

Animal health advice for producers in the

Hunter

Spring 2021



ANIMAL CARE AND COVID-19

The effects and restrictions associated with the management of the COVID-19 pandemic in NSW are impacting all of us in many ways. Whilst it has altered the way we all do business and how we interact with each other it is vital that animals and livestock industries are cared for during these times.

Disease Investigations continue

Veterinary services are regarded as critical services and thus our District Veterinarians remain on the ground continuing to support livestock industries in NSW by investigating sudden death in stock, excluding notifiable and Emergency Animal Disease and assisting with herd level disease investigations.

The safety of our customers and employees is our top priority and we are committed to reducing the spread of COVID-19. Our DVs are either fully vaccinated or shortly will be.

We abide by all health orders that may be in place while undertaking essential animal welfare or disease investigations and ask that you do as well. We will also ask you a series of questions to ensure we can safely attend your property. If your primary industry business has a QR code we will also register our attendance.



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Animal Health and Welfare responsibilities

Animal owners and managers are responsible for ensuring the welfare of their animals is maintained under Covid-19 restrictions and should have a plan in place for this to occur including where the owner is subject to isolation or hospitalisation.

You are permitted to travel to attend to the welfare of your animals, following strict hygiene and social distancing requirements, as animal owners have a legal responsibility under the *Prevention of Cruelty to Animals Act* to ensure the welfare of their livestock and companion animals.



Local Land Services

www.lls.nsw.gov.au

We help secure the future of agriculture and the environment for NSW communities

If you own or manage livestock on a rural property and need to undertake practices to ensure their welfare, you can do so following the Public Health Order requirements. Currently, this includes wearing a mask, following social distancing requirements and whilst travelling, only stopping for essential purposes. Do not travel if you have any symptoms and follow any testing requirements. You should travel with evidence of the property you are travelling to. This may include a Local Government rates notice, Local Land Services rate notice or some form of primary producer declaration or business document.

If you are considering travelling from a high-risk area please consider making arrangements with a local stock manager for the welfare of your stock. Your cooperation to keep regional communities safe, is required.

If you are a business, you should consider having an [Agriculture COVID Safe Business Plan](#) and a QR Code

Further information on COVID restrictions and primary industries is available at www.dpi.nsw.gov.au/home/covid-19

Service NSW QR code

Business and organisations registered as COVID safe can access their NSW Government QR code and other customised resources online at [NSW Government QR code and business resources](#).

Under the [Public Health \(COVID-19 Gathering Restrictions\) Order \(No 2\) Amendment Order \(No 2\) 2021](#), farms are not required to have mandatory QR codes. Primary industry businesses are strongly encouraged to register as COVID Safe and use QR Codes where possible.

For the purposes of on-farm activities such as bull/ram sales, shearing, etc where you have larger on-farm visitors than usual, primary producers need to

- Keep a register of visitors. The organisers can choose how they do this, i.e., QR code, sheet of paper, etc.
- This list needs to be made available to NSW Health, if requested, within 4 hours. If using a QR code this information is already provided.
- Hold this information for 4 weeks.
- The business is encouraged to complete an Agriculture COVID Safety Plan to ensure they meet all COVID safety requirements.

INSECT VIRUS MONITORING RESULTS FOR 2020/21

Insect borne cattle disease monitoring for 2020-21 has drawn to a close and results generally show low levels of disease distribution in NSW over the past 12 months for several of the main insect borne diseases of cattle. These results may help producers assess the need for preventative Three Day sickness vaccination or to assist trade decisions.

Bovine Ephemeral Fever, Bluetongue virus and Akabane Virus distribution is monitored through an NSW DPI/LLS partnership under the National Arbovirus Monitoring Program (NAMP).

NAMP is an important insect borne disease surveillance program to support export trade as well as provide endemic disease surveillance as Arbovirus diseases can have trade and production impacts. Local Land Services assists by taking monthly blood samples from 39 sentinel herds in NSW including five in Hunter Local Land Services at Taree, Tocal, Singleton, Scone and Merriwa. Hunter Local Land Services supplements the former program with the end of season BEF testing to assist local producers.

During the 2020/21 season, **Bluetongue Virus (BTV)** transmission was only detected at three sentinel herd sites; Lismore, Casino and Singleton. Some countries will only accept cattle from BTV free zones. The BTV map is updated based on these results and a region must have no occurrence of BTV, detected by NAMP testing, for at least two years to be eligible to be in the BTV transmission-free zone.

Producers can confirm the current status of their property online, by viewing up-to-date BTV zone maps. (namp.animalhealthaustralia.com.au).

Akabane virus distribution for 20/21 was also low. Thus, heifer breeders born after the last period of spread might not have immunity to Akabane virus. Infection with Akabane virus does not affect the health of adult cattle. However, if cattle are first infected while pregnant, birth defects such as bent limbs can result. There is no preventative vaccine against Akabane disease, thus this is just for your information in case you have young heifers pregnant for the first time. Best to monitor them closely in case of calving difficulties due to deformed calves. Investigating abortions and deformed calves is something your private vet or District Vets can assist with.

No cases of Bovine Ephemeral Fever have been confirmed in the 20/21 season in NSW at the State Diagnostic Veterinary Laboratory apart from one beast at Walgett.

The lack of BEF distribution means that stock born after April 2020 have most likely not been exposed to the virus and thus will not have protective antibodies generated from natural exposure. Please consider if your production system (especially any higher value or pregnant cattle) warrants BEF vaccination.

When is the best time to vaccinate for BEF?

Late winter /spring, is the ideal time to consider your BEF vaccination plans. Initial vaccination requires two injections from two weeks to six months apart. It is recommended to provide the initial primer dose in late winter (August - September) and the second vaccination in early summer (Nov-Dec), so that stock are protected when the virus arrives in our region. This is often in late summer, but sometimes can catch us by surprise with an early season start.

The benefit of this approach is that if the BEF season looks like it will arrive early then the second vaccine or annual booster can be quickly administered and within 7-10 days cattle should have solid immunity. Annual boosters should be given 8-10 weeks before virus transmission. Bulls should be vaccinated as BEF infection can cause temporary sterility. Further BEF vaccination information is available here https://www.ils.nsw.gov.au/__data/assets/pdf_file/0005/1343795/factsheet-BEF-v2.pdf



Hunter Local Land Services District Vets undertake monthly blood testing across five Sentinel herds to track distribution of insect borne cattle viruses that have cattle health and trade implications.

MANAGING HEIFERS PRE-JOINING

Did you know you can increase herd production by managing your heifers with clear health and growth targets in mind? The period from heifer pre-joining to conceiving their second calf is critical and requires good management to set breeders up for lifetime reproductive performance. Meeting targets for heifer size, health and nutrition goes a long way to reducing reproductive wastage.

Heifers can have a higher foetal loss due to disease (maiden heifers) and lower conception rate (particularly second calf heifers) unless well managed. The hardest time in a breeders' life is from her first joining as a heifer through to conceiving her second calf. She is still growing herself, with the added pressures of growing a foetus, then lactating and having to go in calf again.

