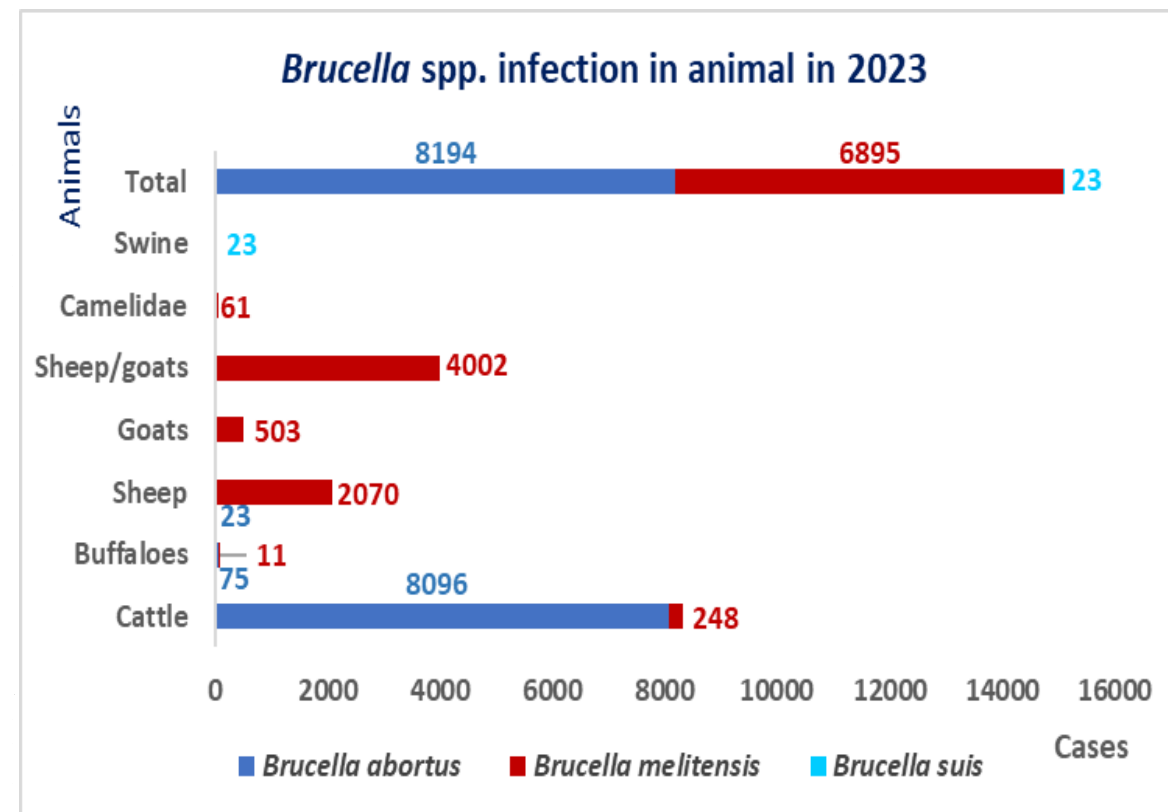
	Cattle	Buffaloes	Sheep	Goats	Sheep/goats (mixed herd)	Camelidae	Swine	Total
<i>Brucella abortus</i>	5728	17	21	-	-	-	-	5766
<i>Brucella melitensis</i>	88	-	1658	459	1752	48	-	4005
<i>Brucella suis</i>	-	-	-	-	-	-	19	19
<b>Total</b>								<b>9790</b>

## No. of cases (Jul-Dec 2023)

	Cattle	Buffaloes	Sheep	Goats	Sheep/goats (mixed herd)	Camelidae	Swine	Total
<i>Brucella abortus</i>	2368	58	2	-	-	-	-	2428
<i>Brucella melitensis</i>	160	11	412	44	2250	13	-	2890
<i>Brucella suis</i>	-	-	-	-	-	-	4	4
<b>Total</b>								<b>5322</b>

## No. of cases (2023)

	Cattle	Buffaloes	Sheep	Goats	Sheep/goats (Mixed herd)	Camelidae	Swine	Total
<i>Brucella abortus</i>	8096	75	23	-	-	-	-	8194
<i>Brucella melitensis</i>	248	11	2070	503	4002	61	-	6895
<i>Brucella suis</i>	-	-	-	-	-	-	23	23
<b>Total</b>								<b>15112</b>







## Open Access

Anim Biosci  
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<https://doi.org/10.5713/ab.23.0273>  
pISSN 2765-0189 eISSN 2765-0235



## Association of farmers' knowledge, attitude and practices with bovine brucellosis seroprevalence in Myanmar

Su Su Hlaing<sup>1,a</sup>, Satoko Kubota<sup>2</sup>, Kohei Makita<sup>3</sup>, Ye Tun Win<sup>4</sup>, Hnin Thidar Myint<sup>4</sup>, and Hiroichi Kono<sup>2,a,\*</sup>

**Study area:** townships in the Mandalay region of Myanmar

### Studies showed

- At farm level prevalence - Migratory cattle farms 14.8%
  - Dairy farms 2.6%
  - Strongly associated with cattle herd size.
- KAP- KAP between migratory and dairy farmers were varied."

