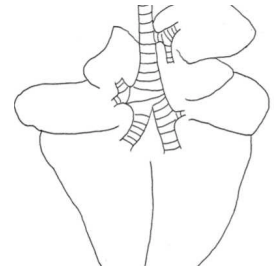


May 06, 2024

## Bovine necropsy

DOI

[dx.doi.org/10.17504/protocols.io.n2bvj344wlk5/v1](https://dx.doi.org/10.17504/protocols.io.n2bvj344wlk5/v1)



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**Protocol Citation:** Laetitia Dorso 2024. Bovine necropsy. protocols.io <https://dx.doi.org/10.17504/protocols.io.n2bvj344wlk5/v1>

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**Protocol status:** Working

**We use this protocol and it's working**

**Created:** February 09, 2024

**Last Modified:** May 06, 2024

**Protocol Integer ID:** 94963

**Keywords:** necropsy, autopsy, bovine, cattle, veterinary investigation, cause of death, animal, body examination



## Abstract

A necropsy is the final medical diagnostic procedure performed on a deceased animal to determine the cause of death. The aim of a necropsy is to investigate and define as precisely as possible the cause of death of the animal, or to identify and confirm the suspected pathological process.

It is a medical examination. It consists of several stages, and must be carried out in premises dedicated to this activity, in accordance with the regulations.

A summary report must be drawn up and signed by the pathologist to record the observations made. The samples and analyses, if needed, must be taken as soon as possible after the body's arrival at the laboratory.

## Anamnesis

- 1 Breeding:  
Rearing method, number and age of animals  
Feed  
Breeding health plan, vaccines, deworming, others (nature, dates)  
Morbidity, mortality (diagnosis, number and %)
- 2 Animal:  
Date of introduction in the herd  
Symptoms (description, chronology, duration)  
Conditions, date and time of death  
Treatments (nature, date)  
Complementary examinations (nature, dates, results)

## Necropsy technique for an adult cattle

- 3 The animal is suspended by one hind leg.  
Check the animal's identity (Conforming buckle)  
**Assessment of the condition of the animal**
  - Observation of the skin (erosion, etc.), overall silhouette (swelling, oedema, amyotrophy, etc.)
  - Observation of mucous membranes (eyes, mouth) colour changes (congestion, pallor, cyanosis, petechiae)
  - Observation of the eyes and oral cavity
  - Observation of the hindquarters and rectal and vaginal mucosa looking for signs of diarrhoea, congestion and petechiae.**A T-shaped incision is made:** the two horizontal branches of the T follow an axis from the caudal linea alba to the lumbar spine, and the vertical branch of the T runs from the pubic symphysis to the xiphoid process along the linea alba.  
The vertical incision involves the skin, abdominal muscles and peritoneum.
  - Observation of the peritoneal cavity (presence of exudate, blood) and parietal peritoneum.
  - Identification of the body condition score based on observation of pelvic adipose tissue.
  - Section at distal rectum level.Downward reclamation of the digestive mass (using gravity) after section of all mesos along the spine.  
**Analysis of abdominal viscera**
  - Isolate the spleen, liver and kidneys: make multiple sections in the liver parenchyma and a longitudinal section of the kidneys after decapsulation.
  - Separation of the foregut from the intestinal mass.
  - Opening of the foregut successively according to their greatest curvature (rumen, reticulum, omasum, abomasum).



- Observe the contents of the foregut: qualitative and quantitative aspects.
- Observe the mucosae.

Lay out the intestinal mass so as to identify the main segments (on one side duodenum, jejunum, ileum, ileocaecal valve, caecum, mesenteric lymph nodes, on the other side spiral colon, rectum).

- Open each segment (duodenum, proximal jejunum, medial jejunum, distal jejunum, ileum, caecum, spiral colon and rectum) to a length of approximately 10 cm and observe the contents (qualitative/quantitative) and the appearance of the mucosa.
- Open the uterus: observe the contents and mucosa.
- Open the bladder: observe the contents and mucosa.