Some key factors to help with heifer management include;

Heifer and Bull Selection

- Understand your breeding objectives and carefully select a bull for genetic improvement. Heifers are still growing so selecting a bull with low-birth-weight and ease of calving 'Estimated Breeding Value' (EBV), is important to avoid calving difficulties.
- Take care buying pregnancy tested in calf heifers. It is best to buy from a reputable breeder that has well grown heifers and takes care with the choice of bull joined to heifers. Otherwise, you may run into a lot of issues with calving difficulty. Some producers have experienced issues with buying in drought reared weaner heifers that have failed to reach critical mating weight before joining.
- Heifers to be joined should be structurally sound (feet & leg structure, jaw, pelvic shape,) and have good temperaments. NSW DPI have a great fact sheet "Selecting and Managing beef heifers" ([nsw.gov.au](https://www.nsw.gov.au)).

Joining dates and heifer mating weight

- The minimum target weight (CMW: critical mating weight) for joining is usually 60-65% of an adult cow (of the same breed) in body condition score 3-3.5. Ideally, most will be heavier than the target joining weight. On the coast this is commonly around 18 months of age.
- Heifers will start cycling when they are around 52% of Mature body weight. This is too young and small for successfully calving and it sets the heifers up for calving difficulty. Heifers must be kept away from the bull until they have reached the minimum target weight.
- Choose a joining date that means your heifers calve at a time most suited to your operation. Key considerations include high feed availability (quality and quantity) or having

a feed plan to meet their energy and protein needs, lower tick pressure for young calves, your market and your ability to provide twice daily monitoring during calving etc.

Heifers need a higher quality feed than all other classes of females due to the added pressure that they are still growing themselves. If feed quality and quantity is lacking then supplementary feeding is required to meet the shortfall. Using the NSW DPI supplementary Feed calculator can help you devise a costed feeding plan [Drought and Supplementary Feed Calculator \(nsw.gov.au\)](#)

- To ensure your heifers are on track to meet the CMW for joining, you will need to identify weaning weight (or current weight), when your joining period is planned for, and their target minimum weight (60-65 % of mature cow). Calculate required daily weight gain, and develop a matching feed plan and monitor weights from weaning to joining to ensure daily gains are met. Increase nutrition if needed through supplementary feeding to ensure they meet the target.
- Body Condition Score of the heifers should be 3-3.5 (ribs not visible & hips faintly visible) at joining and calving. See live cattle assessments at [www.dpi.nsw.gov.au](#)

Develop an effective health and vaccination program for your herd.

- Ensure that the growth rate of heifers is not hindered by parasite burdens, mineral deficiencies, or other diseases. First and second calf Heifers often require additional attention with regards to de-worming and nutrition.
- Monitor worm egg counts and drench if required. Internal parasites in cattle will lead to a reduced weight gain, which can go unnoticed. Other clinical signs include weight loss, lethargy, diarrhoea, anaemia and even death.
- All breeding females should be vaccinated with 7-in-1 vaccination which covers the five Clostridial diseases and two types of Leptospirosis.
- Ensure your bulls are Vibriosis vaccinated. Vibriosis is a venereal disease. Heifers will not have had prior exposure and will suffer the greatest impacts from Vibriosis infection. It is not uncommon for 30% – 40% of heifers to not achieve pregnancy if served by a Vibrio Infected bull.
- Consider Three Day Sickness (Bovine Ephemeral Fever) vaccination especially if the heifers have not been previously exposed to the BEF virus. Non-immune breeders infected while pregnant can suffer abortions due to viral inflammation and high temperature.
- Pestivirus can cause infertility, early embryonic death, increase return to service and the production of ill thrifty persistently infected calves within your herd. All producers

should know the pestivirus status of their herd so it can be managed. Some producers routinely protect their heifers through vaccination with Pestiguard, others use strategic natural exposure prior to joining with a known persistently infected animal, whilst others check for previous exposure and immunity in their heifers prior to joining and act according to the results. Heifers are often the most vulnerable to disease due to lack of prior exposure.

- Certain areas have trace mineral deficiencies that can have a marked impact on growth and reproductive performance. Copper and selenium deficiency are common around the Hunter Region but before embarking on supplementation, it is advisable to do some trace mineral testing in your stock.

Pregnancy test heifers

- Pregnancy testing at five to eight weeks post removal of the bull can assist with culling non-pregnant females and detect any fertility issues that may be lurking in your herd. It also helps to know when the heifers will be calving. It is money well spent.

Calving Heifers -Special care continues

- First calf heifers should be checked at least twice daily for impending calving as heifers can experience more calving issues. Monitor closely once calving starts and assist only when calving is not progressing. Speak to your private vet so you know when and how to intervene and when to call for veterinary assistance. A calf is generally born within 60-90 minutes after the appearance of the water bag.
- In the month prior to calving the heifer's immunity to internal parasites will wane and a drench is required. After calving, aim to move heifers into a clean paddock that has been rested or has few worm larvae in the paddock to decrease worm larvae exposure to heifers and calves. Calving into a fresh paddock ie one well rested and with a minimum of faecal contamination can help avoid calf scour issues as well.
- First calf-heifers require good nutrition to maintain growth, support lactation, maintain an ideal body condition, prevent metabolic disorders and assist with return to oestrus. Without attention to this detail many first calf heifers fail to achieve a second calf and end up leaving the herd.

For info consider signing up to HLLS Beefing up Your Heifer Performance at <https://hunterlls.wufoo.com/forms/beefing-up/>

The MLA Replacement Heifer Management video is also a great resource <https://www.youtube.com/watch?v=Fr9VqljyRpM>

PIG BIOSECURITY MANAGEMENT PLAN

Biosecurity plans help your pigs to remain healthy by minimising the risk of exposing pigs to disease. Understanding the importance of good biosecurity practices and implementing an effective biosecurity plan is the key to safely and successfully rearing and keeping pigs.

A Pig Biosecurity Management Plan has recently been produced as a NSW Government initiative and can be found on the Farm Biosecurity Website: farmbiosecurity.com.au/pig-biosecurity-management-resources. Your local District Vet will also have a copy of the Biosecurity Management Plan for you when they visit to undertake swill feeding inspections. Biosecurity Management Plans are now compulsory for all producers that are APIQ accredited.

What is biosecurity?

Biosecurity refers to steps used to minimise the introduction or spread of disease (such as parasites, viruses and bacteria) to animals or areas).

A good biosecurity protocol keeps your animals safe and keeps Australian livestock industries functioning. Pigs are super spreaders of foot and mouth disease (FMD), meaning they can easily spread the disease to other species of livestock, including cattle, sheep and goats.

Pigs can catch FMD from being fed infected meat products. feeding meat products to pigs (called 'swill feeding') consequently threatens all cattle, sheep and pig populations and industries in Australia and is highly illegal. African Swine Fever, which has killed a significant proportion of the world's pig population outside Australia in recent years, can also be spread by swill feeding.

It is essential that your pig Biosecurity Management Plan (BMP) recognises and manages this risk and responsibility.

