

Human health reminder for farmers



Human health reminder for farmers: zoonotic diseases

Hendra cases in horses on the NSW north coast in recent years have raised awareness about diseases that people can catch from animals (called 'zoonotic diseases'). Livestock owners should be reminded that there are other serious diseases that can be caught from livestock which may not have a high media profile like Hendra virus, but are more common. Leptospirosis and Q fever are two such diseases.

Leptospirosis can cause significant disease problems in cattle herds, including abortion in cows and 'red-water' in calves. It can also cause serious illness in people who come into contact with urine or afterbirth from an infected cow, such as dairy farmers and vets. Fortunately, widespread vaccination of cattle against leptospirosis using 7-in-1 vaccine has made human infection less common, and we strongly

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recommend that farmers continue this practice.

Q fever is a bacterial disease which can cause serious human illness. It most commonly affects those working with livestock, including farmers, shearers, vets and abattoir workers. People can become infected via infected dust or direct contact with infected material. Unlike leptospirosis, Q fever generally doesn't cause signs of disease in carrier animals, and no vaccination is available for use on livestock. Instead, a human vaccine exists for protection of people at risk of infection.

Pig hunters and their dogs can be infected by a disease called **Brucellosis** caused by the bacterium *Brucella suis*. See the article in this newsletter for greater detail.

Leptospirosis, Q fever and **Brucellosis** can all initially cause flu-like symptoms in people, which can progress to more serious and long-lasting illness.

Those seeking more information about these diseases (including Q fever vaccination) should contact their local public health unit on 1300 066 055 or visit the New South Wales Health website: www.health.nsw.gov.au

More information on zoonotic diseases can be found on the DPI website:
www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses

Feral pigs cull an ideal opportunity for disease surveillance

A Hunter LLS feral pig control program is set to give added value to the region as the culled pigs are being studied to determine what diseases they harbour. Feral Pigs damage the environment and agricultural production but they can also carry a range of infectious diseases that can affect livestock and human health.

The Hunter LLS feral pig program uses a combination of aerial control and ground traps to cull the pigs. This creates an ideal opportunity to conduct a disease surveillance survey with the combined efforts of the LLS Biosecurity team.

After the pigs are destroyed by professional shooters, the carcasses are examined and tissues sampled for three key diseases: *Brucella suis*, Leptospirosis and Q fever. These three diseases can be carried by pigs and cause serious disease in other animals and humans.

Brucella suis is a serious infectious disease affecting pigs, dogs and people, with feral pigs the usual source of infection. The disease has mainly been seen in Queensland in areas with high numbers of feral pigs.

However, a recent spate of swine brucellosis cases has occurred in north western NSW, in areas not far from the Upper Hunter, including Tamworth, Gunnedah, Bingara and Moree. This study is important in determining the disease risk in the Hunter region.

Dogs at greatest risk of infection with *Brucella suis* are pig hunting dogs, family dogs in contact with pig hunting dogs, and dogs that have been fed raw feral pig meat. The main symptoms in dogs are fever, vomiting, back pain, blood in urine, swollen testes and reproductive problems.

Pig hunters are also at risk from brucellosis, which can cause serious disease. People with *Brucella suis* infections often present with flu-like symptoms (headache, fever, sweats, back pain), although the signs may not occur for many weeks after exposure. The pigs are also tested for Leptospirosis and Q fever, two additional infectious diseases which can also cause acute and chronic disease in humans. Information regarding Q fever prevalence in feral pigs is limited in Australia as very few studies have been conducted, so the results will be of interest. Sydney University is assisting with this part of the analysis.

Disease surveillance activities such as this study are a key part of the LLS frontline role in managing biosecurity risk in NSW. Knowing which livestock diseases are circulating or emerging is an important part of control. This information also helps farmers to watch-out for and implement prevention strategies whether it be vaccination for themselves and their family, their animals and using personal protective equipment.

This disease surveillance project is being supported by Sydney University, Hunter New England Health and Zoetis. If you would like assistance with controlling feral pigs on your property please contact your Biosecurity Ranger at LLS.

Do you have domestic pigs on your property?

