

BOVINE BRUCELLOSIS (*Brucella abortus*)

ANIMAL GROUP AFFECTED	TRANSMISSION	CLINICAL SIGNS	FATAL DISEASE ?	TREATMENT	PREVENTION & CONTROL
<p><i>Prevalent in:</i> domestic ruminants and wild animals such as: Antilocapridae, Bovidae, Camelidae, Cervidae, Giraffidae, Ippopotamidae, Tragulidae</p> <p><i>But also in:</i> Marsupialia, Lagomorpha, Rodentia, Cetacea, Carnivora, Pinnipedia, Tubulidentata, Perissodactyla</p>	<p>Vertically or by direct contact of mucosal surfaces of susceptible animals with discharges of animal infected such as aborted fetuses, placental membranes or vaginal fluids.</p> <p>Also by ingestion of contaminated food, milk, water and colostrum or by insect bites or artificial insemination.</p>	<p>Often subclinical.</p> <p>Most common signs: abortion in second half of gestation and retained placenta.</p> <p>Other signs: male infertility, premature delivery, orchitis, epididymitis, arthritis, synovitis and endocarditis</p>	<p>No (Yes for foetus)</p>	<p>Long term treatment eventually with Tetracycline and Streptomycine</p>	<p><i>In houses</i></p> <p><i>in zoos</i> Serological control of animals by recognised laboratories;</p> <p>Vaccination with <i>Brucella abortus</i> strains RB 51 or Buck 19, according to national brucellosis eradication programs</p>

<p>Fact sheet compiled by Klaus Gunther Friedrich, Bioparco S.p.A., Rome Zoological Garden, Italy Fabrizio Gamberale, Istituto Zooprofilattico delle Regioni Lazio e Toscana, Rome, Italy</p>	<p>Last update November 2002</p>
<p>Fact sheet reviewed by R. Adone, Istituto Superiore di Sanità, Rome, Italy P. Pasquali, Istituto Superiore di Sanità, Rome, Italy</p>	
<p>Susceptible animal groups All mammals, but also birds and marine mammals seem to be susceptible.</p>	
<p>Causative organism <i>Brucella abortus</i> biovars 1, 2, 3, 4, 5, 6, 7 and 9.</p>	
<p>Zoonotic potential <i>B. abortus</i> can infect humans ("Bang" disease) but is less pathogenic than <i>B. melitensis</i> (Malta Fever). Professional exposure generally occurs through direct contact with reproductive discharges from aborting or parturient animals. The disease is commonly transmitted to humans by ingestion of contaminated food (namely milk and soft cheese) and through skin lesions.</p>	
<p>Distribution World-wide except brucellosis-free countries such as Canada, Austria, Switzerland, United Kingdom, Ireland, Finland, Czechoslovakia, Germany, Sweden, Norway, Poland, Romania.</p>	
<p>Transmission By ingestion, inhalation and direct mucosal contact with infected materials. <i>Brucella</i> organisms can persist in uterine discharges for 10 days, in reproductive material 135 days, in milk 38 days, in light exposed soil 5 days, in water at 25 °C 57 days, in meat 65 days, in manure at 12°C 250 days, in urine 400 days.</p>	
<p>Incubation period Generally is very variable. The micro-organism localizes in the uterus after penetration but also in the udder and in regional lymph nodes. In males, the primary localization is in the scrotum and in testicles.</p>	

**Clinical symptoms**

Often without any clinical signs. The most common signs are abortion and retained placenta. Orchitis, epididymitis, arthritis, synovitis and endocarditis can also occur.

Post mortem findings

No pathognomonic signs. Frequent lesion is the necrosis of cotyledons. Aborted fetuses are edematous and show often signs of pneumonia. Infected bovine testicles can show necrosis.

Diagnosis

- Direct diagnosis: Polymerase chain reaction (PCR), culture for isolation.
- Indirect diagnosis: Complement Fixation Test (CFT), Milk Ring Test, ELISA-s, Brucellin skin test.

Material required for laboratory analysis

For indirect diagnosis: blood serum and/or milk.

For direct diagnosis: blood, vaginal swabs, foetal membranes, materials from aborted foetus such as spleen, stomach contents, encephalon and lung.