Some diseases of pigs are zoonotic as well, meaning they can affect humans, therefore keeping pigs healthy keeps humans healthy.

Biosecurity Management Plan

A good biosecurity management plan requires a multifaceted approach to management practices.

1. **Pig health**
2. **Pig feed:** Ensure everyone who feeds pigs understand what can and can't be fed to pigs. They must know what swill feeding is, what risk it poses, and that it is illegal.
3. **Controlled entry**
4. **Transport**
5. **Hygiene**
6. **Emergency disease management:** producers should be able to recognise clinical signs of disease in pigs and be able to take measures to stop spread of disease.
7. **Records:** keep a farm plan/map, keep a record of all visitors to production site, record incoming feed, record all vaccinations and treatments, keep pig movement records and record all deaths/illnesses/injuries and their suspected causes.

For further information on keeping pigs and for further details on pig biosecurity please subscribe to Hunter Local Land Services Monthly Pig newsletter, Email jacky.oneil@lls.nsw.gov.au

Protect your pigs

Know your risks! Pests and disease can be introduced to your pigs by many pathways:

My information:

My Property Identification Code (PIC):

Ensure your PIC is registered and details are current

My PigPass ID:

My vet:

My LLS district vet:

EMERGENCY ANIMAL DISEASE WATCH HOTLINE

1800 675 888

If you notice unusual disease symptoms, abnormal behaviour or unexpected deaths in your pigs, immediately call your vet, LLS district vet, or the **Emergency Animal Disease Watch Hotline on 1800 675 888.**

LOOK

CHECK

ASK A VET

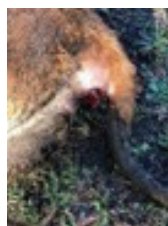


DISEASE WATCH – WINTER 2021 *(A selection of interesting cases)*

Disease Watch is a selection of interesting and notable cases seen by District and Private Veterinarians in the Hunter Local Land Services region during the past three months. We hope you find these select cases of interest and helpful in identifying potential health issues or causative factors in your herds. District Veterinarians investigate unusual illness, deaths and herd level issues with the view to primarily excluding Emergency Animal and Notifiable diseases or herd level issues that may be of significance to the region.

Diarrhoea and death in adult cattle due to Yersiniosis

(10+ farms diagnosed. Multiple cattle on each farm) Dairy and beef properties continue to have cattle affected by Flood Mud Scours (Yersiniosis) on the Mid Coast and lower hunter. This is a nasty, smelly scours often leading to death if untreated. Cases might continue into spring if cool wet weather continues. Early diagnosis and antibiotic therapy can save cattle. See article in this edition for more information.



Kidney failure in young dairy calf from a congenital defect

(1 calf) This case was referred by a Private vet as the calf had an unusual presentation and did not respond to treatment. Post mortem revealed an unusual syndrome previously diagnosed in the UK. Congenital kidney damaged in utero from viral or genetic damage "Renal dysplasia with nephrosclerosis".



Meningitis causing death in dairy calves

(10 calves) 10 x 2-5 day old calves died due to Meningitis causing a generalized septicaemia. This was likely due to a failure of passive transfer, which is the insufficient intake of colostrum. Bacterial meningitis in calves can be 100% fatal. It is crucial to ensure all calves receive 2 feeds of 2 litres of good quality colostrum within the first 24 hours of life, before the intestine closes to antibody absorption, for the best protection against disease.

Rock Fern toxicity causing red urine in Brahman X pregnant cows and Deaths in a Hereford herd

(Two farms affected), Two recently purchased pregnant cows with calves at foot presented with blood in the urine. This should always be investigated in case it is caused by Tick Fever: a notifiable disease. On investigation the cattle were negative for Tick Fever. But Rock Fern poisoning was suspected. Several cattle died on a second unrelated property. Post mortem identified rock fern toxicity as cause of death. Rock fern can cause significant disease through a bleeding disorder in cattle. Rock fern is often the first green plants to appear after a period of drought and is attractive to hungry stock.

Nitrate toxicity in cows

(3 cows) 3 deaths from nitrate toxicity in a herd of 40 breeders. The cattle were given 2 round bales of locally sourced hay the day before. Nitrate toxicity usually occurs in unaccustomed cattle given access to feed that has high nitrate levels. This could be access to a different paddock/pasture or hay/silage. Sudden death is often the result but scouring can also occur. It is advisable to test the nitrate levels of feed prior to feeding. Nitrate test stripes can be useful for a farm side test.

Hunter worm testing Results

- *Sheep* – several deaths in a small flock – 200-2800 epg. 83% haemonchus, 15% trich and 2% ostertagia
- *Cattle* – ill thrifty weaners on inadequate feed. 220-900 epg 13% Trich, 67% cooperia and 20% ostertagia
- *Cattle* – weaners ill thrifty – average 1080 epg 21% Trich, 8% cooperia, 63% Oesophagostomum and 8% ostertagia
- *Sheep* – pale and recumbent lamb – 14,400 epg.

Abortion storm in cattle due to Pestivirus

Pestivirus (Bovine Viral Diarrhoea Virus) was diagnosed as the cause of reproductive loss in three unrelated herds.

- 3/14 first calf heifers suffered abortions and premature births. Heifer group testing showed very recent exposure to Pestivirus.
- 9 mature cows from a previously closed herd suffered abortions/premature calves and Not in calf. Testing ruled out other causes of abortion and showed recent exposure to Pestivirus as causative pathogen,
- 12/80 breeders (bought in as PTIC from interstate) produced very small calves alive and dead (the calf in the photo only weighed 15kgs). Testing of tissues from the aborted calf allowed a positive diagnosis.



While widespread in Australian cattle herds, Pestivirus can cause significant economic loss, through reproductive failure if heifers and cows are exposed to the virus for the first time while pregnant.

3-5 month term abortions due to Neospora

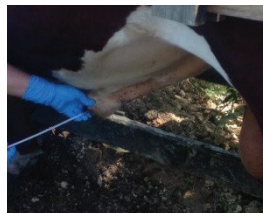
Neospora confirmed as cause of mid term abortion in several un-related cattle herds;

- 3 x 3-5 month term abortions from 24 heifers. No fetus available for testing. Follow up heifer testing ruled out Leptospirosis, Pestivirus and Vibrio, 4/7 tested heifers were positive for Neospora.
- Neospora also confirmed as cause of abortion in a large beef herd through testing of aborted fetus – heart inflammation found in fetus.
- 2/20 AI dairy cows aborted at 5 months. Neospora confirmed via post mortem of aborted fetus inflammation in brain and heart.

Neospora is a parasite carried by wild and domestic dogs. Cattle ingest the parasite from contaminated pasture. No vaccinations available only prevention of faecal contamination of pasture ie wild dog control.