Please be reminded that feeding swill to pigs is illegal in Australia as it is the most likely way that a Foot and Mouth Disease (FMD) outbreak will start in this country. Swill is the traditional name given to food wastes containing meat fed to pigs.

Many overseas outbreaks of FMD started because a farmer gave food waste containing meat to pigs.

Household meat scraps, restaurant waste, bakery waste containing meat (whether cooked or not) or meat and bird carcasses should NEVER be fed to pigs. FMD virus can survive in meat, bone offal and hide for long periods of time. Pigs act as FMD virus “factories”, multiplying the virus by a factor of thousands. Infected pigs act as an amplifying source of infection for nearby cattle and sheep.

We are fortunate that Australia is free from FMD. An outbreak of FMD in Australia would close most of our meat, dairy and wool export markets until the outbreak was eradicated. Modelling has predicted that a small 3 month outbreak would cost Australia in the order of \$ 7 billion dollars.



Photo: blisters on snout of pig

While a 12 month large scale outbreak would cost around \$16 billion dollars. This is not to mention the heartbreak involved in trying to control the spread of this disease. Feeding inappropriate food waste to pigs is not only illegal, it is also very thoughtless as this action could be responsible for starting an outbreak of FMD in Australia.



Photo: blisters in the mouth and tongue of a cow causing drooling

Hunter LLS biosecurity staff has an ongoing role in conducting on-farm FMD inspections and risk assessments where pigs are kept. Educating and assisting farmers to avoid swill feeding is the prime focus of these visits.

Early diagnosis is however also crucial to controlling FMD and you can help. If you see any blisters on the mouth, nose, feet and teats of pigs, cattle or sheep contact a LLS District Veterinarian or Ranger or call the Emergency Animal Disease Hotline 1800 675 888.

Also, If you are selling pigs please remember that pigs over 25kg must be branded and all pigs must be accompanied by a vendor declaration form known as “Pigpass”. Your local LLS office can assist producers without a swine brand by applying a crown brand to pigs. Useful links -

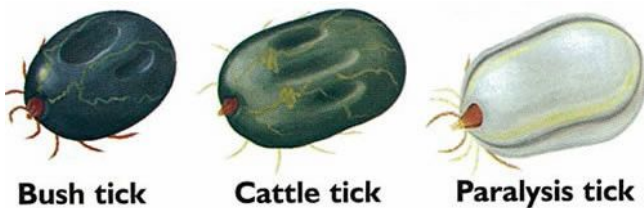
http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/319474/Stop-do-not-feed-swill-to-your-pigs.pdf

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/384624/Pigs-branding-and-PigPass-NVD.pdf

Cattle Tick warning for farmers

In early February 2015, a number of cattle on a Kempsey beef property became sick and died of 'tick fever'. Inspection of cattle on the property confirmed the presence of Queensland cattle tick.

The Queensland cattle tick does not normally occur in NSW. Cattle ticks are the most serious external parasite of cattle in Australia. They can attach to cattle, horses and other livestock and can transmit tick fever, a potentially fatal disease of cattle.



The tick fever agent is carried in the blood and transmitted by cattle ticks when they feed.

Cattle tick infestation is notifiable in NSW, which means stockowners are required by law to inform the authorities of any findings on their stock.

Livestock owners are reminded to tighten their farm biosecurity and be on the look-out for cattle ticks as we come into the peak period for cattle ticks in NSW.

Important steps for owners of cattle, horses and other livestock include:

- maintain your fencing in good order to prevent livestock from straying
- ensure any livestock you bring onto your property are not carrying cattle ticks
- if you are bringing livestock in from Queensland, ensure they stop at the border for inspection and treatment.

There are movement requirements for horses, cattle or other livestock entering NSW from QLD. Details on those requirements can be found on the NSW DPI website or by contacting any NSW DPI or Local Land Services office.

Penalties of up to \$10,000 apply for persons who fail to observe the movement requirements.

www.lls.nsw.gov.au/hunter

Drenching cattle for worms and fluke – recommendations for Autumn

A number of basic principles apply to worm control in cattle:

- Cattle older than 2 years have usually developed resistance to worms, and seldom require drenching¹
- Young cattle are particularly susceptible to worms and are the main culprits for contaminating the pastures.



