TIPS & TOOLS

NORTHERN CATTLE

Assessing animal health status

All livestock owners in Australia have a duty of care under animal welfare legislation to ensure reasonable protection from disease for all animals they own or manage. It's important stockowners know the enemy (disease) to demonstrate compliance.

The on-farm biosecurity plan recommends 'report unusual signs of disease as soon as possible to your vet or local animal health authority.' While this is by far the best solution, in practice it seldom happens due to:

- failure to recognise a problem
- distance
- cost
- dead animals found too late
- availability of suitably qualified personnel.

The goal is to identify the causes of disease and poor performance so that animals can be provided with reasonable protection from disease, and necessary control and management measures can be implemented.

More disease problems remain undiagnosed from 'not looking' rather than 'not knowing' – animals don't die without a reason. The challenge is to find the cause.

The most effective way of keeping animals healthy is to prevent new or exotic diseases brought onto the farm in the first place.

Note: If a serious exotic disease is suspected, immediately contact Emergency Animal Disease hotline on 1800 675 888 or visit animalhealthaustralia.com.au/what-we-do/emergency-animal-disease/

Precautionary measures prior to starting

	Wear protective clothing at all times such as disposable gloves, rubber boots and overalls. After the necropsy, incinerate gloves and thoroughly wash boots and overalls.
	Treat every animal assigned to a necropsy as infectious to animal and man.
	If you live in the anthrax belt and an animal dies suddenly with dark blood discharging from the nose and/or anus – **do not open the carcase.**
ASAP	Perform the necropsy as soon as possible after the death of the animal. Post-mortem decomposition sets in quickly in large animals and the problem is exacerbated further in hot climatic conditions.
	Eating, drinking and smoking are prohibited at the necropsy.
	Prior to starting the necropsy, check the necropsy kit thoroughly to ensure all the necessary items are present for the job. A sharp knife, steel and an axe/pruning shears/saw are essential. A bucket of water, soap, brush, disinfectant, notebook and a digital camera or phone are also necessary components. Having a second person on-hand to take notes and photographs will prevent small details from being missed.
	After the necropsy, dispose of the animal's remains according to your biosecurity plan.
	Where an exotic or infectious disease is suspected, inform a veterinarian and management immediately.

Helpful hints

Here are seven tips to assist with the diagnosis.

1. History

Be meticulous about getting a good history, including:

- individual identification (ear/NLIS tag)
- age
- sex
- breed
- body condition
- climatic conditions
- length of time on property
- individual/mob recent treatments
- feed/ration changes (including paddock shifts)
- supplements
- access to toxic plants
- fertiliser application and crop spraying
- insect activity.

2. First impression

Observe and record external appearances such as discharges from eyes, ears, nose, mouth, anus, vulva, prepuce and navel. Note any:

- skin lesions
- colour of gums and conjunctivae
- rubbing of hair
- paddling of limbs (marks on the ground under the animal's feet).

3. Time since death

Rigor mortis (stiffness of the corpse) provides an indication of time since death. It usually sets in within hours and disappears after a few days.

Higher temperatures and exercise of muscles accelerate the process e.g. Tetanus or strychnine poisoning is accompanied by immediate rigor mortis.

To assist with establishing time of death look for blow fly eggs that are 1–2mm in length, they hatch after 24–45 hours then quickly grow to become first stage larvae (maggots).

4. Necropsy

If a qualified person is not available, then after observing the necessary precautions (see above), proceed to do a quick post mortem ensuring the animal is lying on its left side.

Examine the main organs which are easy to locate such as the mouth, lungs, heart, liver, kidneys, spleen and bladder.

Mention each organ examined for the sake of the note taker. Describe any lesion/abnormality (size, colour, consistency/texture), but also note when there is no abnormality to be seen (i.e. normal).

Initially, avoid cutting into the rumen or the intestines as gut content may contaminate the whole field.

Take photographs of the main organs prior to examining the gut content. If submitting samples, use clean glass bottles or zip top bags and put on ice immediately (do not freeze).

5. Gut

Open the rumen and intestines last. Take note of plant material in the rumen and observe any reddening/blood in the gut wall along with gut content.

6. Records

Send history, photos and records to your local vet or departmental officer.

7. Opening the animal

The key to an easy and successful necropsy is a sharp knife. Much energy is expended trying to perform the job with a blunt knife as tiredness sets in, decreasing the observational powers of the operator.

When skinning the animal, insert the knife under the skin and cut from the bottom up. Dirt, hair and manure quickly dull the edge of the blade.