Infertility investigation

4/7 breeders failed to conceive in a small beef herd. Vibriosis diagnosed through female vaginal swabs. Shared bull initially implicated, but the bull tested negative. However, Vibriosis is a difficult disease to definitely diagnose in an infected bull as the bacteria only cultures in 30% of cases (although better PCR tests are becoming available). Stray neighbours' bull noted on property and considered likely culprit. Vibriosis is a venereal disease caused by the bacterium *Campylobacter fetus* and is spread by infected bulls when they mate with susceptible cows and heifers. Vaccinating bulls annually to prevent the disease is highly recommended in all breeding herds. As eradicating the disease once introduced can be costly and difficult.



Taking a Bull Prepuce sample to test for Vibriosis

Injection site abscesses

Chest lumps in 4 recently purchased goats. Cheesy gland suspected. Diagnosed as sterile injection site abscesses.

Pneumonia in calves and cows

6 properties with weaner and adult cattle losses due to respiratory infections) A number of respiratory pathogens have been detected causing pneumonia in calves and cattle. This includes *Pasturella Multocida*, *Mycoplasma*, *Parainfluenza 3*, *Streptococcus*, *histophilus Somni*. Risk factors for pneumonia include mingling of herds from different farms, stress from transport, poor nutrition, adverse weather. If cattle appear unwell seek advice of veterinarian as bacterial infection may require antibiotics and anti-inflammatory treatment. If problems persist respiratory disease vaccination should be considered.

Sudden death in 2 steers

(1 case) Sudden death in two steers due to Urea Toxicity confirmed at post mortem testing. The herd was well very well managed, and the stock had access to a supplement which also contained urea. Urea is highly soluble and, in this case, unfortunately there had been heavy rain overnight causing the supplement to dissolve in the trough it was being fed in and causing a few animals to ingest an excessive amount. If more urea is consumed than the rumen organisms can metabolise then this can rapidly lead to poisoning and death.

Sudden Death in 3 weaner steers

Sudden death in weaner steers. Diagnosed clostridium Chauvei (Black leg) but lesion found in the heart. The vet did a thorough job finding the tell-tale black streaky lesions in the heart muscle as a cause of death. Unfortunately, the weaner steer group had only received one shot of 5 in 1 vaccination five months before. One shot only provides up to three months protection. All calves must receive two vaccinations 4-6 weeks apart for year-long protection against black leg.



Foot and Mouth Disease Exclusion in a Beef Cow with mouth and foot lesions

Case undertaken in conjunction with Private Vet. A 4 year old cow presented with a history of weight loss, excessive salivation and lesions on the gum and coronets. Very worrying signs for FMD. Tests for all exotic vesicular disease were thankfully negative. On post mortem there was marked thickening and disease of the mouth and oesophagus. Diagnosis was pre-cancerous lesions of the mouth and oesophagus possibly associated with a co-infection with papilloma virus and ingestion of bracken fern.



Important signs of disease to get checked out by a veterinarian include:



- sudden death
- yellow skin colour
- red urine
- unusual behaviour or body posture
- abortion "storm"
- drooling, lameness, sores and skin lesions
- scours and weight loss and undiagnosed ticks

HENDRA VARIANT CASE CONFIRMED NEAR NEWCASTLE

A variant Hendra virus strain has been confirmed in a 7-year-old unvaccinated horse from West Wallsend, near Newcastle on 7th October.

The detection of the virus was confirmed through testing at NSW Department of Primary Industries' (DPI) Elizabeth Macarthur Agricultural Institute laboratory and at the Australian Centre for Disease Preparedness.

DPI has routinely tested all Hendra submissions over the past 6 months for the variant Hendra strain following a retrospective detection by researchers in a Queensland horse.

A private vet attended the affected horse in response to a report that the animal was showing neurological signs, collected samples for testing and notified DPI. The affected horse was euthanised.

No other horses on the property are showing any signs of ill health.

A District Veterinarian from Hunter Local Land Services has issued an Individual Biosecurity Direction to control the movement of animals and people on and off the property for 21 days.

Public health officers from Hunter region are undertaking risk assessments of any people who have had contact with the infected horse.

Most Hendra cases in NSW have been on the north coast, with a case at Scone in 2019 being the most southern case. Vaccination of horses is the most effective way to help manage Hendra virus disease.

There have been 24 horse deaths in NSW as a result of Hendra virus on 23 properties since the first case in 2006. There have been no human deaths from Hendra virus in NSW.

Hendra virus infection is notifiable in NSW under the NSW Biosecurity Act.

Signs of infection are non-specific in the early stages and anyone who is concerned about possible Hendra infection should isolate the horse and seek veterinary advice.

If a private vet is unavailable and the illness is progressing rapidly, call:

Emergency Animal Disease Hotline on 1800 675 888.

SPRING VACCINATION REMINDER

Certain animal diseases are common and routine vaccinations should be a part of the whole herd health management program, incorporating biosecurity and disease prevention measures, to prevent stock loss.

When using a vaccine, ensure you read the label instructions for information such as dose, injection site, recommended vaccination program, With Holding Periods (WHP) and Export Slaughter Intervals (ESI) and storage instructions. Most vaccinations will take 10-14 days to provide protection, with most vaccines requiring a booster to provide longer protective immunity, just like the COVID vaccines. Below are endemic diseases that we commonly see in the Hunter Region with a brief discussion on the disease and recommended vaccination protocol.



Clostridial Diseases

Clostridial vaccinations are given to protect against Clostridial diseases (Black leg, Tetanus, Enterotoxaemia/Pulpy Kidney, Malignant Oedema and Black Disease). Clostridial spores are in the environment and gastrointestinal tract of healthy animals. Disease occurs when the bacteria enter the body through cuts, abrasions or ingestion of the bacteria or a change in diet allows clostridial bacteria to multiply and produces a toxin that can lead to sudden death. Young animals are more susceptible to most forms of clostridial disease and vaccinating all cattle (and small ruminants) with a 5-in-1 is highly recommended and a cheap insurance policy.

- Calves: Initial Booster, six to eight weeks of age.
- Booster: four weeks after initial vaccine.
- Annual booster (minimum).
- Unvaccinated adult: same protocol as calves.
- Immunity against Enterotoxaemia (Pulpy Kidney) will last three months, so a 5 in 1 booster is required before any change in diet including lush spring growth.

Leptospirosis

The 7-in-1 vaccine is recommended if you have breeding females. This vaccine will not only protect against the five main Clostridial bacteria that are mentioned in the 5-in-1 vaccine, but it also protects against Leptospirosis bacteria. Leptospirosis may cause infertility, abortions and fever in beef cattle and it is also a zoonotic disease (transmitted to humans). The 7-in-1 vaccine normally follows the same protocol as the 5-in-1 vaccine but check label instructions as some products recommend a different age of initial vaccine. Cows and heifers should receive their annual booster one month prior to calving.