Photo: an example of a wormy weaner

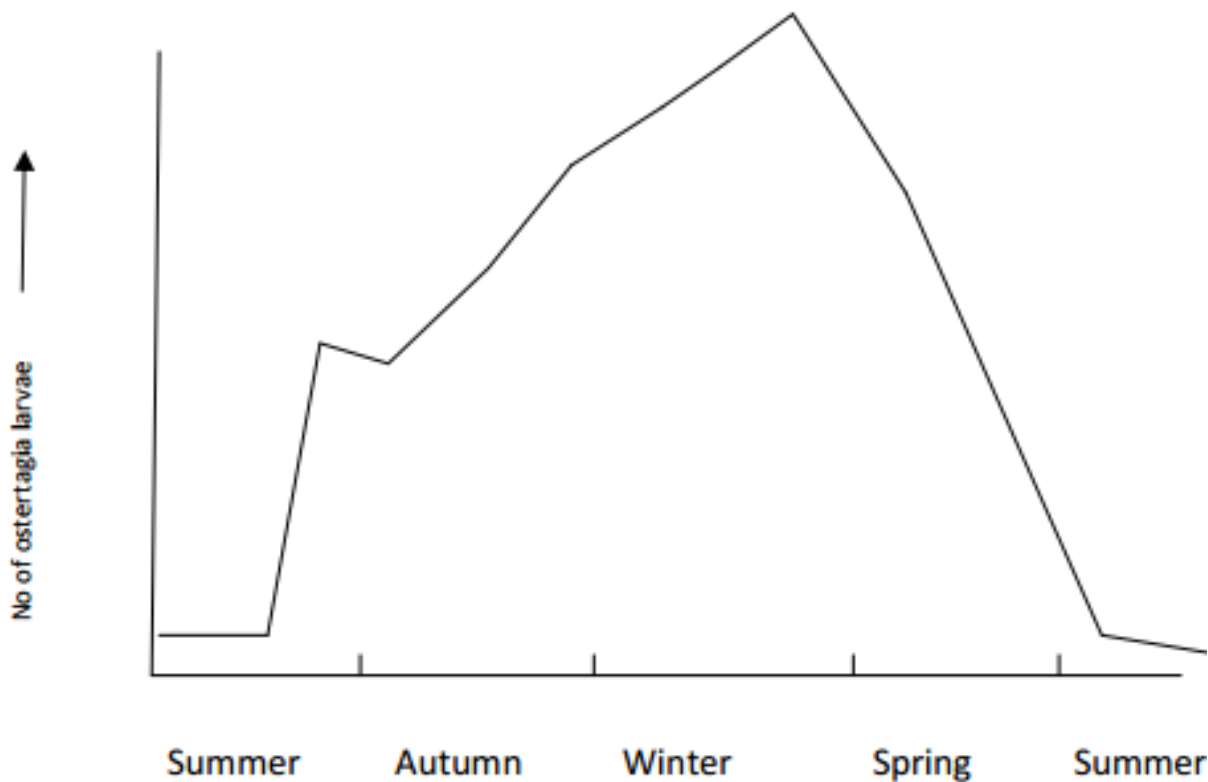
- Many of the worm eggs passed in the manure hatch into infective larvae on the ground and crawl up onto grass and are then eaten.
- The greater the stocking rates, the greater the problems.
- The number and availability of infective larvae on the pasture determine the re-infection rate (see graph below).
- Control measures aim to reduce the seasonal build up of infective larvae on pastures (see graph below).
- Strategic drenching of young cattle in Autumn reduces the build-up of infective larvae in Autumn and Winter.
- Use 'worm tests' (kits pictured below) to:
 - ✓ Identify the species of worms present in your livestock

- ✓ Assess if the worm burden justifies drenching
- ✓ Check if the drench you have just used is still working effectively ('drench check').
- Incorporate non-chemical strategies such as pasture/grazing management into your worm control program.
- Rotation of drenches helps to slow the development of resistance to worms.
- Consider the adverse effect that some drenches can have on dung beetles when selecting a drench.

- Don't drench if you don't need to, as repeated exposure to drenches increases the speed at which worms develop resistance to drenches. Unnecessary drenching is also very expensive.
- Don't drench for liver fluke unless you have confirmed that liver fluke actually exists in your cattle.

