

# Animal Health Update

## Local animal disease watch

### Bill Johnson, Goulburn district vet

#### Ovine brucellosis still a costly disease

It can be interesting to watch who buys cull rams at the weekly sheep sale. With prices for new rams at on-property stud sales at record highs, some producers can't resist a bargain. But sometimes these cheap cull rams end up costing a lot.

Ovine brucellosis is a bacterial disease that mainly affects rams, reducing fertility and often leading to permanent sterility. The infection is easily spread from an infected ram to other rams on the property through close contact in the ram paddock, as well as at joining time. Ewes are usually only mildly affected, although some may abort or deliver weak lambs.

Most ram studs regularly test their sheep and are vigilant about strays to ensure any rams they sell do not have ovine brucellosis. They proudly promote their rams as Ovine Brucellosis Accredited Free. Yet we frequently still diagnose ovine brucellosis as the reason for poor lambing percentages on commercial sheep farms.

On several occasions, this serious infection has arrived on the farm via a few rams "going cheap" at the weekly prime sheep sale. Infection may also persist in commercial flocks that buy rams from accredited free studs if some of the old resident rams are already infected.

With autumn joining not far off, it is time to check your ram team. Ovine brucellosis often causes a firm lump to develop at the bottom of the ram's testicle, which can be easily detected by palpating the scrotum from behind. A

blood test of affected rams is required to confirm the infection. The NSW DPI Primefact 472 titled Ovine Brucellosis

([https://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0006/145824/Ovine-brucellosis.pdf](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/145824/Ovine-brucellosis.pdf)) shows how to check for the disease, and steps to take to avoid it. One of the strong messages is to NOT buy "cheap" rams from saleyards.

#### Tick activity and *Theileria*

Recent rain and warmer temperatures have created ideal breeding conditions for ticks, and cattle on the coast and highlands are showing the effects. Bush ticks are the most abundant at present, often crowding onto the head and ears of cattle for a feed.

For the most part, bush ticks are just a nuisance, causing irritation and hide damage. But in sufficient numbers on young or weak stock, they can suck enough blood to cause anaemia. An even more sinister impact of these ticks is that they transfer the often fatal organism *Theileria*.

Several new cases of *Theileria* were diagnosed during the month, associated with weakness, anaemia, jaundice and deaths, especially in calves. Talk to your district vet if you suspect *Theileria* and to discuss control options.

#### Barber's pole worms

Barber's pole worms have killed several sheep and goats across the region. Few of these cases involved neglect; in fact most of the deaths occurred in stock that had only recently been drenched. In one case, the ewes had been drenched at lamb marking when the mob was moved to a spelled paddock five weeks before the deaths started. The mob was again yarded for the lambs to be drenched only a week prior to the deaths

and no problems were apparent. The district vet was contacted when three pretty fat ewes dropped dead while moving the mob a short distance, and several ewes were noticed to have bottle jaw. The dead ewes were extremely pale, and masses of adult barber's pole worms (*Haemonchus contortus*) were seen on post mortem examination.

Dung samples collected from the drenched lambs had worm egg counts exceeding 4,000 eggs per gram, indicating the drench used just a week prior was ineffective. This case is a reminder that barber's pole worms are increasingly being found resistant to drenches. The drench used on the lambs only contained abamectin, a chemical that now fails to control barber's pole worms on more than 50 percent of properties in our region.

In another case, the absentee owner noticed one sheep "a bit sick" when he visited on the weekend. By the following Friday, six of his 40 fat crossbred hoggets had died in the paddock. They had plenty of feed and had been drenched with ivermectin five weeks previous. In a third case, six of a mob of 70 does with young kids died four weeks after a drench. Unfortunately there are few registered drench options for goats, and there is widespread resistance by barber's pole worms to these drenches. Of course possible drench resistance is not the only explanation; barber's pole worms lay stacks of eggs that hatch quickly when it is warm and wet enough, leading to heavy pasture contamination. Sheep and goats can pick up a fatal burden of barber's pole worms soon after drenching with a short-acting drench if left to graze a dirty pasture. However, it pays to check that the drench you used has worked by doing a *DrenchCheck* (<http://www.wormboss.com.au/tests-tools/tests/checking-for-drench-resistance-with-a-drenchcheck.php>) 10-14 days after drenching.

