Ask a (Afri)vet:

Staying Ahead of *Brucellosis* IN BEEF FARMS

» DR SAKHI NKOSI
Afrivet Technical & Training Services
info@afrivet.co.za

Brucellosis stands as a significant concern, impacting not only the animal health industry but also the human population, with significant financial burdens on the local livestock sector, leading to multimillion-rand losses annually. It is a devastating disease that is often unnoticed as animals appear healthy.

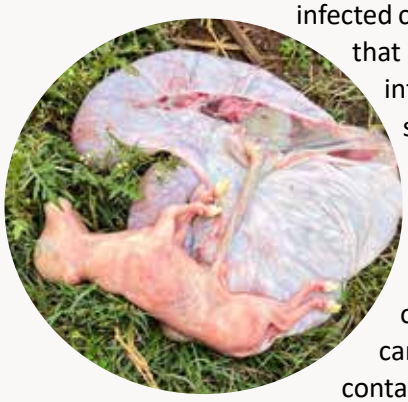
Its highly contagious nature makes it a risk to various animal species and humans. There are different species of *Brucella,* such as *B. abortus* more commonly affecting cattle, *B. melitensis* affecting sheep or goats, *B. suis* seen in pigs, and *Brucella canis* seen in dogs. Notably, *B. abortus*, or bovine brucellosis, also referred to as contagious abortion (CA), holds paramount importance for both beef and dairy cattle.

Looking closer at *Brucella abortus*, it is a Gram-negative intracellular bacterium (which means that it resides inside certain cells of the body), that can cause chronic diseases in cattle and can end up becoming endemic within a herd. The infection leads to adverse outcomes such as abortion storms, stillborn or weak calves, retained placentas, and reduced milk production. Additionally, bovine brucellosis is a herd disease, spreading rapidly within a herd and to neighbouring herds due to infected cattle shedding the bacteria even when appearing healthy.

The insidious nature of bovine brucellosis lies in its ability to spread undetected; the infected

cow usually abort once, after exposure, but can continue to shed the bacteria in the environment. The microorganism has been found in the milk of infected cows and can be excreted over an extended period. In certain instances, *Brucella abortus* has been identified in the udders of non-lactating cows.

Brucella organisms are also detectable in amniotic fluid, the placenta, the uterus of both pregnant and non-pregnant cows, as well as the vagina of infected cows. Additionally, cows that have been previously infected continue to shed the organisms with every calving. Flies have also been found to play a role in the transmission of *Brucella abortus*, by carrying the bacteria from contaminated afterbirth and transmitting it to susceptible cattle through the ocular mucous membranes.



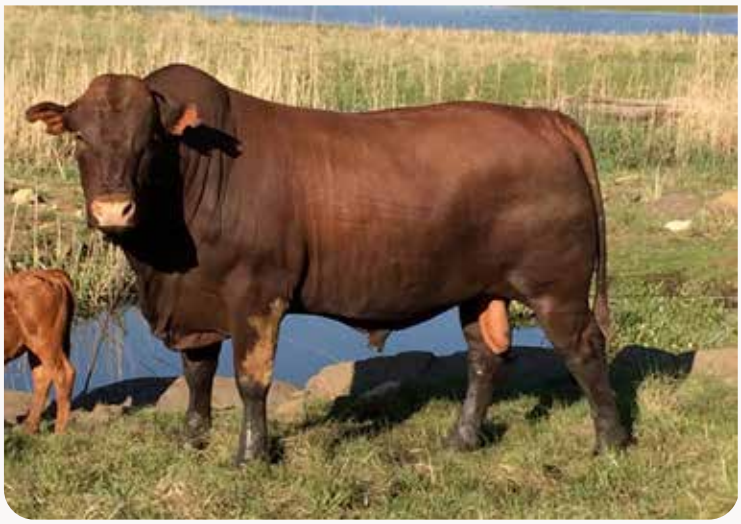
While much attention has been directed toward cows, bulls also play an important role in the transmission of bovine brucellosis. Infected bulls experience inflammation in their testicles and sex glands, resulting in reduced libido and fertility with chronic infection resulting in arthritis. Moreover, the brucella organism can be present in semen, which enables transmission through artificial insemination, cattle ingestion or smelling an infected bull's ejaculate.

Humans in regular proximity to animals, such as farmers, herdsmen, veterinarians, and abattoir workers face an elevated risk of contracting the disease. Infection can occur through activities like assisting with the calving of an infected cow, handling contaminated reproductive organs in the abattoir without the use of protective clothing, consuming unpasteurised, contaminated milk, inhalation of droplets, or via handling of contaminated tissue with open wounds on their arms or hands.

Brucellosis in humans often mirrors flu-like symptoms such as fever, fatigue, weakness, and joint pain, and is usually treated with very specific antibiotics. Sometimes it may go undetected and unreported in human cases, posing the risk of a misdiagnosis by medical professionals. This highlights the significance of controlling the disease at the farm level to ensure the safety of your family and staff.

Bovine brucellosis has attained global recognition and is listed as a notifiable disease by the World Organisation for Animal Health (WOAH). In South Africa, its widespread presence significantly impacts the beef and dairy industries. Recognising the economic and health implications, the South African government has instituted regulations (Animal Disease Regulations (R.2026 of 1986)) under the Animal Disease Act 35 of 1984. These regulations aim to identify, survey, control, and ultimately eradicate bovine brucellosis through the implementation of the Bovine Brucellosis Scheme, established in 1988 under the Animal Disease Act.

This scheme mandates testing, isolation of infected herds, and the slaughter of positive animals to promote the eradication of brucellosis. It is worth noting that repeated testing and slaughter are essential components of the eradication process. Since bovine brucellosis is a controlled disease, all suspected cases must be reported to the local responsible state veterinarian or state veterinary office.



Vaccination emerges as the most effective primary means of control and prevention. The Animal Disease Act in South Africa mandates compulsory vaccination for all bovines. Heifers aged 4 to 8 months fall under this compulsory vaccination requirement. Additionally, the regulation requires that older bovines can only be vaccinated after written consent from the state veterinarian and exposed cattle should be isolated and serologically tested. Serologically negative animals may be vaccinated and those with positive results should be marked and slaughtered under the supervision of a state veterinarian.

There are currently no treatment options available or allowed. Control programmes are based on the detection of infected herds and keeping the disease out of negative herds. Staying ahead of brucellosis demands constant vigilance, adherence to regulations, and a commitment to the health and well-being of South Africa's livestock.

Bovine brucellosis poses a significant threat to South African beef and dairy farms, necessitating a comprehensive and proactive approach to safeguard the nation's herds. Through extensive testing, vaccination, and adherence to regulations, farmers can contribute to the eradication of bovine brucellosis and protect both animal and public health. The ongoing commitment to surveillance and control efforts is crucial in maintaining the well-being of South Africa's cattle industry. Do not wait for your state veterinarian to contact you, be proactive and know your herd's brucellosis status.