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## Vibriosis – a real threat to productivity

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Campylobacteriosis (Vibriosis), a sexually transmitted reproductive disease of female cattle is an important and, at times, contentious issue in the cattle industry. People need to understand what the disease is about, how it works and how to best control it through an effective vaccination program.

- This disease is caused by a bacterial infection *Campylobacter fetus*, subspecies *venerealis* being spread by infected bulls during service and is widespread throughout the Australian cattle herd. It is regarded as a very common cause of infertility and sporadic abortion in Australia.
- It shows as a “return to service” syndrome with heifers/cows failing to conceive but continuing to come on heat.
- The disease does not cause any systemic illness but results in a temporary infertility for a period of 3-5 months. Some cows can remain carriers of infection for up to two breeding seasons.
- Infected bulls show no clinical signs but become carriers and infect susceptible cows. The organisms are present in the bulls prepuce. Bulls become infected after serving infected cows.
- When infection occurs in a herd only about 10-30% of females will get pregnant in the first 2-3 cycles i.e. there will be long periods when no or few calves are born. In control mated herds this can be very expensive.
- Most heifers/cows will “self cure” after about 3 cycles i.e. 3 months. A small percentage will remain infertile and some cows may abort between 5-7 months of pregnancy.
- **The disease is endemic (common) throughout Western Australia.** Up until a few years ago it was extremely difficult to collect samples and diagnose and hence it remained undetected but suspected.

For the past 10 years the Department of Agriculture has been advocating the use of Vibriosis vaccination in bulls to control the problem in continuously mated herds due to the difficulty of timing vaccination regimes in female breeders.

Recent work by a vaccine company has demonstrated that significant improvement in conception and calving rates can be achieved by vaccinating maiden heifers.

This is significant because many cattle producers are now mating their maiden heifers as a separate group and are able to vaccinate prior to mating.

Field trials run several years ago by Allan and Mutch of the QDPI clearly showed a marked improvement in pregnancy results when heifers were vaccinated.

In the first study the presence of Vibriosis was confirmed in the herd by vaginal mucous agglutination tests. The heifers were kept isolated from the bulls prior to commencement of the trial. The bulls were left unvaccinated, one group of heifers were vaccinated twice and the remaining heifers were maintained as unvaccinated controls. Pregnancy testing was carried out around five months after the heifers were given their second dose and 76% of vaccinated heifers were found to be pregnant while pregnancy was diagnosed in only 55% of the unvaccinated heifers.

A second trial was conducted in another endemically infected herd but this time the bulls were vaccinated as well as one group of heifers. When pregnancy testing was carried out on this herd about seven months after the first vaccination, again there was a significant difference between the pregnancy rates of the unvaccinated (61%) and (85%) in vaccinated heifers.

Permanent infertility can result in up to 11% of heifers infected with Vibriosis. In addition, while most heifers and cows will self-cure in 3 to 5 months, some can remain as carriers of the organism for up to two breeding seasons. These cows will harbour the infection in the vagina and may carry calves to term normally, hence they are unlikely to be culled and yet they remain an important source of infection for the rest of the herd. It is a combination of these chronically infected cows, bulls that were not mustered when the rest of the herd were vaccinated, and rogue bulls that will continue to spread Vibriosis throughout the herd when a bull only vaccination programme is undertaken.

It is vitally important that the correct advice is given when it comes to recommending a vaccination programme against livestock diseases. Bull and heifer vaccination against Vibriosis are justified and warranted.

Our recommendation is to vaccinate all bulls twice with a 5ml dose, ensuring the second dose is given at least one month prior to joining. Bulls should then receive an annual booster of 5ml every year.

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Heifers under the age of 18 months need 2 doses of 5ml and heifers over the age of 18 months and cows only require 1 dose of 5ml to start their programme. This can be followed up with annual booster doses in those heifers and cows of 2ml or a 5ml dose every two years.

Veterinary advice should be sought prior to the implementation of a vaccination programme. If you are seeing signs of this disease then a bull and heifer/cow

program would be considered appropriate. The vaccine should be administered under the skin, high on the neck. "Vibrovax" contains an oil-based adjuvant which is slightly irritant when given and will cause a lump at the site of injection. This should diminish over time.

If you are purchasing bulls it would be wise to insist that they are correctly vaccinated with 2x5ml doses before delivery to your property. You only need then to follow up and give annual boosters.