### **Cattle producers throw money away**

All cattle sent to a saleyard or abattoir must be identified, either with an electronic ear tag or rumen bolus. It is nothing new. An electronic cattle ear tag with your property details embedded costs less than three dollars a head. Yet every week, producers fork out up to \$55 per head to have emergency tags applied at saleyards because they sent cattle for sale without identification.

Thousands of weaner cattle will be sold at special sales in the South East over the next couple of months. It doesn't take long to check that all cattle have an ear tag before they leave the property.

But if past years are anything to go by, at least one local producer will throw away more than the value of a

decent weekend getaway when their untagged weaners turn up in the saleyards, and many more will forego the value of a good night out.

### **Straying livestock**

Discharging firearms and riding dirt bikes creates tension between neighbours on rural holdings. But topping the list of tension-causing issues would have to be fences and straying livestock. The focus on this issue has further intensified as now all red meat producers are required to have a farm biosecurity plan. In some cases, decades old disputes have reignited.

The requirements for a fence between neighbouring properties are contained in the *NSW Dividing Fences Act 1991*

(<https://www.legislation.nsw.gov.au/#/view/act/1991/72/full>). One common misconception is that "since I don't own any stock, I do not have to contribute to the erection and maintenance of the boundary fence".

The Act refers to a *sufficient dividing fence*, taking into account *the kind of dividing fence usual in the locality and the purposes for which the adjoining lands are used or intended to be used*. With regard to who pays, *an adjoining owner is liable...to contribute to... a sufficient dividing fence*.

When it comes to seeking the cooperation of your neighbour with fencing there are right and wrong ways to go about it. While the Act specifies a process for notification and cost-sharing, most disputes come down to neighbours not taking the time to talk to one another about their boundary fence.

### **Do you have a brain?**

Australian livestock producers have access to several lucrative export markets for meat and biological products (that are used to produce vaccine, among other things) because there have been no cases of BSE recorded here. BSE, or mad cow disease, is an infectious disease that caused pandemonium around the world when cases of a progressive, fatal brain disorder in humans were linked to consuming meat from infected animals.

In order to prove that Australian livestock are free from BSE, and the related sheep disease scrapie, surveillance and testing is targeted at adult animals with neurological signs. Brain and spinal cord samples are submitted from animals showing any of a range of symptoms including excessive licking, change in temperament, incoordination, and inability to rise.

If you have an adult animal that shows neurological signs, your district vet is keen to hear from you. You will

be helping to maintain access to international markets for your industry, tests to determine the cause of the problem will be carried out at no cost to you, AND you will receive an incentive payment (\$100 for a sheep, and \$300 for cattle) for all cases that qualify. Ring your district vet for more details or refer to the 'Bucks for Brains' brochure

([https://www.animalhealthaustralia.com.au/wp-content/uploads/2015/11/Bucks-for-Brains\\_Jun16\\_WEB.pdf](https://www.animalhealthaustralia.com.au/wp-content/uploads/2015/11/Bucks-for-Brains_Jun16_WEB.pdf)).

## Toxic plants harming livestock

### Alexandra Stephens, Yass district vet

#### Paterson's curse and heliotrope causing liver disease

Paterson's curse and heliotrope are common paddock weeds, and can occasionally grow in large numbers in paddocks that have been cultivated, sprayed or damaged by fire. Infestations can be potentially hazardous to stock as these plants contain a toxic alkaloid in all parts of the plant. These plants may be grazed by hungry stock looking for green feed. When consumed the alkaloid causes a cumulative liver damage that is irreversible and known as pyrrolizidine alkaloid poisoning. Alkaloid and thus toxicity levels are lowest when the plant is in the rosette stage and are greatest when the plant reaches the flowering stage. As the plant ages and dries off the toxicity levels then drop off again. Irreversible liver damage leads to ill thrift, effects on the brain, and death many months or even a year after the damage occurred. Pigs, horses and cattle are the most sensitive, sheep and goats the least. A tougher spring followed by summer rainfall can encourage large numbers of these weeds to dominate even in non-cultivated paddocks, and these plants are at their most toxic right now. Avoid allowing pigs, horses or cattle access to these weeds.

