Isolation of *Brucella melitensis* from cattle in South Africa

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Brucella melitensis is primarily a pathogen found in goats and sheep, but can also be found in cattle. In South Africa, this organism has been responsible for outbreaks of brucellosis in goats, and is also reported to be the cause of brucellosis in people.[1] We are reporting the detection of *B melitensis* from tissue samples of slaughter cattle from abattoirs in the Gauteng province in South Africa.

Two hundred serum and corresponding tissue samples (lymph nodes, spleen and liver) were collected from slaughter cattle between September 2016 and April 2017. Serological tests using the Rose Bengal test (RBT) and indirect ELISA were conducted on the serum samples. The genus-specific 16S - 23S rDNA interspacer region (ITS) PCR assay[2] detected *Brucella* DNA in the tissues of the ELISA positive samples. All ITS-positive tissues were inoculated on both standard Farrell's and modified CITA media. Morphologically identified *Brucella* colonies were biotyped. All isolates of *Brucella* species were subjected to ITS-PCR assays to confirm *Brucella* DNA as well as AMOS (*Brucella abortus, melitensis, ovis and suis*) multiplex PCR assays that differentiate *Brucella abortus* bv 1,2 and 4, *Brucella melitensis*, *Brucella ovis* and *Brucella suis*.[3]

Of the 200 sera tested, 22 (11 per cent) and 11 (5.5 per cent) were positive for antibodies to *Brucella* species by RBT and iELISA, respectively. ITS-PCR assay detected *Brucella* DNA in nine of the 11 tissues of the iELISA-positives, while *Brucella* species were isolated from seven of these nine PCR-positives. AMOS PCR identified four of the seven isolates as *B melitensis* and biotyping classified two isolates as *B melitensis* biovar 3 and one isolate as *B melitensis* biovar 2.

The implication of these findings underscores the fact that people can become infected with *B melitensis* from infected cattle, either through the drinking of unpasteurised milk or consumption of undercooked or uncooked meat products from these infected animals.

References

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