Brucellosis Backgrounder

(February 16, 2007)

B. suis, *B. canis*, and *B. neotomae*. Within each species,
ed. *B. melitensis* was subdivided into 3 biovars, *B. abortus* into 7
ver, DNA hybridization analysis of *Brucella* has led to the
ne organism, *Brucella melitensis*, and that the previously
actually biovarieties of *B. melitensis*. The conventional names
re, and will be used in this text.

Brucellosis is also known as undulant fever, contagious abortion, Malta fever, or Bangs disease.

Brucella

Humans infected for one year or more are considered chronic cases; clinical signs include chronic fatigue syndrome, depression, and arthritis.

Diagnosis

Bacteriologic culture of blood or bone marrow samples may reveal the presence of *Brucella* organisms, especially during the acute phase of disease. Demonstration of serologic conversion (four-fold rise in antibody titer) from samples collected two to three weeks apart is diagnostic for brucellosis.

Tests accepted by the USDA-APHIS for brucellosis detection and/or confirmation for cattle and bison include the concentration immunoassay technology (CITE) test, complement fixation (CF) test, enzyme-linked immunosorbent assay (ELISA), and fluorescence polarization (FP) assay. *Brucella* infection of sheep can be diagnosed by microscopic observation of organisms in semen or by ELISA, RBT, CF test, and FP assay.

Brucellosis testing in swine herds can be performed using the buffered plate agglutination test (BPAT), rose bengal test (RBT), FP assay, ELISA, and competitive ELISA (CELISA). The allergic skin test can be used to identify infected herds. Serologic testing is not reliable for diagnosis of brucellosis in individual pigs, but is effective for herd testing.

Treatment

Brucellosis is a reportable disease. State or Federal animal health officials should be notified immediately if brucellosis is suspected.

There is no effective treatment for brucellosis in infected animals. Clinical signs may resolve with time, but the animal generally remains infected and a potential source of infection for other animals and humans. Livestock that are confirmed to be infected are usually quarantined until sent to slaughter.

Supportive treatment is often instituted in equine cases. Surgical intervention may be necessary for animals that develop bone or joint infection.

Human brucellosis cases are treated with doxycycline and rifampin for a minimum of three to six weeks. Several months may be required for recovery. Relapses occur in approximately 5% of cases. Veterinarians or other animal healthcare workers that are inadvertently inoculated with the Rev-1 *B. melitensis*, S19 *B. abortus*, or RB51 *B. abortus* strain vaccines should seek medical attention, and postexposure treatment with doxycycline with or without the addition of rifampin is recommended.

Morbidity and Mortality

Animal deaths from brucellosis, other than aborted fetuses, are rare. The human case fatality rate (the number of affected humans that die from the disease) is less than 5%.

Prevention and Control

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The Rev-1 *B. melitensis* vaccine is similar to the strain 19 vaccine, but is used more commonly in