#### **Analysis of the thoracic viscera:**

- Cut the diaphragm where it attaches to the ribs and check for the presence of a pleural vacuum.
- Observe the pleural cavity (presence of exudate, blood) and the parietal pleura.
- Cut the oesophagus and trachea cranially to remove the heart/lung block.
- Separate the heart from the lungs.
- Open the oesophagus longitudinally: analyse any contents and the oesophageal mucosa
- Open the trachea to the tracheobronchial junction: analyse any contents and the tracheal mucosa.
- Palpate the lung parenchyma carefully (cranially first, then caudally), looking for any change in consistency.
- Make a section in each of the lobes and observe: the airways, the vessels, the alveolar parenchyma.
- Cutting the heart: the pericardium is incised and the heart is removed. A first apical section is made about 1/3 of the apex.
- The ventricular walls are examined and their thickness assessed. The right heart is placed on the left and the left heart on the right.
- A second incision is made in the left ventricle, following the septum and opening the left ventricle and aorta.
- A third incision, parallel to the second, is made through the left ventricle and left atrium.
- A fourth incision is made in the right ventricle, following the septum and opening the right ventricle and pulmonary artery.
- A fifth incision, parallel to the fourth, is made through the right ventricle and right atrium.
- Observation of heart valves and myocardium
- Observation of lymph nodes in the carcass
- Observation of joints and feet

**Record each observation in the following sections, using the tables provided.**

## Identification



4

A	B	C	D
Ear tag	Sex	Age	Breed

## Necropsy findings

5

A	B	C	D
Body Condition Score / 5 :	<input type="checkbox"/> Correct	<input type="checkbox"/> Amyotrophy	<input type="checkbox"/> Leanness

6

A	B	C	D
Status of preservation	<input type="checkbox"/> Correct	<input type="checkbox"/> Poor	<input type="checkbox"/> Autolysed

7

A	B	C	D	E	F
Exterior appearance	<input type="checkbox"/> No significant lesion (NSL)	<input type="checkbox"/> Diarrhoea spots	<input type="checkbox"/> Limb swelling	<input type="checkbox"/> Scabs	<input type="checkbox"/> Other lesions

8

A	B	C
Abdominal cavity	<input type="checkbox"/> NSL	
	<input type="checkbox"/> Effusion	<input type="checkbox"/> Hemorrhagic
		<input type="checkbox"/> Sero-hemorrhagic
		<input type="checkbox"/> Fibrinous
		<input type="checkbox"/> Suppurated
	<input type="checkbox"/> Adhesions	<input type="checkbox"/> Suppurated
		<input type="checkbox"/> Fibrosis

9

A	B	C	D	E
Oral cavity	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcerations	<input type="checkbox"/> Other	



A	B	C	D	E
Teeth	<input type="checkbox"/> NSL	<input type="checkbox"/> Abnormal coloration	<input type="checkbox"/> Abnormal abrasion	<input type="checkbox"/> Other
Tongue	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcerations	<input type="checkbox"/> Other	
Oesophagus	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcerations	<input type="checkbox"/> Obstructions	<input type="checkbox"/> Other

10

A	B	C	D	E	F
Rumen	Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Dry	<input type="checkbox"/> Liquid	<input type="checkbox"/> Other
	Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcers	<input type="checkbox"/> Melanosis	<input type="checkbox"/> Other
Reticulum	Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Dry	<input type="checkbox"/> Liquid	<input type="checkbox"/> Other
	Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcers	<input type="checkbox"/> Melanosis	<input type="checkbox"/> Other
Omasum	Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Dry	<input type="checkbox"/> Liquid	<input type="checkbox"/> Other
	Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcers	<input type="checkbox"/> Melanosis	<input type="checkbox"/> Other
Abomasum	Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Dry	<input type="checkbox"/> Liquid	<input type="checkbox"/> Hemorrhagic
	Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Ulcers	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fundus
				<input type="checkbox"/> Chronic	<input type="checkbox"/> Pylorus