Vibriosis

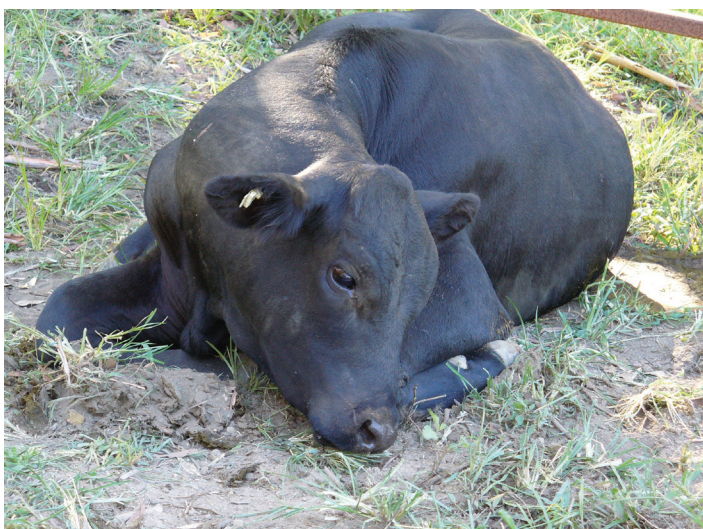
Vibriosis is a venereal disease of cattle that is caused by the bacterium *Campylobacter fetus venerealis*. Vibrio in your herd will lead to low conception rates, an increase in cows returning to service and mid-term abortion. The common scenario is where producers share bulls with friends and neighbours and the bull spreads vibrio from herd to herd.

- Bulls should receive two doses of the Vibrovax vaccine four weeks apart and then an annual booster.

Three Day Sickness

Three Day Sickness is a viral disease spread via mosquitos and midges. Consider vaccinating against Three-day Sickness (Bovine Ephemeral Fever (BEF)) in late winter-early spring to provide protection before it normally arrives in the Hunter Region (mid to late summer).

Initial vaccination requires two injections from two weeks to six months apart. It is recommended to provide the initial primer dose in late winter (August - September) and the second vaccination in early summer (Nov-Dec). Please also be aware that vaccine availability (vaccines are available from your private veterinarian) can be in short supply when the season is imminent. Speak with your private vet early to secure supply.



Cattle with BEF require treatment and paddock nursing.

Pestivirus (Bovine Viral Diarrhoea Virus (BVDV))

Pestivirus is a viral disease that can cause reproductive losses, return to service, abortions, stillbirths, birth defects and illthrift calves that are Persistently Infected (PIs) with Pestivirus. Reproductive losses occur when pregnant heifers/cows are exposed to the virus for the first time.

It is important to understand this disease, as it is present in many herds and sometimes causes foetal loss. Vaccination (Pestigard) is one way to control Pestivirus. An effective vaccination program (an initial two doses with annual boosters) will minimise the impact BVDV. Please contact your local veterinarian to discuss the best method of protection for your herd.

Pinkeye

Pinkeye is a painful bacterial infection of the eye, causing production loss, inflammation to the eye(s), pain and temporary or permanent blindness. There is a vaccine available called Piliguard that can be used three to six weeks before a challenge. When the season is prolonged, a booster vaccine can be given at five months to provide pinkeye control. Predisposing conditions include dry dusty conditions, bright sunlight, lots of flies in the environment and physical irritation such as thistles. Management steps to reduce predisposing causes are a must to support the activity of the vaccine if so used.



Vaccinations are an important part of your Farm Biosecurity Plan and assist with the prevention of common endemic diseases, improving animal health, welfare and productivity. Vaccinations are a cheap insurance policy and worthwhile investment! Recommended vaccinations may vary slightly in different regions, differing seasonal conditions and stages of the production cycle.

If you have any further questions about these diseases and vaccinations listed above or wish to discuss other diseases, please contact your local District Veterinarian.

LIVER FLUKE TESTS – WHICH SHOULD YOU USE?

Recently, we have received unexpected positive results to liver fluke egg testing of cattle faeces in areas of the Mid Coast that have not previously supported liver fluke. These were home bred cattle and thus could only have gained the infection on their home farm. Initially, we were suspicious that Liver fluke distribution might have unfortunately expanded with the recent floods to areas that have historically not hosted liver fluke and the host snail.

However, rechecking of the unexpected 'positive' liver fluke results indicates that the eggs identified as Liver Fluke eggs were most likely stomach fluke eggs. Liver fluke and stomach fluke eggs are usually distinguishable with a microscope. The eggs are similar in size and shape, but liver fluke eggs are golden yellow, while stomach fluke eggs lack pigmentation. It is notable that these cases contained pale yellow eggs, a recent and unusual finding.

This anomaly draws attention to the fact that traditional liver fluke egg counting (sedimentation test) has limitations that producers should be aware of, there are now more useful liver fluke tests available and that the distribution of stomach fluke is expanding; on a worldwide basis there are now six species of stomach flukes in Australia. The laboratory is currently investigating further by comparing results of fluke faecal egg counts with **a more accurate test - the faecal Coproantigen ELISA** – which we now recommend as a viable test for producers to use for Liver fluke burden assessment in cattle. Molecular testing and continued surveillance are also being pursued to determine whether a different or regional species of stomach fluke is involved.

While investigations are underway, it is recommended that care is taken interpreting traditional liver fluke faecal egg counts (sedimentation testing), in cattle, if your property is not known to support liver fluke. We suggest that you speak with your veterinarian to identify the best test to assess liver fluke burdens in cattle.

New Liver Fluke Test Recommendation

Generally, if you want to assess if your cattle have a current liver fluke infection then collecting faeces and using the newer Coproantigen ELISA test is recommended or submitting blood, with the help of your veterinarian, to assess if cattle have antibody to Liver Fluke.

The Coproantigen ELISA test, detects liver fluke protein in faeces and can detect early infections (5-7 weeks after infection). This test also overcomes issues of subjectivity when assessing eggs under a microscope. The traditional method for diagnosing liver fluke (the egg count or sedimentation test), which involves detection of eggs in faeces using a microscope, may fail to detect these early infections as fluke only begin laying eggs when they reach adult status in the bile ducts, some 12 weeks post infection.

It is recommended, if you are unsure if your farm hosts liver fluke to conduct either the Coproantigen faecal ELISA test or ELISA blood test on home bred cattle. While every farm will support roundworm infections in cattle and sheep (ie barbers pole, scours worm etc) and will need to regularly manage these parasites through roundworm drenches and grazing management, liver fluke distribution is patchy and only some farms will support Liver fluke and thus require use of liver fluke drenches. Liver fluke drenches can be expensive and have a long Meat Withhold period and Export Slaughter Interval.

To assist understanding, we have asked the EMAI State Diagnostic Veterinary Laboratory to provide the below interpretative information on available liver fluke diagnostics tests.

The coproantigen test is available at EMAI and pricing information can be found on the website under "L" for liver fluke ELISAs and "F" for fluke faecal egg count: <https://www.dpi.nsw.gov.au/about-us/services/laboratory-services/veterinary/veterinary-test-list>

The table provides information on the tests that are available for liver fluke diagnosis in cattle at EMAI, when they are indicated, and what information they can provide. Please contact your veterinarian for further advice on the appropriate test to use for your situation.



