

Three of the important Trojan horses to avoid in your herd

■ Dr Didi Claassen - Afrivet Product Manager & Specialist Veterinary Pathologist | didi.claassen@afriwet.co.za | 066 374 0395

Few things are as nice as when you can expand your herd with new animals with high quality genetic material. However, it is really important to avoid buying unwanted organisms with the new animals. Bovine tuberculosis (BTB), brucellosis (BR) and trichomoniasis, are three diseases that are not always visible to the naked eye and you will not necessarily detect these in a general clinical inspection.

BTB and BR are controlled diseases in South Africa. They both have the potential to cause serious disease in humans (zoonotic diseases), can have dire consequences in our national herd, as well as cripple our export markets. It is vital to report any suspect cases to your state veterinarian, who will confirm the diagnosis and assist with curbing the further spread of the disease and eradication on your farm.

Unfortunately, there are no enforced government eradication programmes for trichomoniasis in South Africa yet. Farmers and breeder's societies should make this a priority within their groups and geographical areas to prevent the disease from spreading.

BOVINE TUBERCULOSIS (BTB)

BTB, similar to its human counterpart, is a bacterial disease caused by *Mycobacterium bovis*. Because the organism resides within the cells of the immune system,

it is difficult for the animal to rid itself of infection, and the time from contracting the bacteria to presenting clinical signs (incubation period) can be variable and long (months to years). Animals usually present with chronic wasting, respiratory disease, enlarged lymph nodes, etc. Production losses are experienced in infected herds. Many cases are diagnosed incidentally on post mortem examination or at the abattoir when the disease has already disseminated in the herd.

This disease occurs worldwide. In South Africa it can affect several wildlife species including lion, buffalo and kudu. It is difficult to eradicate from a herd and slaughtering of infected animals (stamping out) leads to great losses, as well as the rejection of affected portions of the carcasses at the abattoir.

Preventative measures include annual testing with intradermal

skin tests of the entire herd, strict biosecurity measures and meat inspections at abattoirs. It is important to report any suspect BTB cases to your local state veterinarian. There are saprophytic organisms that can cause false positive clinical signs and your veterinarian will assist in distinguishing between the different types to best protect your herd.

This is a controlled disease and treatment for BTB is not allowed without permission from the National Director: Animal Health. Treatment is discouraged as relapses can occur which can contribute to disease spread. Humans can contact BTB if they consume unpasteurised milk from infected cattle, if they consume infected meat or organs that are not well cooked or if they work in very close contact with infected cattle.



Dr. S. Davies reading TB skin tests in dairy cattle. Photo taken by Marius Vrey.

BRUCELLOSIS (BR)

This is also an intracellular bacterial disease, caused by *Brucella abortus*. It is a highly contagious and chronic disease, best known for causing infertility and late term abortion in cows. Bulls can also be affected with inflammation of the testes and accessory sex glands. The incubation period for this disease is long and it can take months to years before it can be detected via tests or clinical signs. This is why regular testing of the entire herd is important, even if there are no obvious clinical signs.

The economic losses caused by BR in South Africa has not been calculated accurately in many years. This is due to the disease not being accurately reported by farmers and veterinarians to the authorities, and we do not have accurate livestock census data for South Africa. As a result, the available data is a massive under representation of the real situation. In 1990 the annual losses to farmers exceeded R300 million per year.

Key factors in preventing BR in your herd include:

1. Strict biosecurity

Do not include new, untested animals into your core herd. Do not allow your cattle to mix or graze with unknown or untested cattle.

2. Vaccinations

It is a legal requirement that all heifer calves must be vaccinated between 4-8 months of age.



Animals that test positive for brucellosis should be C-branded to indicate their status. Photo courtesy of Dr Johan Walters.

Note the swelling (hygroma) on the right carpus of the buffalo. These hygromas are some of the symptoms that can be seen with Brucellosis. The underlying joint cavity is not involved. Do not open and drain these swellings seeing that the content can be a source of infection. Report it to your state veterinarian. Photo supplied by Phil Toye.



There are two registered vaccines in South Africa. S19 may strictly only be given to calves between 4 and 8 months. Vaccinating calves older than 8 months with S19 can result in false positive BR tests. RB51 can also be given between 4-8 months and this vaccine can again be used as a booster on older cows. Pregnant animals should not be vaccinated. Bulls should not be vaccinated with brucellosis vaccines at all, as they may become sterile.

3. Testing

Ensure that your entire herd is tested annually. This will prevent the disease from festering in your herd for too long. Early detection is your best defence.