Place the animal on the left side. Using a midline incision, cut from the mandible to the pelvic symphysis. Cut around the penis, mammary gland and testicles, leaving them with the lower half of the body.

Figure 1: Opening the animal

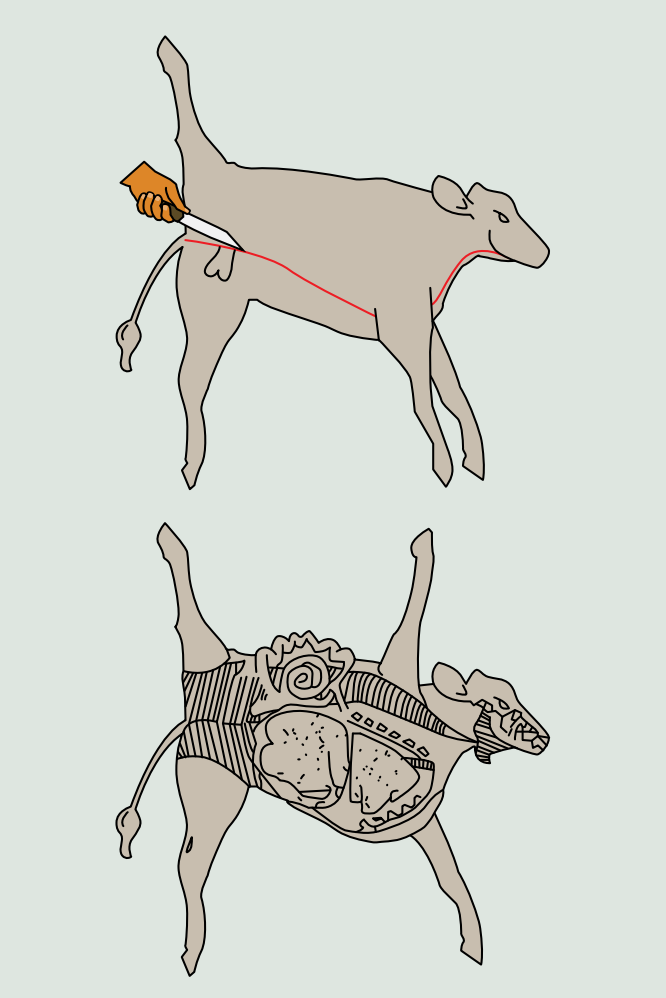
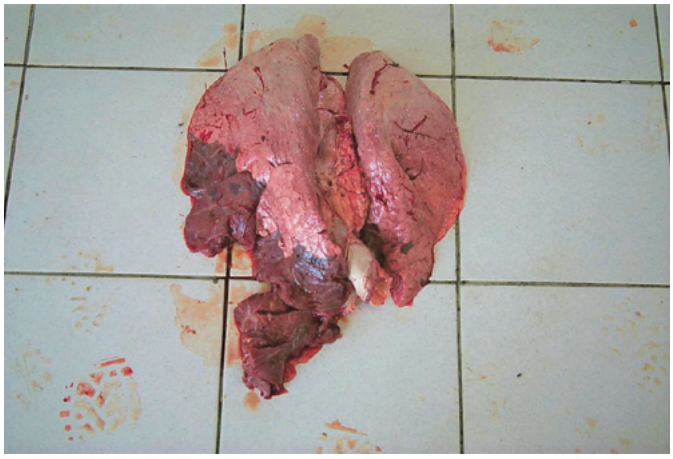


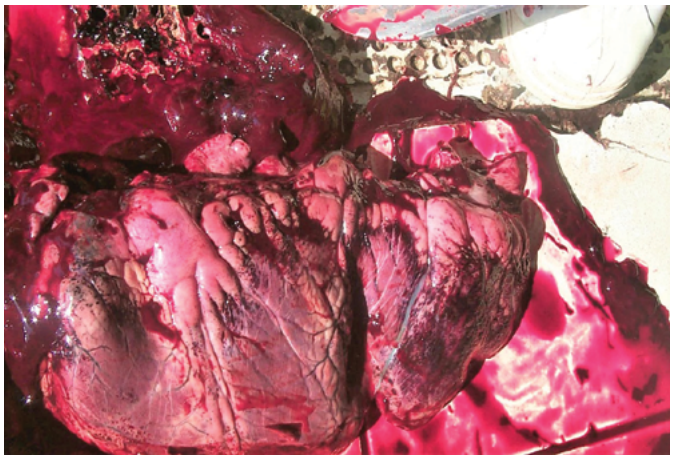
Image: Adapted from the Veterinary Handbook at veterinaryhandbook.com.au/ContentSection.aspx?id=44