¹ Exceptions can include bulls, first calf heifers, and cattle stressed by over-stocking and malnutrition.

GRAPH A:



Dung pats can provide shelter for worm larvae for several months, even in very dry conditions. Therefore, paddocks continually grazed by young cattle in autumn and winter can become very wormy.

It is important to prepare a number of 'worm-safe' pastures, particularly in higher-rainfall areas of NSW. This is so that young, susceptible cattle

can be moved every few months to paddocks with fewer worm larvae.

Aim to graze weaners from early August through to summer on the least contaminated pastures available.

Begin preparing 'low-worm' pastures for spring four months ahead (i.e. in April).

The table below shows different low-worm pastures.

Best	New sown pasture or crop.
	Pasture grazed by sheep for previous 4 months.
	Pasture <i>not</i> grazed by any cattle for previous 4 months.
Good	Pasture grazed by adult dry cattle or cattle older than 18 months of age.
High-risk	Pasture grazed by young cattle such as weaners.

Table 2 shows, for instance, that a worm egg count of 300 eggs per gram may not be terribly alarming if it is nearly all cooperia, but could be causing real problems if the eggs are mainly trichostrongylus.

In the Taree and Gloucester districts, Haemonchus (barbers pole worm) now tends to be the most important species, while ostertagia becomes more important as you move further west.

Using WormTest kits

WormTest kits are a useful tool in diagnosing what species of worm exist in your cattle, whether drenching is justified, and whether your drench is still working.

WormTest kits typically involve collecting fresh manure samples from 10 cattle and posting them to a laboratory on the same day for analysis.

If you haven't previously worm-tested your cattle, choose the more expensive option on the request form which includes hatching the worm eggs to identify exactly which species of worms are present (called 'larval differentiation'). If you don't know which species of worm are present in your cattle, it is difficult to interpret the significance of the egg count results.



WormTest kits are available from all Hunter LLS offices, where the District Veterinarians will be happy to offer advice about their use.

Table 2. Guide to worm egg counts in cattle
Cattle 6–18 months of age – burdens that may cause ill-thrift*

Common name of worm	Scientific name	eggs per gram
Barber's pole worm	<i>Haemonchus</i>	200
Black scour worm	<i>Trichostrongylus</i>	50
Brown stomach worm	<i>Ostertagia</i>	150
Nodule worm	<i>Oesophagostomum</i>	100
Intestinal worm	<i>Cooperia</i>	500
Liver fluke	<i>Fasciola</i>	5
Stomach fluke	<i>Paramphistomum</i>	†

† Clinical disease is usually caused by large numbers of migrating immature stomach fluke, and egg counts may be low or zero. Source: Guidelines from Regional Veterinary Laboratory, Wollongbar.

Choice and rotation of drenches

There are three basic categories of drenches for cattle worms: white drenches (benzimidazoles), clear drenches (levamisole), and MLs (macrocyclic lactones or 'mectins'). 'Rotation' of drenches means swapping from one category to another in order not to give the worms so much exposure to any one category that they develop a resistance to that category.

Since the ML drenches came onto the market, many in pour-on form, they have become by far the most popular drench type. For that reason, resistance against ML drenches is emerging, in the same way that resistance to white drenches and clear drenches was a problem before ML drenches came onto the market.

Some people are aware of the drench rotation principle, but only swap from one type of ML drench (e.g. ivermectin) to another ML drench (e.g. abamectin). Unfortunately, once resistance exists against one drench in a category, resistance generally exists to some extent to all drenches in that category.

Proper rotation of drenches requires swapping from one category (e.g. the MLs) to another category (e.g. the white drenches), not merely swapping between different drenches in the same category.

If you suspect drench resistance against the drench you are using, check the effectiveness of the drench by performing a WormTest 14 days after drenching to check that the egg count is zero. If it is not, a larval differentiation (egg hatching for worm identification) will tell you which species of worms are resistant.

If you want to rotate away from an ML drench, the Autumn drench is a good opportunity to do so because:

- External parasite control against ticks and biting flies, which is a distinct advantage that ML drenches have over white and clear drenches, is not a major consideration heading into winter.