EU Reference Laboratory**AFSSA, Nancy**

Laboratoire d'études sur la rage et la pathologie des animaux sauvages

Domaine de Pixérécourt, BP 9

F-54220 Malzéville

France

OIE Reference Laboratories

- **Dr Henrich Neubauer**
Federal Research Centre for Virus Diseases of Animals (BFAV), Institute of Bacterial Infections and Zoonoses
Naumburger Str. 96a, 07743 Jena
GERMANY
Tel: (49.3641) 80.42.00 Fax: (49.3641) 80.42.28
Email: heinrich.neubauer@fli.bund.de
- **Dr Ana Maria Nicola**
Gerencia de Laboratorios (GELAB), Servicio Nacional de Sanidad y Calidad Agroalimentaria (SENASA)
Av. Alexander Fleming 1653, 1640 Martínez, Pcia. de Buenos Aires
ARGENTINA
Tel: (54.11) 48.36.19.92 Fax: (54.11) 48.36.19.92
Email: anicola@senasa.gov.ar
- **Dr J.A. Stack**
VLA Weybridge
New Haw, Addlestone, Surrey KT15 3NB
UNITED KINGDOM
Tel: (44.1932) 35.76.10. Fax: (44.1932) 35.72.16
Email: j.a.stack@vla.defra.gsi.gov.uk
- **Dr B. Garin-Bastuji**
AFSSA Alfort, Unité Zoonoses Bactériennes, Lab. OIE/FAO de référence pour la brucellose animale, Laboratoire d'études et de recherches en pathologie animale et zoonoses
23 avenue du Général de Gaulle, 94706 Maisons-Alfort Cedex
FRANCE
Tel: (33 (0)1) 49.77.13.00 Fax: (33 (0)1) 49.77.13.44
Email: b.garin-bastuji@afssa.fr
- **Dr K. Nielsen**
Canadian Food Inspection Agency, Animal Diseases Research Institute
P.O. Box 11300, Station H, Nepean, Ontario K2H 8P9
CANADA
Tel: (1.613) 228.66.98 ext. 48.04 Fax: (1.613) 228.66.69
Email: nielsenk@inspection.gc.ca
- **Dr Massimo Scacchia**
CESME, Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise 'G. Caporale', National Centre for



Exotic Diseases
Via Campo Boario, 64100 Teramo
ITALY
Tel: (390.861) 33.24.05 Fax: (390.861) 33.22.51
Email: m.scacchia@izs.it

• **Dr Menachem Banai**

Kimron Veterinary Institute
Department of Bacteriology, P.O. Box 12, Beit Dagan 50250
ISRAEL
Tel: (972.3) 968 16 98 Fax: (972.3) 968 17 53
Email: menachemba@moag.gov.il

• **Dr Suk-chan Jung**

Zoonosis Laboratory, Bacteriology and Parasitology Division, National Veterinary Research and Quarantine Service (NVRQS), Ministry of Food, Agriculture, Forestry, and Fisheries (MIFAFF)
480 Anyang 6-dong, Manan-gu, Anyang-si, Kyunggi-do
CORÉE (REP. DE)
Tel: (82.31) 467.17.65 Fax: (82.31) 467.17.78
Email: jungsc@nvrqs.go.kr

Treatment

Tetracycline (20 mg/kg BW for 4 weeks) + Streptomycin (20 mg/Kg BW for 7 days).

Prevention and control in zoos

In case of abort or premature birth all the potentially infected material (reproductive tract discharge, foetal liquids, foetus) has to be destroyed properly.

Suggested disinfectant for housing facilities

Formaline 2% surface contact minimum for 1 hr; chlorine 10%-14%. A swab moistened with 70% alcohol can be also used.

Notification

Yes.

Guarantees required under EU Legislation

- Directive 92/65/EEC
- Directive 64/432/EEC
- Directive 97/12/EEC
- Directive 97/12/EEC
- Directive 64/432/EEC
- Directive 92/65/EEC
- Directive 90/425/EEC
- Directive 89/662/EEC
- Directive 1999/466/EEC
- Directive 1999/467/EEC
- Regulations 535/2002/EEC

Guarantees required by EAZA Zoos

EC-EAZA Recommended Code of practice (SANCO/3880/2000) - Federation of Zoos Animal Transactions Policy: RUMINANTS: Certification from the local ministry of Agriculture or equivalent that brucellosis blood test negative within 30 days of export.

Measures required under the Animal Disease Surveillance Plan

Measures required for introducing animals from non-approved sources

Directive 92/65/EEC; 90/425/EEC.

Measures to be taken in case of disease outbreak or positive laboratory findings

Immediate isolation of seropositive animals or slaughter for domestic hoofstock in accordance to local legislation.

Conditions for restoring disease-free status after an outbreak

Contact local state veterinary service.

Contacts for further information

Dr. Fabrizio Gamberane, Email: fgamberale@rm.izs.it

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