Biosecurity for Purchasing Beef cattle in southern Australia

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Introduction

The word biosecurity literally translates to "safe life", and although it has many other uses, the context which we are referring to in this article is a set of measures designed to reduce risk of incursions of pests and disease.

We employ biosecurity for a number of reasons but for animal health it is used to reduce the risk from both the rare but high costs of an exotic disease incursion and the constant every day threats from endemic diseases.

Background

To many people biosecurity is a function of government and is not the concern of producers. In reality it is a shared responsibility and as far as exotic diseases are concerned, although the Australian Government is charged with border security there has always been an assumed responsibility of travellers and importers to comply with regulations.

This shared responsibility extends to all of us and this is best illustrated by the industry dividend of $46 billion, we see if we limit an exotic disease incursion to a small number of farms by its early discovery, rather than a larger outbreak that involves many farms and multiple states. In a large outbreak beef prices drop by 80%, only returning to 85% of pre-outbreak prices after 10 years as opposed to a small outbreak with a drop of around 15% returning to parity within 3-4 years.

On farm biosecurity

The best form of on farm biosecurity is to have a closed herd with no introductions. If your herd is large enough and the interest is there, breeding your own bulls with importation of genetic material through registered AI centres is reasonably straight forward.

If stock have to be purchased, buying direct from a producer or stud, where you have a good understanding of their animal health management and disease status will go a long way to reducing your disease risk.

Endemic diseases are a day to day threat which we must always be conscious of. Keeping disease out requires a knowledge of what is out there and what is out there that you don't already have. There is not much point worrying about a disease that you already have or one that is of little or no consequence.

There are diseases that rather than cause direct losses will cause indirect losses due to trade restrictions. The classic example is Bovine Johne's Disease (BJD), which in our beef production systems causes little in the way of direct losses, but can limit market access. The BJD management policy is currently under review and a new policy regime is expected to be introduced in 2016.

The diseases the rest of the paper will refer to are those economically important diseases in southern Australia, and they include multiple resistant worms, pestivirus, and vibriosis.

Gastrointestinal worms

Since the release of the first macrocyclic lactone (ML), Avomec cattle drench over 30 years ago, drench resistance in cattle has largely been forgotten. The potency of this class of chemical, the age related immunity of cattle and the natural source of refugia that cattle dung pats provide has led us to become complacent. Today well over 90% of drenches used on cattle are MLs and this has been the case for many years, putting evolutionary pressure on the worm population to develop resistance, which is exactly what they have done.

There are a number of surveys now which have demonstrated that resistance to MLs is relatively common. A study by the Mackinnon project, found that 50% of the ten properties they tested had evidence of resistance, including two properties with resistance to our most dangerous type of cattle worm Ostertagia1.

In the high rainfall zones worms can be a significant production limiting disease, if we lose the most effective drenches it may limit some aspects of how we farm. A recent report showed that post weaning losses due to less than ideal worm control range from 14-26 kg for the 6 months post weaning1. Epplestone and others showed that the difference between worm-free and untreated weaners was around 60 kg compared with untreated weaner cattle2.

The biosecurity risk is introducing cattle that have existing resistant worm populations. The concept of a quartine drench is standard practice in the sheep industry and it should be the same in the cattle industry. All introduced stock including bulls should be drenched with a three way combination drench containing an ML, a white (a benzimadazole) and a clear (levamisole). This can be given as an oral triple combination or an injection and an oral drench but we can't get away from some form of oral drenching. If possible these drenched cattle should be left in the yards with food and water for 3-4 days and then checked after release with a worm egg count (wec) at 10-14 days to ensure that the quarantine drench has worked. This precautionary approach will reduce your chance of introducing a nasty resistant worm but sensible cattle worm control and using combinations or rotations of drenches should be practised on all farms.

It is important to remember that it is very difficult to interpret faecal egg counts in older cattle. They have an age related resistance that develops from around 12 months on, making it difficult to both determine the efficacy of your drenches or reliably interpret the response you may get to a drench under field conditions.

Pestivirus

For all its complexities there is a very simple message with Pestivirus; if you are buying in bulls they should all be tested negative for Pestivirus antigen. The introduction of any persistently infected (PI) Pestivirus carrier into a herd that is previously free can be a disaster. The difficulty is most people are unaware of their current Pestivirus status. A large proportion of herds in southern Australia will be infected and blissfully unaware.