### Suggestion and Recommendation

- Training and extension programs aim to enhance farmers' awareness of their KAP situation
- Campaigns: a feasible control intervention and public awareness for preventing human exposure to brucellosis.

## **Seroprevalence of Brucellosis Disease and Lumpy Skin Disease on Cattles at Svay Rieng and Prey Veng Province, Cambodia**

Khoeun Sokun<sup>1,4</sup>, Kong Saroeun<sup>1,4</sup>, Bun Chan<sup>3</sup>, Ren Theary<sup>3</sup>, Ith Manay<sup>2</sup>, Chan Bunyeth<sup>1</sup>, Lay Hort<sup>3</sup>, Hin Lyhour<sup>2</sup> and Theng Kouch<sup>2</sup>

*1. Faculty of Agriculture, Svay Rieng University, Svay Rieng 200705, Cambodia*

*2. Royal University of Agriculture, Phnom Penh 12401, Cambodia*

*3. General Directorate of Animal Health and Production, Phnom Penh 120603, Cambodia*

*4. Graduate School, Royal University of Agriculture, Dangkor District, Phnom Penh, 12401, Cambodia*

**Study area:** two provinces, Svay Rieng and Prey Veng, in Cambodia

**Results:** Prey Veng 0.33% (1/300) sero-positivity rate of brucellosis

**Future study:**

- Be conducted to identify clinical signs that are indicated on the cattle tested sero-positive.
- Strict control on biosecurity



Research in Veterinary Science  
Volume 176, August 2024, 105339



## Detection and characterization of *Brucella* species in rodents: A threat for the persistence of brucellosis in livestock farms

Maryam Dadar , Saeed Alamian

- Rodents were captured from **seropositive** dairy cattle farms and sheep farms.
- **Lymph node samples** from dairy cattle farms contained *B. abortus* biovar 3 isolates and
- *B. melitensis* Rev1 vaccine
- **Rodents** carried *B. abortus* biovar 3 and *B. melitensis* biovar 1
- Rodents on seropositive livestock farms: indicated potential reservoir

Ma et al. *Infectious Diseases of Poverty* (2024) 13:3  
<https://doi.org/10.1186/s40249-023-01170-4>


Infectious Diseases of Poverty

### SCOPING REVIEW

### Open Access



## Evidence-practice gap analysis in the role of tick in brucellosis transmission: a scoping review

Rui Ma<sup>1</sup>, Chunfu Li<sup>1</sup>, Ai Gao<sup>1</sup>, Na Jiang<sup>1</sup>, Xinyu Feng<sup>1,2,3\*</sup> , Jian Li<sup>1,4\*</sup> and Wei Hu<sup>1,4,5\*</sup>

**Reviewed Results:** Highlighted the potential capacity of **ticks** in brucellosis transmission.

Overall prevalence of *Brucella* in ticks was 33.87 % (range: 0.00–87.80 %).

- **A potential threat to animal and human health** (*Brucella* circulated in parasitic ticks' different developmental stages)
- Empirical evidence: **in vitro rodent infection**, ticks possess the capability to transmit *Brucella* to uninfected animals (range: 45.00–80.00 %)
- **Epidemiological associations:** found occurrence of brucellosis in animals and tick control in rangelands

## Characterization of *Brucella* spp. circulating in industrial dairy cattle farms in Iran: a field study 2016 - 2023

Saeed Alamian<sup>1</sup>, Karim Amiry<sup>2</sup>, Afshar Etemadi<sup>1</sup>, Maryam Dadar<sup>1\*</sup>

<sup>1</sup> Brucellosis Department, Razi Vaccine and Serum Research Institute (RVSRI), Agricultural Research, Education and Extension Organization (AREEO), Karaj, Iran;

<sup>2</sup> Brucellosis Department, Iranian Veterinary Organization, Tehran, Iran.

