

## PORCINE BRUCELLOSIS (*Brucella suis*)

ANIMAL GROUP AFFECTED	TRANSMISSION	CLINICAL SIGNS	FATAL DISEASE ?	TREATMENT	PREVENTION & CONTROL
Feral and domestic swine ( <i>B. suis</i> biovars 1,2,3); European brown hare ( <i>B. suis</i> biovar 2); Arctic fox, Wolf, Bear, Reindeer, Moose, Rodents ( <i>B. suis</i> biovars 4 and 5)	Spread of <i>B. suis</i> and <i>B. abortus</i> infection in similar way: by artificial insemination or natural mating, occasionally, by arthropods ( <i>Oedemagena tarandi</i> )	Generally without any clinical sign; abortion in early and late gestation period can occur. Other symptoms: orchitis, epididymitis, bursitis, synovitis, metritis. General tendency for abscesses to form	No	No	<i>In houses</i>  <i>in zoos</i>

<p><b>Fact sheet compiled by</b> Klaus Gunther Friedrich, Bioparco S.p.A., Rome Zoological Garden, Italy Fabrizio Gamberale, Istituto Zooprofilattico delle Regioni Lazio e Toscana, Rome , Italy</p>	<p><b>Last update</b> November 2002</p>
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<p><b>Susceptible animal groups</b> Biovars 1, 2 and 3 infect feral and domestic swine. Biovar 2 has been isolated in European brown hare. Biovars 4 and 5 infect, in the arctic region, arctic fox, wolf, bear, reindeer and rodents.</p>	
<p><b>Causative organism</b> <i>Brucella suis</i>, biovars 1, 2, 3, 4 and 5.</p>	
<p><b>Zoonotic potential</b> Yes - Biovars 1 and 3 are highly pathogenic for humans. Biovar 2 is rarely pathogenic. Transmission to humans can occur by ingestion, mucosal contact and skin lesions.</p>	
<p><b>Distribution</b> Biovar 1: South East Asia and Pacific Islands; Latin America. Biovar 2: North East Europe. Biovar 3: North America and China. Biovar 4/5: Arctic Region.</p>	
<p><b>Transmission</b> <i>B. suis</i> infection is transmitted by mucosal contact with contaminated materials such as faeces or uterine discharges and vaginal fluids. Transmission can also occur by venereal route or, occasionally, by arthropods (<i>Oedemagena tarandi</i>).</p>	
<p><b>Incubation period</b> Variable.</p>	
<p><b>Clinical symptoms</b> Generally without any clinical sign, or orchitis, epididymitis, bursitis, synovitis, metritis, abortion.</p>	
<p><b>Post mortem findings</b> Depending on <i>B. suis</i> biovar involved. The most common findings are: nodular and miliar lesions in the uterus,</p>	



purulent metritis, endothelial sclerosis of uterine vessels, orchitis, epididymitis, arthritis, spondylitis, granulomatous lesions in skeleton and joints, vertebral osteomyelitis, abscesses.

**Diagnosis tests**

- 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.

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**Treatment**

No treatment.

**Prevention and control in zoos**

See fact sheet for *B. abortus*.

**Suggested disinfectant for housing facilities**

See fact sheet for *B. abortus*.

**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

**Guarantees required by EAZA Zoos****Measures required under the Animal Disease Surveillance Plan****Measures required for introducing animals from non-approved sources****Measures to be taken in case of disease outbreak or positive laboratory findings****Conditions for restoring disease-free status after an outbreak****Contacts for further information**

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**References**

1. Alton, G. G., L. M. Jones, R. D. Angus, and J. M. Verger. 1988. Techniques for the brucellosis laboratory. I.N.R.A., Paris, France.
2. Thorne, E. T. 2001. Brucellosis. *In*: Infectious diseases of wild mammals, E. S. Williams and I.K. Barker (eds). Manson Publishing, London, UK. Pp. 372-395.