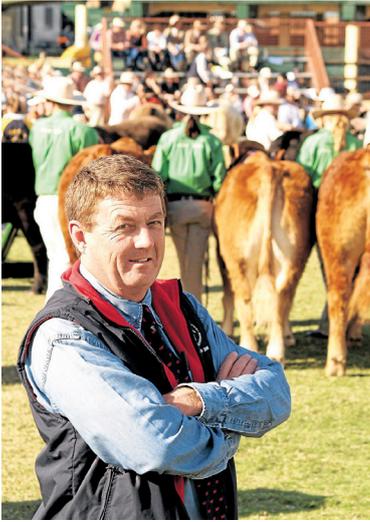


Pestivirus shadow across seedstock



The beef seedstock industry and associated activity such as stud cattle shows and sales are coming under increasing scrutiny as potential high-risk infection points for bovine viral diarrhoea virus.

If statistics are anything to go by, there could have been anywhere between seven and 13 animals acting as carriers of the highly infectious BVDV virus

among the 1300 stud beef cattle competing at Brisbane's recent Royal Queensland Show.

That's a sobering thought when it is considered that much of the future genetic potential of Australia's commercial beef industry was represented on the grounds at the time.

Speaking at an Ekka forum organised by the Australian Registered Cattle Breeders Association, Professor Mike McGowan (pictured) from the University of Queensland outlined some of the dangers and challenges associated with BVDV in the cattle industry.

"Walking around the Brisbane Show, my best estimate is that one in 100 to one in 200 animals are likely to be persistently infected with BVDV," he told the audience.

Outside the exotic viral infections like foot and mouth disease, BVDV rated as the world's most important viral infection of cattle.

It was first identified in Australia in 1957 and has now spread throughout the major beef and dairy-producing areas.

However, it is only in the past decade that stakeholders have begun to truly appreciate how large the disease's impact can be.

Today, 90 percent of beef and dairy herds showed evidence of BVDV infection at some time, Prof McGowan said.

Typically the group of cattle at greatest risk of infection was heifers, because the likelihood of immunity through prior exposure increases with age. However, the prevalence of immune cattle varied significantly between herds and between management groups on the same property.

"There are large numbers of highly susceptible heifer mobs out there right now in which an outbreak of BVDV infection could be devastating," Prof McGowan said.

Heightening the risk of infection was the fact that often when a commercial producer brought in new bulls, they were placed into the heifer herd. The major source of BVDV infection is direct contact with persistently infected (PI) animals, which arise as a result of infection of a

susceptible female in early stages of pregnancy.

The resultant PI calf was sometimes – but not always – easy to visually detect, and might appear clinically normal.

"They could even win a grand championship at the Ekka, and statistically, probably have in the past," Prof McGowan said.

"Our best estimate is that at least 40pc of cattle herds out there contain PI cattle, and the larger the herd, the more likely it will contain a PI."

Co-mingling of cattle from large numbers of seedstock herds during events like the Brisbane or Sydney show or seedstock sales provided a classic opportunity for transmission.

"It only requires contact for an hour or two between a PI and susceptible animals for transmission to take place. Carriers excrete millions of particles carrying virus into the air, and over-the-fence transmission is easy," Prof McGowan said.

The introduction of a PI animal to an immunologically naive herd could cause catastrophic losses in terms of conception failure and postbirth losses several years later.

Semen and embryos were other potential sources of infection, but this was much less common. However, there was plenty of on-farm 'customcollected' semen out in the market that had not gone through the established rigorous protocol for BVDV testing.

So what can seedstock producers do to minimise the risk of transmitting BVDV to their clients' herds through sale animals?

"The essential thing is in the need to preclude selling infected animals," Prof McGowan said.

"It should be a part of the QA program to verify that sale animals are not infected with BVDV."

One recent episode saw a large northern Australian producer buy a bull from southern Australia for \$10,000. That animal was subsequently found to be a PI. Another of Australia's largest and best-known Angus seedstock producers was also found to contain PI animals some years ago. "So the issue is real; it's occurring," Prof McGowan said.

The first step for seedstock producers was to determine the BVDV status within each of their breeding herds, through commercial, highly reliable ear-notch testing. If most females were found to be not immune, vaccination was the best option, in association with implementing biosecurity measures to prevent the risk of infection from incoming cattle.