Liver showing adult liver fluke in bile ducts

Liver Fluke diagnostics in cattle

Test method/target	Pros	Cons	When to use	How to use
<p>Copro-Antigen ELISA (Liver fluke antigen ELISA - Faeces):</p> <p>Detects Liver Fluke protein (antigen) in cattle faeces</p>	<p>Detects infection in 82-98% of all cases (Sensitivity) & is accurate (Specificity 88-99%),</p> <p>Individual samples or pooled samples at a reduced cost</p> <p>Detect liver fluke before eggs appear in the faeces (5-7 weeks after infection)</p> <p>Suitable for drench success check</p>	<p>Not offered by the majority of labs</p> <p>Level of antigen does not reflect fluke burden in the animal</p>	<p>When liver fluke is your major concern</p> <p>Detection of present infection</p> <p>Drench check (3-4 weeks after treatment)</p> <p>Confirmation of unexpected sedimentation results</p>	<p>Faecal samples</p> <p>Make sure minimum amount of 10g/animal is sent</p> <p>Can be refrigerated if no other test required</p> <p>Individual samples can be pooled to reduce costs</p>
<p>Serum/milk ELISA:</p> <p>Detects Antibodies against fluke, in serum (blood) and milk</p>	<p>Detects antibodies in 86-100% of all cases (Sensitivity) & is accurate (Specificity 83-96%)</p> <p>Herd monitoring tool (particularly for Dairy) – can indicate infection/re-infection and potential production losses</p>	<p>Not suitable for drench checks</p> <p>Not suitable for detecting presence of disease (only previous exposure)</p>	<p>Herd monitoring tool for liver fluke (bulk tank milk/serum), particularly in areas known to support liver flukes</p> <p>needs to be regular (monthly) to add benefit</p>	<p>Individual serum samples</p> <p>Bulk tank milk sample (if herd <250-300 head) or section sample</p>
<p>Sedimentation</p> <p>Looks for and aims at identifying fluke eggs in a faecal samples</p>	<p>Detects liver AND rumen fluke eggs</p> <p>Individual or pooled samples at a reduced cost.</p>	<p>Low sensitivity: In cattle only detects infection in 20-35% of infected cattle as fluke sporadically lay eggs and egg numbers are very low</p> <p>Specificity:</p> <ul style="list-style-type: none"> • 70-100% (possible overlap in egg morphology between liver & rumen fluke eggs) • Only possible when adults lay eggs. Thus, will not diagnose new infections of juvenile flukes, ie <12 weeks • Number of eggs counted doesn't reflect size of the fluke burden – Thus, only informs of fluke presence/absence • Not the best choice for drench checks 	<p>When rumen fluke is your major concern</p> <p>Presence/absence of rumen fluke</p> <p>Export to WA</p>	<p>Faecal samples</p> <p>Make sure minimum amount of 10g/animal is sent</p> <p>Can be refrigerated if no other test required</p> <p>Individual samples can be pooled to reduce costs</p>

Liver Fluke Lifecycle and production impacts

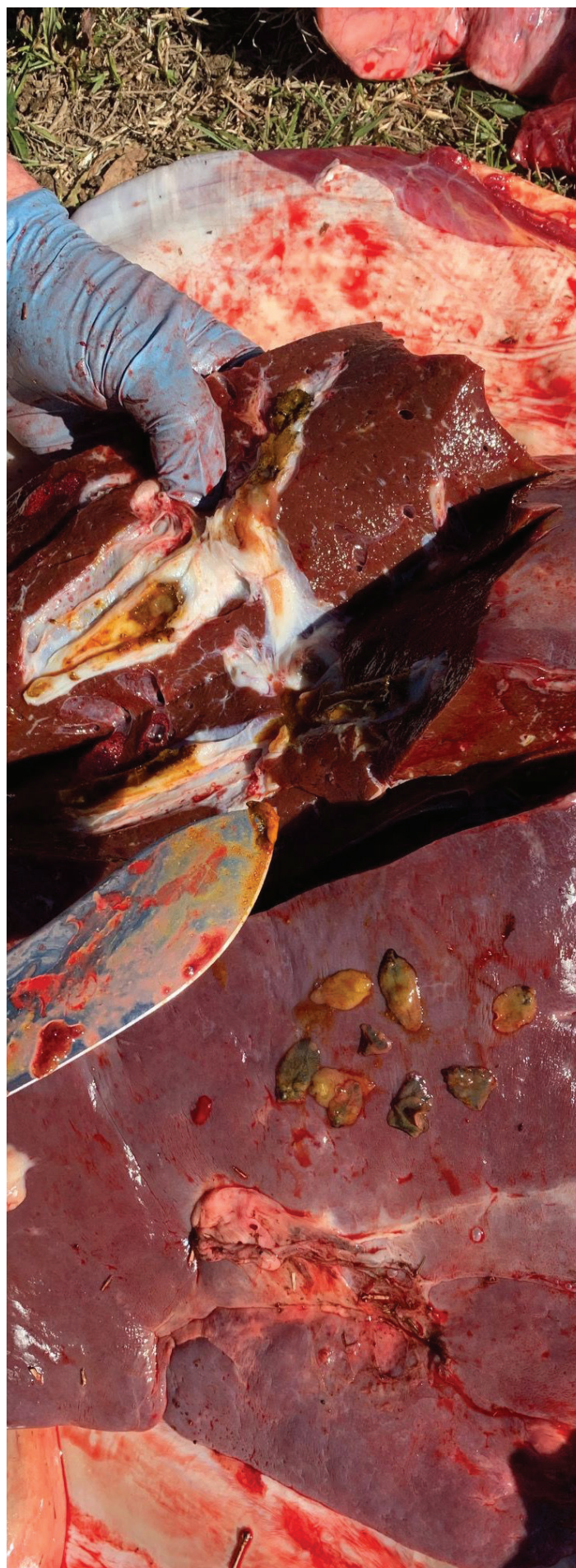
Liver fluke is parasitic flat worm known as a trematode (*Fasciola hepatica*) that infects and causes disease of the liver in cattle and sheep. Liver fluke infection is generally more severe in sheep as cattle can develop some level of immunity. But, depending on burden size and the life stage of fluke in cattle, fluke can cause; production loss, ill thrift, bottle jaw, anaemia through to death.

There are three main ways that Liver fluke cause damage and production loss;

- 1. Juvenile Liver Fluke.** Shortly after stock consume liver fluke cysts on pasture from wet areas of the paddock, the immature fluke migrate through the liver for 6-8 weeks growing from 1- 10mm in size, and feeding off blood and liver tissues. This causes haemorrhage and haemorrhagic tracts; damaged liver tissue, blood loss and liver pain. Stock may have a level of anorexia, anaemia, lose weight and look ill thrifty.
- 2. Sudden death from Clostridial Black's Disease.** The damaged liver tissue can provide an opportunity for clostridial bacteria to flourish and cause sudden death in livestock from a clostridial bacterial disease, called black's disease. This is preventable with stock being up to date in 5 in 1 clostridial disease vaccinations.
- 3. Adult liver fluke.** Adult Liver Fluke are a large brown leaf like structure that lodge and feed in the bile ducts where they mature and double in size (2-3cm) and start producing eggs from 12 weeks. Eggs are produced spasmodically and released intermittently (when the bile ducts opens into the intestine) into the faeces, leading to huge variation in detectability by egg count. They have sharp spines that damage the bile duct wall causing the liver around bile ducts to become chronically thickened and scarred - a cirrhotic liver. Clinically this can appear as
 - chronic signs of jaundice and anaemia,
 - ill thrift, weight loss; and
 - Bottle jaw from low protein in blood associated with blood loss and liver failure.