4. If the disease does bypass your biosecurity measures, report positive and suspect cases to the local state veterinarian. The best method to control and eradicate the disease is the slaughter of positive animals. This is done under red cross permit and with prior arrangement with the abattoir, to ensure that people can't sell positive animals to unsuspecting people, and to protect abattoir workers from contracting the disease when slaughtering the positive animals.

5. Educate

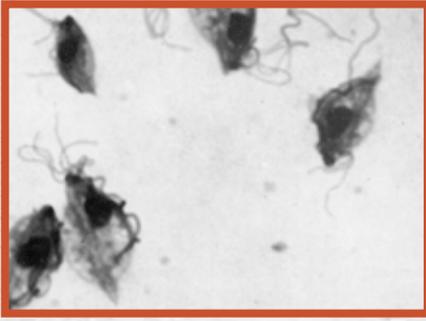
Make sure that you know and understand the disease and transfer this knowledge to others. A united front is the only way to combat controlled diseases.

Brucellosis is a controlled disease and curative treatment is not available for cattle. As discussed, brucellosis is also a zoonotic disease. This occurs mainly through consuming unpasteurised dairy products and handling aborted foetuses, new born calves and calving materials from infected cows. In humans, treatment involves very specific antibiotic treatment and it is important to diagnose the disease early on in its course. It is not a disease commonly seen by medical practitioners. If you know you might have been exposed and have recurrent flu-like symptoms, it is important to inform your doctor if you work with cattle, drink raw milk or have worked with the brucellosis vaccines. It is also important that your doctor contacts the NICD hotline for the correct diagnostic and treatment protocols.

TRICHOMONOSIS

This disease is caused by the protozoa, *Trichomonas foetus* and resides within the genital tract. It can result in infertility, embryonal and foetal death, pyometra (inflammation of the uterus), irregular oestrus cycles and differs from BR in the fact that it causes mostly early abortions. It has been reported in both dairy and beef herds, but is more common in beef herds.

The main route of introduction onto a farm is a new bull. Bulls can be life-long carriers of the organisms. The disease spreads mainly during mating, but can be transmitted during artificial insemination when using contaminated semen. Cows are also susceptible, but can clear



Tritrichomonas foetus organisms in a specimen evaluated using a microscope. Photo courtesy of Anipedia.org.

themselves of infections over a period of time. This period of time is dependent on whether she develops uterine infection, retains her pregnancy, or not.

Certain factors have been linked to higher incidence of disease: Smaller bull:cow ratio; more breeding cows than heifers; continual breeding, with no rest period; bulls older than 4 years; beef herds are more susceptible; and communal grazing.

As with the other two diseases there are no obvious clinical signs. Cows can either become infertile or abort early (14 days – 5 months of pregnancy) or rarely late in pregnancy. The pregnancy rates can vary between 35-40% (in

recently infected herds) to 75-80% (in chronically infected herds). If you have a low to moderate conception rate, it is important to request a veterinarian to test your herd for trichomonosis and for campylobacteriosis. The latter can have similar effects on the herd to trichomonosis, but the two diseases can occur concurrently. The samples are collected once a week for three weeks, to improve the chances of finding the organisms. The best time is just before the breeding season commences.

There are treatment protocols available for trichomonosis, but they are burdensome and not always successful. It is advisable to consult your herd veterinarian and to discuss their preferred approach. There are two commercial vaccines available in South Africa. The vaccines do not offer total protection, but has shown to decrease shedding by infected animals.

The control strategies of trichomonosis are multifactorial. One has to consider how prevalent the disease is and disseminates between herds (epidemiology), which diagnostic tests were performed, and lastly the unique farm conditions. One can start by implementing the

following measures, but the most important component is a method that is achievable by and unique to your herd.

Infected bulls must be dealt with, either through treatment or culling; bulls should be free of infection before the breeding season (veterinary testing); decreasing/eliminating infection in cows; vaccinations; and preventing reinfection.

The best way to deal with these three Trojan horses is not introducing them into your herd to begin with. However, seeing that they are not visible clinically, this can be difficult. A good relationship with your herd veterinarian accompanied by regular screening, and vaccination (BR and trichomonosis) for these three diseases at a herd level is your best defence in control and eradication. Remember to report suspected TB and BR cases to your local state veterinarian.

References:

Anipedia.org and personal communication with Dr Alicia Cloete DALRRD.



Charl-Pierre & Lindie Marais

EAST LONDON

Cell: 083 845 9316

charl@mccormickagri.co.za

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TIGER – K6K2738 X 3094

RIANA – GIANNI 2812 X 717