#### St John's wort causing photosensitisation

It has been a good season for St John's wort and some producers have recently had goats and sheep affected. St John's wort contains the toxin hypericin that causes photosensitisation (increased susceptibility to sunburn) in sheep, cattle, horses and goats. Stock will only eat St John's wort when pasture is scarce but it is quite poisonous, especially to animals not accustomed to it. Younger and fair-skinned animals are more susceptible and animals with pigmented skin are more resistant. The narrow leafed variety of St John's wort (leaves are <9mm wide) is three times as toxic as the broad leafed

variety. Hypericin levels vary with the season. Levels rise rapidly once the new season flowering shoots grow to 10 cm high and reach their maximum when the plant is in full flower, usually in mid-summer. The associated skin damage results from the action of the sun on the hypericin in the blood stream.

Early signs in affected stock include agitation, head-rubbing, knuckling and limb weakness, panting, confusion, depression, and shade seeking. Thickened, drooping ears, thickened eyelids and crusty muzzle are common signs of photosensitisation, and animals can have a fever. Depression, weight loss, reduced productivity and, in extreme cases, death can result. Treatment involves removing affected stock from direct sunlight immediately and holding them in full shade (e.g. confined in an enclosed shed). Animals will need to remain protected by shade for at least 4-7 days and provided with feed and water until fully recovered. Generally the effects of this poisoning are reversible.

For more information on control options see the NSW DPI Primefact 694 titled St John's Wort ([www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0007/193075/St-Johns-wort.pdf](http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0007/193075/St-Johns-wort.pdf)).

The NSW DPI Weedwise website (<http://weeds.dpi.nsw.gov.au/>) is a great resource for all things weed related in NSW. Simply type the name of the weed into the search bar to find further information. Better yet, use your smartphone to find the NSW WeedWise App for iOS or Android.

## Lead poisoning in cattle

### Kate Sawford, Palerang district vet

Lead is a common cause of poisoning in cattle. Old lead acid batteries on farms are most commonly implicated in lead poisoning cases. Other sources can include lead-based paint, linoleum, and sump oil. Silage can also be contaminated by lead shot, automotive grease and oil filters, caulking, and putty.

Of domestic stock, cattle are most at risk of lead poisoning because they are inquisitive and tend to lick newly identified objects in the paddock. When feed is scarce this risk is increased as hungry stock are more exploratory and more inclined to break out of paddocks.

Often the first sign of lead poisoning is dead stock, often found near a fence or obstacle. If found alive, affected stock will show nervous system signs, including dullness, unresponsiveness, blindness, aimless walking, 'star-gazing', circling, paralysis of the tongue, and muscle twitching.

A diagnosis of lead poisoning is made via a combination of history taking, post-mortem examination, and laboratory testing. Often there is a history of lead access. Occasionally lead particles are found in the reticulum of affected cattle. The presence of lead can be confirmed by collecting blood, kidney, and liver samples.

Animal tissues containing elevated lead levels are a risk to food safety and are not fit for consumption by humans or other domestic species, including dogs and poultry. If lead poisoning is diagnosed on a property, all potentially exposed cattle are blood tested. Any animals with high blood levels must not enter the food chain until their blood lead levels are within safe limits. Identifying the lead source and preventing further access is critical.

One important aspect in managing lead-affected properties is ensuring all animals have been individually identified – or, in other words, NLIS tag requirements have been met.

Treatment options are available but often they are unsuccessful. As with all toxicities, prevention is far better than cure. Ensure all batteries in use on farm cannot be accessed by stock. Recycle any spent batteries on farm promptly. If there are historical tip sites on your property ensure they are securely fenced off.

Remember that one of the reasons that Australian livestock producers have access to export markets is because of a high level of food safety assurance. To maintain this access it is critical that threats to food safety are investigated, including outbreaks of neurological disease or death in cattle to ensure that lead toxicity has been excluded. Therefore if you find dead stock, or cattle with neurological disease, it is vital you contact your district vet.

For more information on lead poisoning see the NSW DPI Primefact 413 titled Lead affected cattle ([https://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0014/102416/Lead-affected-cattle.pdf](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0014/102416/Lead-affected-cattle.pdf)).

## Vaccination – the devil is in the detail

### Bill Johnson, Goulburn district vet

District vets with Local Land Services investigate causes of reduced productivity or death of livestock. As part of any investigation, we ask about the life history of the animals. On most occasions, owners are quick to assure us that “they’ve been vaccinated”. But what does that mean exactly? Experience tells us that this phrase is used very loosely, and is often poorly understood.