There are also less obvious effects such as a compromised immune system and greater susceptible to other diseases, reduced feed conversion efficiency, lower fertility and lower milk yield,

Further information on liver fluke is available at [Liver fluke disease in sheep and cattle \(nsw.gov.au\)](http://www.liverfluke.com.au)



Dissection of liver showing adult liver fluke in bile ducts

PARALYSIS TICKS AND CALVES

Spring and moisture also means that Paralysis ticks become more of a problem particularly for young calves. Their small size means they are susceptible to the paralysis toxin, similar to domestic pets. Multiple strategies to manage the paralysis tick include calving into low tick risk paddocks and tick preventative treatment of calves at birth. Your veterinarian can assist with advice.



LIVESTOCK HANDLING

Low-stress stock handling has taken on a new dimension with a fabulous initiative by the Kimberley Pilbara Cattleman's Association. The Livestock Handling Cup is contested by teams from all over the top-end and showcases animal welfare best practice in the northern pastoral industry. The competition requires teams to attempt a series of challenges which includes drafting out a group of cattle from a mob and then guiding them through an obstacle course. The event was contested by 14 teams who travelled up to 2000km to attend, and was won by an all-female team from Yarrie Station in WA. The organisers are hoping that the event will grow and eventually attract overseas teams. The complete article, as reported by ABC Rural, can be accessed via this link: [Low-stress stockmanship celebrated at Livestock Handling Cup in West Australia's north west](#)

Hunter Local Land Services has assisted over 200 cattle enterprises to adopt or update their skills with Low Stress Stock Handling including a group of Dairy and Beef scholarship students through Women in Dairy. Maybe one day a team from the Mid Coast or Hunter might enter! If you would like to join in on our next LSSH school at Bunya please email jacky.oneil@lls.nsw.gov.au. As soon as COVID restrictions ease the school will be on.

FLOOD MUD SCOURS PLAGUES COASTAL PRODUCERS THIS YEAR

This winter has seen an increased number of dairy and beef properties with cattle affected by Flood Mud Scours (Yersiniosis) on the Mid Coast. Thus far District and Private Vets have diagnosed cases on Oxley and Dumaresq Island, Moto, Lansdowne, Kimbriki, Gloucester, Dollys Flat and Forbesdale and in the lower hunter around Maitland. Cases have been consistent throughout June, July and August and at the time of writing continuing into September.

As reported in our winter Newsletter, we would normally expect cases to cease with warm drier weather. However, if the wet spring eventuates and cool weather persists we are asking producers to be on the lookout for a continuation of cases. Early diagnosis and treatment with antibiotics can save cattle and prevent further cases.

Affected cattle appear depressed, lethargic, with a severe foul-smelling diarrhoea and often suffering a dramatic weight loss. Cattle become dehydrated and often recumbent. It is frequently fatal to infected cattle.

Often several cases are seen over a short period in affected paddocks. Most cases this winter have been on lower lying paddocks that had been flood affected. Mud contamination of dry feed and muddy conditions as cattle congregate around silage and hay feeders is a common risk.

A diagnosis can be made by submitting faecal samples (from alive or deceased animals) to the laboratory. A post-mortem examination of deceased cattle often reveals swelling of the intestinal lining, and watery foul smelling gut contents which can also be diagnostic. However, this is also consistent with salmonella infection, which has also been noted in cattle after the floods. Hence a laboratory culture is a good confirmatory step and can also indicate which antibiotic is best to use based on bacterial sensitivity for both yersinia and salmonella.

Suitable antibiotics must be prescribed by a veterinarian; withholding periods for meat and milk apply. Isolation of affected animals from the rest of the mob is recommended. Moving cattle to a different paddock as well as moving hay and silage feeders after each bale and ensuring general good health and nutrition are also important steps to prevent further cases. Frequent observation of cattle grazing high risk paddocks to enable early treatment is recommended until warm drier weather ends the period of risk we are currently in.

EHV-1 AND CHLAMYDIA ABORTIONS IN HORSES AND THE IMPORTANCE OF BIOSECURITY

In mid 2020, a thoroughbred stud reported abortions in four thoroughbred broodmares in a herd of 10 horses over a two-month period. These mares had been vaccinated for Equine Herpes Virus 1 (EHV-1), a common cause of abortion in mares. The mares were all paddocked together and were clinically well prior to aborting.

On investigation, all four mares subsequently returned positive results for EHV-1 via PCR using swabs from the aborted foetus and placenta, confirming that the mares aborted due to infection with EHV-1, even though vaccinated.

Importantly these mares all returned negative results for Chlamydia psittaci. Chlamydia psittaci has recently emerged (first recorded case was in 2016) as a cause of equine abortion causing significant losses to the Australian thoroughbred industry. It also causes severe respiratory illness in people (Psittacosis). Psittacosis is a zoonotic disease with known transmission from equine placentas to humans. Thus, it was important to rule out Chlamydia as a cause of this abortion event. This is in comparison to EHV-1 which does not pose any risk to humans.

However, this case also highlights the difficulty EHV-1 can present to pregnant mares and that vaccination alone is not enough to control the disease; it also requires exceptional biosecurity and on farm management and records to limit spread.

EHV-1

Equine Herpesvirus Type 1 (EHV-1) is endemic in horse populations worldwide. Around 30% of the Australian adult equine population has had previous exposure to EHV-1. It is a notifiable disease in Australia (except WA and Tas) due to its impact and trade sensitivities.

Abortions usually occur in late gestation between eight to eleven months but can occur as early as four months.

Control of EHV-1 requires both vaccination and good farm management and biosecurity. Frequent vaccinations are necessary as there is no long-lasting immunity. Broodmare owners must acquaint themselves with essential biosecurity measures and the vaccination regime. Due to the zoonotic disease risk that aborting mares and the foetus pose to people (from diseases such as Chlamydia), all people handling such cases must have protective equipment available and know the biosecurity steps required to prevent themselves becoming infected.

EHV1 sources of Infection

There are two possible sources of EHV-1 infection on a farm.

1. introduction of EHV-1 virus from outside the herd or
2. a resident horse that reactivates a previously latent infection.

EHV-1 is highly infectious. Carrier foals and adult horses shed the virus in secretions. Aborted fetuses, foetal membranes and fluids are also a significant source of the virus.

EHV-1 can survive in the environment up to three weeks in the absence of disinfection and in cool, wet conditions. Aborting mares can shed the virus for up to two weeks despite demonstrating no clinical signs. Foals can be infected early in life by the dam regardless of whether she is vaccinated. Abortion can occur from two weeks to several months following exposure to the virus.