- The Autumn drench is an important drench for Autumn-weaned calves. They have just lost the support of their mothers, and can't afford to be dragged back by worms and liver fluke during the poorer nutritional environment of winter. As weaners, they are at a size where oral drenching can be accomplished effectively, so white drenches and clear drenches given orally become a realistic choice.
- **Note:** If you do have a liver fluke problem on your property, a fluke (+worm) drench in Autumn, followed by another fluke (+ worm) drench in August/September, is the basis of strategic fluke control.

Excellent information sheets about worm and liver fluke control in cattle are available on the DPI website:

www.dpi.nsw.gov.au/agriculture/livestock/health/images/information-by-species/cattle/cattle-worm-control

The handouts titled 'Cattle worm control – the basics' and 'WormTest for livestock and guide to egg counts' are particularly useful. Information in this article has been taken from:

Smeal, M.G (1983) *The epidemiology and control of gastrointestinal nematodes of cattle in N.S.W.*, Dept. of Agriculture NSW.

Love S and Hutchinson G (2007) *Cattle worm control – the basics*. Primefact 419, NSW DPI.

Love S and Hutchinson G (2007) *WormTest for livestock and guide to egg counts*. Primefact 480, NSW DPI.

Three Day Sickness

Bovine Ephemeral Fever is a viral disease of cattle that is commonly known as "Three Day Sickness". Cases usually start to occur in the region between January to April with the greatest number of cases in March. The Three Day Sickness season usually starts at the beginning of the wet season in Northern Australia and spreads south and east along the East Coast of

Australia with sometimes reaching northern Victoria.

Three Day Sickness is transmitted between cattle by flying biting insects. The distributions of these biting insects will depend on climatic conditions which will in turn influence the spread of disease. Here in the Hunter we have had ideal conditions with rain and warm weather, perfect conditions for biting insects.

Cattle with Three Day Sickness will develop a fever which is normally > 40C, they shiver, get muscular stiffness and become lame and stiff in their joints. Affected animals will stop eating and drinking and become depressed. They usually drool, have watery eyes and a nasal discharge. These affected animals often go down. Heavy animals appear to be affected the worst (bulls and pregnant cows).

After approximately three days the animals will usually stand up again and start eating but the lameness can linger for a few weeks. Deaths from Ephemeral Fever are rare but are usually because they have been down for a long period or misadventure while they are unwell with the disease.

It is important to provide shelter, water and food for those animals that are down. Animals that are down can also lose the blood circulation in their legs and they become numb making it very difficult to get up, so with heavy cattle like bulls and heavily pregnant cows it is a good idea to roll the animals and provide some physiotherapy to the legs.

Use of an anti-inflammatory is also recommended to aid in reduction of temperature and inflammation. As some cattle can take weeks to get up, farmers persisting with such animals need to be conscious of their comfort and welfare during this prolonged recovery period.

Cattle will develop immunity to the virus after they have been exposed, but this immunity will vary for each animal. Some cattle after exposure can be immune for life where others will be immune for a few years only. There are vaccines available to aid in protection against Bovine Ephemeral Fever. Some producers chose to only vaccinate their more valuable stock like bulls, dairy cows and stud cows. Some vaccinate their entire herd, and others take the risk as mortality rate from this disease is very low.

It is also a good idea to look at the timing that Bovine Ephemeral Fever is likely to pop up in your area and the stage of production; have you got steers that are close to finishing weight which will lose condition dramatically if they become infected? Have you got heavily pregnant cows that if infected could abort their calves? Have you got bulls that are serving cows and become infected could become temporarily infertile? In all these scenarios it would be worthwhile vaccinating.

Bovine Ephemeral Fever can be diagnosed with a blood test from an animal in the early fever stage of the disease and on clinical signs. If you have any questions with regards to the disease please contact your local District Veterinarian.

District Veterinarians:

Digby Rayward - Paterson

Phone: 4939 8966 or 0427 493 617

Kylie Greentree - Maitland

Phone: 4932 8866 or 0428 498 687

Lyndell Stone - Scone

Phone: 6545 1311 or 0427 322 311

Jim Kerr - Wingham

Phone: 6553 4233 or 0429 532 855

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