11

A	B	C	D	E	F
Duodenum					
Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fibrinous	<input type="checkbox"/> Parasites	<input type="checkbox"/> Other
Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestive	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Other
Jejunum					
Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fibrinous		
Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestive	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Thickening
	<input type="checkbox"/> Parasites	<input type="checkbox"/> Other			
Ileum					
Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fibrinous	<input type="checkbox"/> Other	
Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestive	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Thickening
		<input type="checkbox"/> Parasites	<input type="checkbox"/> Other		
Colon					
Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fibrinous	<input type="checkbox"/> Parasites	<input type="checkbox"/> Other



A	B	C	D	E	F
Rectum					
Content	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhagic	<input type="checkbox"/> Fibrinous	<input type="checkbox"/> Parasites	<input type="checkbox"/> Other
Mucosa	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestive	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Other
Mesenteric lymph nodes	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased size	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Suppuration	

12

A	B	C	D	E
Liver	Size	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Reduced
	Shape	<input type="checkbox"/> NSL	<input type="checkbox"/> Rounded	
	Color	<input type="checkbox"/> Red	<input type="checkbox"/> Beige	<input type="checkbox"/> Orange
	Consistency	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Reduced
		<input type="checkbox"/> Abscess	<input type="checkbox"/> Necrosis	
Gall bladder		<input type="checkbox"/> NSL	<input type="checkbox"/> Repletion	<input type="checkbox"/> Emptiness

13

A	B	C
Pleural cavity	<input type="checkbox"/> NSL	
	<input type="checkbox"/> Effusion	<input type="checkbox"/> Hemorrhagic
		<input type="checkbox"/> Sero-hemorrhagic
		<input type="checkbox"/> Fibrinous
		<input type="checkbox"/> Suppurated
	<input type="checkbox"/> Adherences	<input type="checkbox"/> Fibrinous
		<input type="checkbox"/> Fibrosis

14

A	B	C	D	E	F
Nasal cavities	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestion	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Suppuration
Trachea	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestion	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Ulcer	<input type="checkbox"/> Foam
Larynx	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestion	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Ulcer	<input type="checkbox"/> Foam
Lungs	Size	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Reduced	

