



## **Cattle Chat – December 2011**

### **What about the major reproductive diseases**

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There are numerous infectious diseases that can cause significant reproductive losses in beef herds on the North Coast and throughout Australia. Usually, however, losses caused by infectious diseases are not as significant as reproductive losses caused by inadequate nutrition or unsound breeding bulls. Reproductive diseases, like bovine vibriosis, are considerably more capable of causing losses of higher magnitude in herds than some others.

Major reproductive diseases include:

- Bovine vibriosis (bovine campylobacteriosis)
- Bovine pestivirus
- Bovine trichomoniasis
- Leptospirosis

Reproductive diseases of generally lesser, but not insignificant, importance include:

- Bovine ephemeral fever (3-day sickness)
- Akabane and Aino virus
- Neospora caninum
- Bovine Theileriosis

Vaccines are available to aid control of losses from bovine vibriosis, bovine pestivirus, leptospirosis and bovine ephemeral fever. To assess relative risks and to maximize the cost-effectiveness of vaccination-based control strategies, however, it is important that producers consult their veterinarian about the most appropriate vaccination strategy before deciding to vaccinate, or not to vaccinate.

In potentially flood-affected locations around the North Coast, cattle from many herds must periodically be temporarily boxed together on flood reserves. Disease control strategies must take these potential exposure conditions into account and, preferably, be coordinated amongst producer groups who are likely to rely on particular reserves during times of generalized flooding. Livestock Health and Pest Authority veterinarians, private veterinary practitioners and local authorities can assist and facilitate producer group coordination of animal health safeguards, but ultimately, the producers themselves must be prepared and motivated to actively collaborate in their collective better interests.

For the remainder of this chat, I'll endeavor to address bovine vibriosis and progressively get to others during later chats.

Bovine vibriosis is a bacterial venereal disease of cattle. It is, arguably, the most important reproductive disease affecting beef cattle in Australia. When first introduced to a herd without immunity, it can cause reproductive (calving) losses in the first season of greater than 30% and subsequently persistent lower grade herd calving losses approaching 5% or more, especially prominent amongst heifer groups. The disease causes non-immune cows to fail to conceive or to resorb or to abort the young foetus and return to service haphazardly, often failing to get in calf for a year or more.

Bulls with no immunity become infected from the reproductive tract of an infected cow during mating. The bacteria grows and persists in the bull's prepuce and they then spread it very efficiently through mating to other non-immune cows. When it enters a herd, it rapidly infects all non-immune bulls and very rapidly spreads throughout the herd. The bacteria persists in the prepuce of naturally infected bulls for years (life) unless eliminated through treatment or vaccination. Most cows develop immunity after initial infection, but this often does not persist for life, so they may become susceptible again. Some cows retain persistent infections in their reproductive tract for more than a year after initial infection. This ensures that infected cow herds remain infectious for new bulls from breeding season to breeding season.

Bovine vibriosis is common and very widespread amongst the general beef cattle population. If herds have not been assessed for the disease and calving rates are usually less than 90% (under well managed, North Coast conditions), they may already be infected and suffering significant recurrent production losses.

Bovine vibriosis is easy to cost-effectively control and prevent. There is a vaccine available (VibroVax®) that may be administered to bulls, cows and heifers. It is, however, usually only necessary to give it to all bulls for cost-effective control under commercial production conditions. All bulls should be vaccinated all the time for effective herd protection.

The vibriosis vaccine is rather unique amongst vaccines because when it is initially given to an infected bull, it will usually clear the infection quite rapidly more than 95% of the time. Very few bulls that are not cleared initially will remain infected over following years after vaccinations are boosted. Bulls that have been fully vaccinated before exposure to infected cows will not acquire or spread infection. Under commercial conditions, vaccination of all bulls and diligent annual boosting, combined with natural immunity-based clearance of infection amongst infected cows, will progressively clear the herd, effectively protect it against re-introduction and re-transmission, and effectively minimize reproductive losses over the ensuing breeding seasons.

The vibriosis vaccine must initially be given twice with a 4-6 week interval and then boosted every year 4-6 weeks before the main breeding season commences to maintain protection. It is available in multi-dose vials, the smallest of which contains 10 doses and it cannot be stored from year to year. Producers with less than 10 bulls are strongly encouraged to collaborate with their neighbors to utilize all vaccine and provide enhanced area-based herd protection against disease spread by straying animals.

Until next chat .....