Knowing normal assists recognition of the abnormal



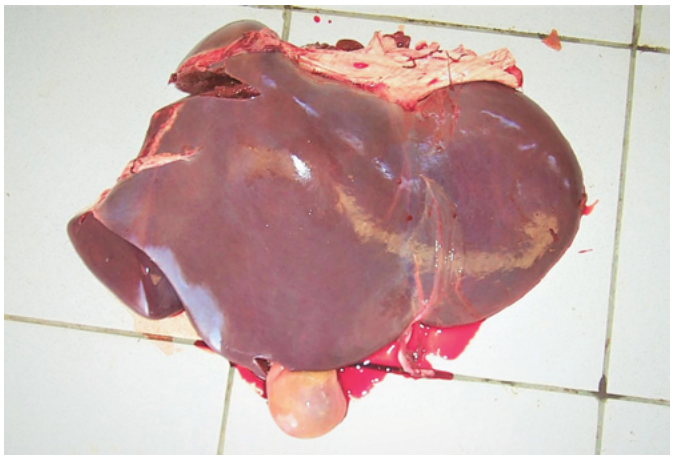
Lungs

A normal lung should be pink and spongy. If it is dark and solid, then this is typical of pneumonia. Pneumonia usually occurs in the ventral (lowest) lobes of the lung. This photo shows both a normal (right) and a diseased lung (left). A lung, which is lying on the bottom of the chest cavity, will often appear congested as blood gravitates to the lowest level after death. Cutting open the trachea can reveal inhaled foreign matter, or froth (e.g. with large lungworm infestation).



Heart

The normal heart is dark rose in colour, firm to touch and the blood vessels easily seen. A damaged or diseased heart will often display small blotchy haemorrhages on the surface. These will be around 1–2mm in diameter and be dark crimson in colour. Haemorrhages are often seen on the inside chambers of an affected heart once cut open.

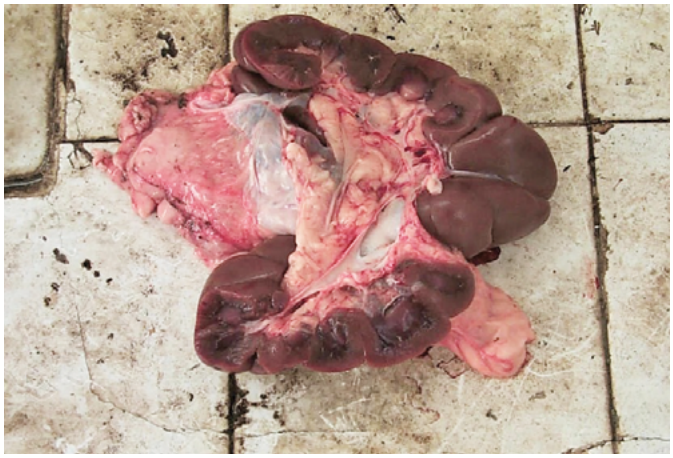


Liver

Reddish brown colour and firm in texture. A normal liver has sharp, well-defined edges and folds easily. An affected liver will be swollen and the edges of the lobes are rounded and very taught. A jaundiced liver will usually be swollen and will be orange in appearance. Granular bile in the gall bladder is an indicator the liver has been affected.

Spleen

The spleen is located on the outer side of the rumen. A normal spleen is greyish mahogany in colour but the cut surface is granular and a deep mahogany. The organ is soft, the edges fold easily, and the outer surface slightly wrinkled. An affected spleen is swollen, firm and the edges rounded.



Kidney

The kidneys are often surrounded by fat and lie in the loins region. They are usually reddish brown in colour. Kidneys are a smooth, lobulated organ and firm in consistency. A kidney is best incised to determine if there are any significant issues. There are two layers inside, an outer section called the cortex and the inner is called the medulla.

Petechial haemorrhages

Petechiae are small haemorrhages that can appear anywhere on organs and under the skin. They usually indicate a febrile reaction caused by an infectious agent. They can also be associated with an agonising death. Increased reddening or inflammation is also associated with infection as opposed to bruising which is usually a chocolate colour.

More information

You can download the full Tips & Tools suite at: mla.com.au/reproductiveperformance, including:

- *What joining system should I use?*
- *How do I manage heifers pre-joining to improve reproductive performance?*
- *What's causing reproductive loss?*
- *How to do a calf necropsy.*

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