Post-mortem guide

This is a visual guide to a thorough ruminant post-mortem examination. This guide was developed by the Department of Primary Industries and Regional Development (DPIRD) to assist veterinarians in safely performing a ruminant post-mortem and collecting diagnostic samples. Using correct post-mortem sampling techniques will increase the likelihood of a definitive diagnosis in disease investigations. Please refer to document **'A visual guide to diagnostic sampling'** for specific sample requirements.

Post-mortem approach

Observe, describe and photograph all lesions found during the postmortem. Where possible, sample transitional zones from healthy to diseased tissue for histopathology.

Equipment required:

- Standard postmortem kit including boning and skinning knives, scissors, scalpel blades, forceps, laboratory submission forms, permanent markers
- Dry swabs, swabs in media, specimen jars for individual fresh samples, large containers for pooled formalin fixed samples
- Large pruning secateurs to cut through ribs and jaw
- Bone saw, small axe and hammer for brain removal
- Personal protection equipment including overalls, gloves, mask, knee protectors.

Laboratory samples

Base sample set

Blood (fresh and fixed samples is sufficient to diagnose common endemic diseases present in Western Australia.

Collection from recently dead animals (< 24 hours)

Collect vitreous humour from the posterior chamber of the eye. Collect 1.5-2ml in a 2ml serum tube and freeze.

Post-mortem procedure (page 1 of 4)

Step 1:

Expose the thorax and abdomen

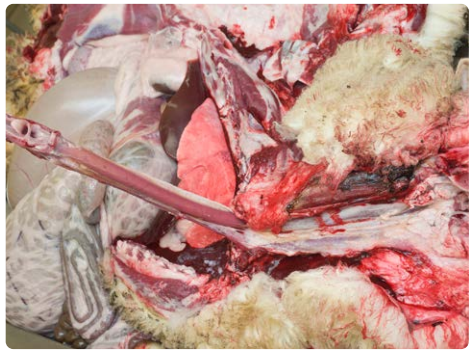
Lay the animal in left lateral recumbency. Reflect the right forelimb and hindlimb. Carefully incise abdominal muscles to expose the abdominal organs without rupturing the intestine or forestomachs. Using rib cutters, cut the rib cage along the ventral and dorsal aspects to expose the thoracic contents

Step 2:

Expose the oral cavity

Extend the incision up the neck to the chin. Using rib cutters, cut through the mandibular symphysis to expose the oral cavity. Check for lesions

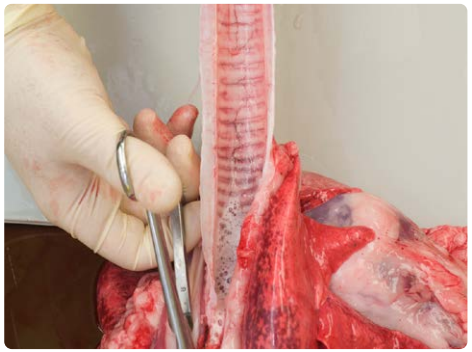
Step 3:



Dissect the neck

Hold the tongue and dissect through the hyoid apparatus to release the pharynx and larynx. Continue dissecting the oesophagus and trachea down to the thoracic inlet

Step 4:

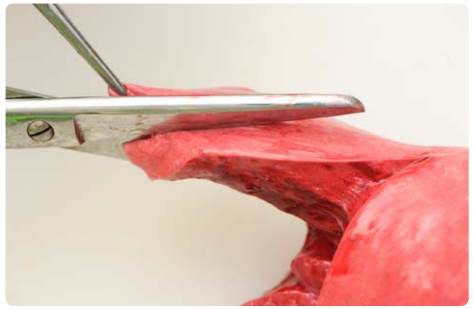


Open the trachea

Using scissors, cut down the trachea extending along the major brochi into the lungs. Check for the presence of lung worms

Post-mortem procedure (page 2 of 3)

Step 5:



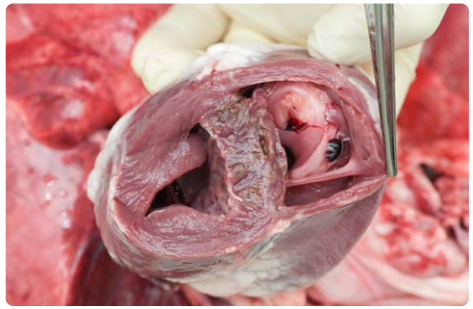
Sample the lungs

Step 6a:

Dissect the heart

Make two transverse sections (1 cm apart) two-thirds of the distance from the apex of the heart

Step 6b:



Dissect the heart

Examine the A-V valves through the exposed ventricles. Sample the heart

Step 7:

Dissect and sample the liver

Make multiple slices through the liver to detect any lesions not grossly visible. Sample the liver

Step 8a:

Dissect the intestines

Sample the duodenum and jejunum

Step 8b:

Dissect the intestines

Expose the ileo-caecal junction by lifting the small intestines over the dorsal aspect of the carcase. Sample the ileum and ileal contents

Step 8c:

Dissect the intestines

Sample the caecum and colon

Step 9a:

Examine the abomasum

Examine the abomasum for the presence of Haemonchus parasites, hyperplasia or nodular changes. Sample the abomasal tissue

Post-mortem procedure (page 3 of 3)

Step 9b:

Examine and sample the rumen

Test rumen pH (Normal 5.5-7.0). Examine the contents for intact leaves of poisonous plants. If ARGT is suspected, sample rumen fluid

Step 9c:

Examine and sample the forestomach

Empty the forestomachs and examine the ventral rumen mucosa for evidence of rumenitis. The ventral pillars are often affected. Sample the rumen

Step 10:

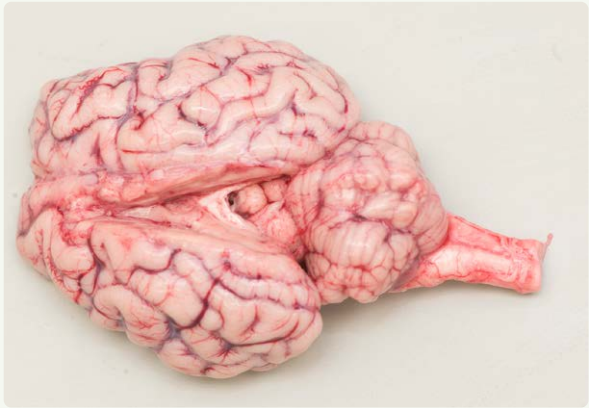
Examine and sample the kidneys

Step 11:

Examine and sample the muscles

Slice hindlimb musculature looking for areas of pallor suggestive of nutritional myopathy. Sample the skeletal musculature

Step 12:



In some circumstances, the brain and spinal cord are required for diagnostic purposes. Refer to the brain removal techniques section of this guide.