Vaccination Protocol for EHV1

Foals

Foals should be vaccinated at 3-5 months of age with a second dose 4-6 weeks later and a booster recommended every 3-6 months.

Mares

Pregnant mares should be vaccinated in the fifth, seventh and ninth month of gestation.

Non-pregnant mares in contact with pregnant mares should also be vaccinated.

The vaccine reduces the incidence of abortion, viral shedding and the clinical signs of respiratory disease. But prevention needs more than just vaccination as the vaccine is not 100% effective.

Management and Biosecurity Strategies to Reduce EHV1 abortions

Various management strategies can be implemented to ensure farm biosecurity and safety:

- Separate pregnant from non-pregnant mares and keep in small groups according to the gestational stage.
- A closed herd is a fundamental management strategy. If maintaining a closed herd is not possible, resident horses should be kept separate to introduced horses.
- Introduced horses should be quarantined for a minimum of thirty days and background, health status and vaccination status investigated.

- Records should be kept of horse movements between paddocks on the property
- Transportation equipment and objects in contact with horses should be disinfected regularly.
- Limit the number of visitors to the property and keep a logbook with visitor details.
- Potential stressors including poor nutrition, concurrent disease, travel, adverse environmental conditions and overcrowding, should be minimised to reduce reactivation of latent herpesvirus infection.

What to do in the event of Equine Abortions – Remember ‘DISH’

Horse owners and staff should be aware of the disease, preventative measures and have emergency abortion plans in place. Aborted mares should be immediately segregated from the rest of the herd and diagnostic tests performed to rule out EHV-1 and Chlamydia psittaci. Mares that have aborted should remain isolated for 14-28 days to maintain biosecurity, because if they are positive for EHV-1 they can continue to shed the virus through the respiratory route for at least 10 days.

Implement “DISH” to limit spread.

- **Disinfection** of areas contaminated by the virus from aborted material,
- **Isolation** of affected horses,
- **Submission** of clinical samples to the laboratory and
- **Hygienic** measures to ensure biosecurity.

This includes on farm Abortion kits containing barrier clothing (gloves, disposable mask, disposable coveralls and boot covers), halter and lead rope, iodine scrub and body bags with ties. Aborted foetuses plus the placenta are to be double bagged and tied securely. The rest of the herd that have been exposed should be removed from the paddock and isolated individually or in small groups of two or three mares until they foal or abort. Following abortion, lime can be spread in the areas where the foetus and placenta were found, and these areas can be fenced off to limit virus spread.

A little bit about Chlamydia Psittaci in horses and people

Chlamydia psittaci is a bacteria which is carried by birds including parrots. Hunter Local Land Services has been notified of four thoroughbred mares aborting due to infection with Chlamydia psittaci over the past month.

Birds contaminate the horse feed or water through their urine and droppings and the horse becomes infected by eating the excrement. If infection occurs during pregnancy, abortion may occur, usually between eight and eleven months of gestation. The mares do not show any signs of systemic disease or impending abortion. Infected foals that survive all have severe systemic disease with a very high death rate. There is no known horse to horse transmission.

Chlamydia psittaci can cause psittacosis in humans, through inhalation of the bacteria. Therefore, anyone that comes in contact with aborted material from horses, or is assisting with foalings, should wear gloves, a P2 mask and disposable overalls. They must also be very diligent about their hygiene. Subsequent cleaning and disinfection of themselves and all equipment is crucial.



EAD EXCLUSION

A producer purchased two Hereford cows with 12 week old calves at foot from a local saleyard. After they arrived back at the property it was noticed that both cows appeared to have blood in their urine (haematuria). The cows had previously been at a property only a few hours away.

On examination both cows had pale mucous membranes (anaemia) and confirmed haematuria. One cow was also in poor body condition and the producer commented that she had lost weight since arriving.

Blood samples were collected from both cows to rule out tick fever (red water). Tick fever is an infection with either *Babesiosis* or *Anaplasmosis* parasites that are transmitted by the cattle tick and destroy red blood cells. Although the Hunter region is free of cattle tick, not knowing the full history of where these cattle had come from, it was important to test for tick fever. Infection of cattle with *Anaplasma* or *Babesiosis* in tick free areas is notifiable in NSW as is presence of cattle tick that spreads these diseases.

The 'red water' (red discolouration of urine) seen in tick fever is attributable to *Babesia bigemina* or *Babesia bovis*. Tick fever caused by *Anaplasma marginale* usually doesn't cause red discolouration of the urine, but often causes jaundice (yellow discolouration of mucous membranes and whites of the eyes). The cattle tick, *Rhipicephalus australis*, is the vector for all three causative organisms.

NSW is free of the cattle tick, which is different from the bush tick (*Haemaphysalis longicornis*) and paralysis tick (*Ixodes holocyclus*) which exist in our area. Cattle producers should be on the look out for the presence of the cattle tick, particularly if there have been cattle movements onto the property or onto nearby properties from QLD or other parts of Northern Australia. **Tick Identification cards are available at all Hunter Local Land Services offices.** Bos indicus cattle and their crosses are more resistant to the clinical effects of infection with *B. bovis* and *B. bigemina* than Bos taurus cattle.

Signs of tick fever are associated with fever and red blood cell destruction and include weakness, depression and loss of appetite.

Blood samples from both cows were tested for tick fever via PCR. Both returned a negative result to *Babesia bovis*, *Babesia bigemina* and *Anaplasma marginale*.

It was suspected that the cattle may have ingested rock fern prior to being purchased. When the purchaser contacted the vendor he was advised that there was rock fern on his property. Rock fern contains toxins that can cause bleeding disorders in cattle. Cattle usually need to eat rock fern for two weeks before signs of poisoning occur. Rock fern is drought tolerant, and the dormant fern revives within 24 hours of rain.

They may be the first green plants to reappear after a period of drought, and are therefore often attractive to hungry stock.

Rock fern (*Cheilanthes distans* and *Cheilanthes sieberi*) has been associated with two main syndromes in cattle. An acute form of poisoning which causes extensive haemorrhage and more chronic syndrome exists where carcinogenic effects of the toxin cause benign or malignant tumours of the urinary bladder, also known as bovine enzootic haematuria. It is suspected that these cows may be suffering from the chronic form.



Haematuria which is blood in the urine is a sign of tick fever infection in cattle but can also be caused by internal bleeding and bladder lesions from Rock Fern Toxicity.

HERE'S HOW TO CONTACT YOUR DISTRICT VET:

Jim Kerr – Tocal
0439 185 275

Kylie Greentree – Maitland
0428 498 687

Kristi Arnot – Singleton
0409 758 823

Lyndell Stone – Wingham
0429 532 855

Lisa Goodchild – Scone
0427 322 311

FOR MORE INFORMATION ABOUT HUNTER LOCAL LAND SERVICES:

 1300 795 299

 admin.hunter@lls.nsw.gov.au

 www.lls.nsw.gov.au/regions/hunter

 [www.facebook.com.HunterLLS](https://www.facebook.com/HunterLLS)

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