Vaccines are designed to protect animals against infectious diseases. The most widely used livestock vaccines in this region are against a range of clostridial diseases, the so-called “five-in-one” diseases. When administered properly, they protect the majority of vaccinated animals from tetanus, blackleg, black disease, malignant oedema, and pulpy kidney. Yet despite vaccination, pulpy kidney remains one of the most common causes of sudden death in young animals. So what goes wrong?

By far the most common error is not following directions on the label. There are several brand names of “five-in-one” vaccines, and several more brands that include “five-in-one” vaccines with something else. There is also great competition between manufacturers, particularly on price and inclusions. Vaccines covering the same five diseases may require a one millilitre (1ml) or a 2ml dose for sheep and goats, or a 2ml, 4ml, or 5ml dose for cattle.

These vaccines may include components that protect against other diseases such as cheesy gland or leptospirosis; and they may offer a range of possibly useful additives including selenium, vitamin B12, or worm treatment. The dose for the latter vaccines is different again, based on body weight. The components of the vaccine settle on storage, and need to be shaken prior to and occasionally during use.

All are killed vaccines (i.e. they carry no risk of transferring those diseases); all require TWO initial doses to be given 4-6 weeks apart; and ALL require boosters to be given to maintain protection, although again the recommended interval between booster doses varies with the brand.

Pulpy kidney (or enterotoxaemia) is regarded as a “disease of plenty”, often killing rapidly growing animals with access to good feed, such as a bountiful milk supply, grain supplement, or lush pasture. Many vaccine brands only reliably protect fully vaccinated cattle against pulpy kidney for three months, requiring more frequent boosters to be given especially when feed conditions improve. One brand provides a full twelve months protection.

Pregnant adults are often given a booster vaccination close to birth, but this only protects newborn offspring for six to eight weeks, and does not count as the first dose for those youngsters. One of the most common “vaccination failures” occurs when lambs or calves are given a dose of vaccine at marking time, then no follow-up dose 4-6 weeks later. The first dose offers very limited short-term protection at best, and young stock that have only had a single dose aren’t much better off than unvaccinated stock. We frequently see prime

lambs die from pulpy kidney a week or two short of going to market under this regime, but only after already eating their way through a fair bit of grain or fodder crop.

Insist on a National Animal Health Declaration from the vendor when buying stock (see <http://www.farmbiosecurity.com.au/toolkit/declarations-and-statements/>). This form contains a range of useful health information for the consignment, including vaccinations. Again, we frequently see deaths of purchased stock when the new owner assumes they have been vaccinated.

Vaccines are greatly affected by storage before use. All clostridial vaccines should be kept at 2-8°C, and carry a warning to “refrigerate, do not freeze. Protect from light”. Formulation of multi-component vaccines is a complex process, and the end product is easily compromised during storage.

On-farm vaccine storage is pretty poor based on a recent survey of farm fridges. The farm fridge has often been banished from the kitchen to the shed because the milk was always going off. Yet we expect it to take care of hundreds of dollars worth of vaccines purchased to protect thousands of dollars worth of animals.

Automatic data loggers placed in each of twelve farm fridges monitored temperatures for a month. Not one fridge maintained cabinet temperature at 2°C-8°C. Some periodically froze the contents, while the temperature of the worst-performing fridge that was in full sun for part of the day topped 34°C, hotter than outside. It is also common to see a spare box of vaccine on the front seat or dashboard of the ute, in the blazing sun, with everyone busy marking lambs or calves. A thermometer to check maximum and minimum temperatures in the fridge costs as little as \$15, and an insulated bag with an ice brick or two protects vaccine in transit.

A frequently asked question is “Can I still use vaccine that is a little out of date?” The answer is “No”, and many vaccine labels now strongly reinforce this advice. Always check that the vaccine can be used concurrently with any other treatments, and use a different site (e.g. the other side of the neck) if other injections are given at the same time as vaccination.

Regardless of the dose, all clostridial vaccines are given under the skin. Operator skill and technique, animal age and breed, body condition, wool or hair length, vaccinator type and selected needle length all affect the outcome. Good restraint of the animal is essential, and sharp needles reduce any reaction.

Vaccination is often regarded as an animal disease insurance policy. Take the time to read the fine print.

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