If there was already evidence of BVDV infection within the herd (90pc of herds, unfortunately), all breeding cattle for sale – both bulls and females – should be tested and verified to be non-PIs, and a control program implemented to identify PI females producing further PI offspring.

Seedstock producers should also consider the risk and impact of BVDV infection in sale cattle when they are

introduced to a new property.

“Many seedstock producers already vaccinate sale bulls for vibrio, tick fever, three-day and so on, to ensure that they perform on the client’s property,” he said.

“If females without immunity go onto a new property and are exposed to BVDV, then their performance can readily be compromised.

“Similarly with bulls carrying no immunity, they can suffer a depression in immune response in which their semen quality can be compromised.

The virus also persisted longer in the reproductive tract of transient infected bulls than what had previously been supposed.

Dr McGowan believes that within the next two years, major seedstock events such as the Royal Sydney and Brisbane shows will introduce a mandatory requirement that all cattle entering the showgrounds be tested as non-PIs.

In the case of the RAS in Sydney, discussions were already well advanced, and there was a prospect of the requirement being implemented next Easter.

“Will testing become mandatory across the broader seedstock industry? I think in the short to medium term it will remain voluntary.

But like so many programs, it will be the commercial producers who drive it, along with the seedstock industry which is beginning to recognize that it is part of its QA responsibility, as well as adding value to the product,” Prof McGowan said.

What is causing BVDV?

What is BVDV?

Bovine viral diarrhoea virus (BVDV), also known as pestivirus, is a viral infection present in feedlots and beef and dairy herds across Australia.

How is it transmitted?

Persistently infected (PI) animals primarily spread BVDV within a herd.

Infection of a foetus (0-125 days) can result in the birth of a PI animal that carries the virus for life.

BVDV is spread through saliva, nasal secretions, dung, urine, tears, milk, semen, vaginal discharges, placenta and birth fluid.

How will it affect a herd?

BVDV can affect conception, calf survival, weaning weights and rates. Feedlot performance can be affected by morbidity, mortality, lower feed consumption and weight gain.

How can it be controlled in a herd?

Work with your veterinarian to determine your herd’s BVDV status and develop a testing, management and vaccination program to detect and eliminate PI cattle. Adopt management and biosecurity practices to minimize infection risk.

Legal questions arise

QUESTIONS of legal liability have also been raised over the risk of spreading BVDV from seedstock animals into naïve commercial herds. Certainly in the litigious US industry, court cases over infection have already been fought out. Professor McGowan said that, in his opinion, if a breakdown were to be tested through the courts in Australia, the issue would come back to one of responsibility – effectively, whether the seedstock producer was responsible for ensuring that the animal in question was a ‘normal breeding animal’, and ‘fit for purpose’.

“It’s one of these questions that the seedstock industry needs to examine, perhaps with some legal input,” he said. “But I think it will be tested here sooner, rather than later.”

Show societies and sale committees, as third parties under common law, could also be held responsible under litigation for loss of income.

One of Australia’s pre-eminent animal scientists working in the pestivirus field, Dr Peter Kirkland, said he knew of a number of cases where stud animals that had been sold to clients had later been discovered to be PIs. Both parties had then had to unravel the mess afterwards.

He said the scientific community had been trying to “twist the arm” of show and breed societies over risks associated with BVDV for 10 years, but had made little progress – partly because Johnes’ disease had “gotten in the way”.

“But in the last year or so, it has come back on the agenda. Some show societies say they feel vulnerable, but realistically, it is breed societies that should be convincing seedstock producers to participate.”

“I can’t afford to miss any PIs in the beef or dairy game – leaving one behind means the whole job is botched - but if we can protect 95% of the pens that would have had a PI in them, we can still salvage a lot of lost value,” Dr Bergman said. “I expect ear notch testing under those circumstances to be a profitable exercise in high risk cattle.”

He suggested that the ability to diagnose PIs before they died or required antibiotic therapy – so that they could be sold straight to slaughter instead of eventually ending up in the chronic pen or dead pile – would cover most of the cost.

“Where feeders haven’t had a chance to be preconditioned, ear-notch testing should return a profit when the direct return from potentially salvaging a PI is added up, as well as the impact that calf would have had on the rest of the unprotected pen,” he said.

There is no doubt that there is still a lot to be learned about BVDV and BRD. But as long as BRD continues to cost the industry a minimum of \$40 million a year, the Australian lot feeding industry is likely to keep on looking and learning.