**Population:** Industrial dairy cattle farms (21 provinces)  
(under the test-and-slaughter programs)

### Results:

- Sero-positive farms **70.53%**
- *Brucella* strains: ***B. melitensis*** biovar 1 = 43.42%, and  
***B. abortus*** biovar 3 = 27.11%.
- **Highlighted** the complexity of bovine brucellosis in Iran that ***B. melitensis*** was spread **from small ruminants to cattle**.





**NOTE**

Wildlife Science

***Brucella* infection in rough-toothed dolphin  
(*Steno bredanensis*) with severe orchitis  
stranded on the Pacific coast of Japan**

Kazue OHISHI<sup>1)##</sup>, Yuko TAJIMA<sup>2)#</sup>, Erika ABE<sup>3)</sup>, Tadasu K YAMADA<sup>2)</sup>,  
Tadashi MARUYAMA<sup>4)</sup>

**Results:**

- Found severe orchitis with granulomatous lesions in a rough toothed dolphin (*Steno bredanensis*) stranded on the Pacific coast of Japan in 2011.
- Histopathological examination: leukocyte infiltration of the lesions.
- PCR: showed molecular biological similarities with those of *Brucella*-infected common minke whales and ***Brucella ceti* of sequence-type 27 (ST27)**.
- **Further studies:** using **pathology** and **molecular biology** are needed to understand the relationship between the ST and related diseases, as well as their impact on the overall health of cetaceans.



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### Spatial risk of disease transmission between wild bovids and livestock in Thailand

Posted May 11, 2024.

 Wantida Horpiencharoen,  Jonathan C. Marshall,  Renata L. Muylaert,  Reju Sam John,  
 David T. S. Hayman

doi: <https://doi.org/10.1101/2024.05.04.592526>

This article is a preprint and has not been certified by peer review [what does this mean?].

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Species	Percentage (%) of overlap area in Thailand
Gaur	3.9
Banteng	4.4
Wild water buffalo	8.7

**Study area:** High cattle production in the central west

**Populations:** Wildlife (gaur, banteng and wild water buffalo) and livestock populations

**Predicted:** interface areas which were assumed to be areas at risk of infectious disease transmission based on the spatial overlap between three Thai wild bovids habitat suitability and domestic cattle

**Highest risk areas:** at the **forest edges** where overlap exists between high habitat suitability and high cattle density.



## FAO-APHCA/OIE Regional Technical Workshop on Prevention and Control of Animal Brucellosis and Tuberculosis in Asia held in Bangkok, Thailand, (11-13 September 2017)

- Establish regional and in-country networks between the key players/stakeholders and prepare national action plans and programmes
- Strengthen veterinary services through capacity building and infrastructure development by engaging in OIE Performance of Veterinary Services (PVS) evaluation and gap analysis and follow up activities
- Brucellosis herd prevalence should be established prior to deciding on the control strategy
- Promote public-private partnerships
- **Integrate national action plans (NAP) for brucellosis and tuberculosis into existing national disease control programmes.**

## FAO-APHCA/CDC/OIE/DLD Regional Technical Workshop on Brucellosis Elimination

NIAH Bangkok, Thailand (25-28 June 2018)

- Establish collaborations between public and animal health sectors
- Encouraged to develop a 5-year brucellosis control plan based on sound epidemiological information and to develop a national program within the framework of stepwise approach
- Incorporation of human and animal brucellosis in already established programmes for other diseases
- **Countries can explore how animal brucellosis surveillance and control could be integrated within other disease surveillance and control programmes**
- SOPs for surveillance, including case definition and laboratory diagnosis of brucellosis in animals and humans
- Engagement of the wildlife sector and wildlife surveillance should be considered (Especially during the last stages of elimination)



1. **National Program Development:** the framework of **stepwise approach** for the progressive control of brucellosis (FAO Empress: Brucellosis control programme in Tajikistan: pathway to success)
2. **Capacity Building for Surveillance including wildlife sector and SOP**
3. **Political and Financial Commitment**
4. **Education and Public Awareness**
5. **Laboratory Capacity Strengthening**
6. **Inter-Sectoral and Regional Cooperation**
7. **Multidisciplinary Collaboration**
8. **Ongoing Support Request:** Continue to seek and secure support from international organizations and other partners

**Successful prevention:** rapid disease detection, efficient surveillance, collaboration and communication across various sectors.





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# Thank you!

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Regional Representation for Asia and the Pacific  
Food Science Building 5F - The University of Tokyo  
1-1-1 Yayoi, Bunkyo-ku  
Tokyo, 113-8657  
JAPAN

[rr.asia-pacific@woah.org](mailto:rr.asia-pacific@woah.org)  
[rr-asia.woah.org](http://rr-asia.woah.org)

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