There are a number of pathways with Pestivirus management;

Do nothing which is what the vast majority of us do, we may be free we may have the disease and incur some ongoing losses, but the exact amount of losses is difficult to generalise about as it is determined by herd structure, and management. The real train wreck occurs when a PI animal, shedding virus comes in contact with naïve animal that are pregnant resulting in significant reproductive waste.

On farm eradication, the disease can be eradicated on a farm basis and even some countries have eradicated this disease. A test and cull management program is expensive to undertake and will leave the herd vulnerable to the accidental reintroduction of disease, so requires strict ongoing biosecurity practice.

Vaccination. The Pestiguard vaccine has been available for a number of years now and is effective at controlling the disease. It involves vaccinating initially with two shots and then annual boosters at around $4.00 per shot. The one thing to remember with vaccination is that it will not necessarily eradicate the disease it will persist and if you stop vaccinating you can end up with a reproductive disaster.

If you are interested in Pestivirus control talk to your veterinarian about a herd profile blood test to assess your current Pestivirus status. Control options can then be developed, based on your current status, herd structure, trading history and risk profile.

Vibriosis

Vibriosis is a reproductive disease of cattle usually carried by bulls, which causes early embryonic loss, resulting in a return to service or low pregnancy rates. The disease prevalence in southern Australia is unknown, but the disease occasionally causes reproductive failure.

The disease is controlled by annual vaccination of bulls.

BJD

As stated earlier BJD management is under review and as a significant part of the losses due to BJD are due to trading restrictions, the recommendations for control may change based on the new policy

in 2016. BJD itself is a bacterial scour that results in an incurable scouring/wasting disease in some infected cattle after many years of infection. A vaccine Silirum is now registered and reduces or eliminates clinical cases.

The prevalence of BJD is low in beef herds compared with dairy herds, so a common sense approach is to buy "beef only" or buy from herds with a testing history that demonstrates that they are low risk (MAP accredited).

Protocols for buying cattle

It is best to break the biosecurity process up into three components; prefarm gate, farm gate and post farm gate.

Prefarm gate

This is the stage where we do all preliminary checks to make sure that the cattle we are buying are healthy and unlikely to be carrying any disease that may affect the rest of your herd. Check all animals look heathy, PI Pestivirus carrier animals are usually, but not always, poor doers and look less than healthy and usually die before 2 years of age.

Check the cattle health statement for previous treatments including vaccinations for clostridials and lepto (7in 1), drenches. If you're buying bulls, pestivirus antigen negative is a must with a herd history of vibrio vaccination.

Farm gate

It is here that we do all preventative treatments as animals enter the farm.

All animals get a quarantine drench of a mixture of three different actives and then allowed to clean out for 48 -72 hours in the yards if possible. If they have come from a fluke area then a combination drench with Triclabendazole should also be used. Any other animal health treatments that are required should be given now, such as vaccinations or trace element supplementation.

Post farm gate

Keep the new arrivals separate from the rest of the herd for a period of at least a month to ensure that they are healthy. The quarantine paddock should not allow nose to nose contact with the rest of the herd so should be separated with a laneway or shelter belt. At this stage any illness or death should be investigated by a vet.

Conclusion

The introduction and subsequent losses of a disease is a significant ongoing threat to all producers. This threat can be reduced with simple practical risk mitigation steps. These biosecurity are easy to implement, inexpensive and the payoff is ongoing and cumulative.

Bibliography

1. Rolls N. and Webb Ware J. (2011). Managing production risk on high input farms Optimising key animal health issues. Meat and Livestock Australia, Sydney, NSW.

2. Eppleston J. (2011). Managing the Growth of Weaner Cattle; The impact of internal parasites. Meat and Livestock Australia, Sydney, NSW.

Ends.

LBN is an independent industry initiative established by the Cattle Council of Australia, Sheepmeat Council of Australia and WoolProducers Australia to better prepare Australia's livestock industries to manage biosecurity risks.

By working closely with farming networks around Australia, LBN regional officers are providing producers and industry with the tools and information they need to protect the health and productivity of their livestock, and to prepare for endemic and emergency pest, weed and disease outbreaks.