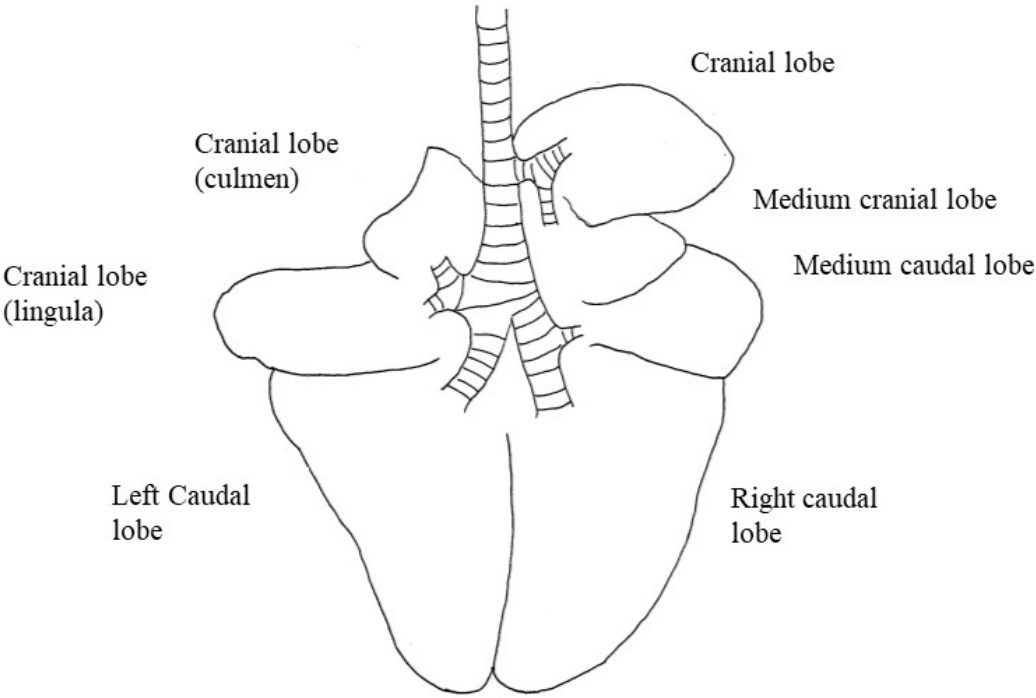


A	B	C	D	E	F
	Shape	<input type="checkbox"/> NSL	<input type="checkbox"/> Rounded		
	Color	<input type="checkbox"/> Pink	<input type="checkbox"/> White		
Lesion characteristics (if lung involvement)					
Distribution	<input type="checkbox"/> Focal	<input type="checkbox"/> Multifocal	<input type="checkbox"/> Extensive	<input type="checkbox"/> Disseminated	
Affected percentage	<input type="checkbox"/> 0-25%	<input type="checkbox"/> 25-50%	<input type="checkbox"/> 50-75%	<input type="checkbox"/> 75-100%	
Demarcation	<input type="checkbox"/> Clear	<input type="checkbox"/> Blurred			
Exudate	<input type="checkbox"/> NSL	<input type="checkbox"/> Foam	<input type="checkbox"/> Mucus	<input type="checkbox"/> Suppurated	
Tracheobronchial lymph nodes	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased size	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Suppurated	

15

A	B	C	D	E
Heart	Pericardium	<input type="checkbox"/> NSL		<input type="checkbox"/> Hemorrhagic
				<input type="checkbox"/> Sero-hemorrhagic
				<input type="checkbox"/> Fibrinous
				<input type="checkbox"/> Suppurated
	Myocardium	<input type="checkbox"/> NSL	<input type="checkbox"/> Hypertrophy	<input type="checkbox"/> Necrosis
	Valve	<input type="checkbox"/> NSL	<input type="checkbox"/> Endocarditis	
	Abnormalities	<input type="checkbox"/> Ventricular septal defect	<input type="checkbox"/> Atrial septal defect	<input type="checkbox"/> Patent ductus arteriosus





16

A	B	C	D	E
Kidney	Size	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Decreased
	Shape	<input type="checkbox"/> NSL	<input type="checkbox"/> Modified	
	Color	<input type="checkbox"/> Red	<input type="checkbox"/> Beige	<input type="checkbox"/> Other
	Consistency	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Decreased
		<input type="checkbox"/> Tumor infiltration	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Other

Tumour infiltration

17

A	B	C	D	E	F
Joint	Joint cavity	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhage	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Suppuration
	Joint cartilage	<input type="checkbox"/> NSL	<input type="checkbox"/> Erosion	<input type="checkbox"/> Necrosis	
	Bones	<input type="checkbox"/> NSL	<input type="checkbox"/> Osteomyelitis		
Muscles	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhage	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Degeneration	



A	B	C	D	E	F

18

A	B	C	D	E
Udder	Color	<input type="checkbox"/> Beige	<input type="checkbox"/> Red	<input type="checkbox"/> Purplish
	Size	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Decreased
	Consistency	<input type="checkbox"/> NSL	<input type="checkbox"/> Increased	<input type="checkbox"/> Decreased
		<input type="checkbox"/> Abscess	<input type="checkbox"/> Milk modification	<input type="checkbox"/> Necrosis

19

A	B	C	D	E
Genital system				
Ovary / testicle	<input type="checkbox"/> NSL	<input type="checkbox"/> Other		
Penis	<input type="checkbox"/> NSL	<input type="checkbox"/> Other		
Uterus	<input type="checkbox"/> NSL	<input type="checkbox"/> Pregnant	<input type="checkbox"/> Exudate	<input type="checkbox"/> Hemorrhagic
				<input type="checkbox"/> Suppurated
				<input type="checkbox"/> Necrotic

20

A	B	C	D	E
Brain	<input type="checkbox"/> NSL	<input type="checkbox"/> Hemorrhage	<input type="checkbox"/> Necrosis	<input type="checkbox"/> Abscess
Meninges	<input type="checkbox"/> NSL	<input type="checkbox"/> Congestion	<input type="checkbox"/> Fibrin	<input type="checkbox"/> Suppuration

## Assesment of lesions

21 Assessment of lesions

22 Significant lesions

23 Non significant lesions



## 24 Conclusion

