

## B- Viscera Inspection

The viscera includes the contents of the abdominal and thoracic cavities plus the "tubes" that lead into and out of some of the organs in these cavities. Viscera separation is the dividing of the internal organs of the body such as the heart, lungs, liver, kidneys, intestines, etc., into various offal products. Offal parts are animal parts other than the carcass (body).

The following steps are performed in viscera inspection.

1. Observe cranial and caudal mesenteric (mesenteric) lymph nodes, and abdominal viscera.
2. Observe and palpate rumeno-reticular junction.
3. Observe esophagus and spleen.
4. Incise and observe lungs lymph nodes - mediastinal [caudal (posterior), middle, cranial (anterior)], and tracheobronchial (bronchial) right and left.
5. Observe and palpate costal (curved) surfaces of lungs.
6. Incise heart, from base to apex or vice versa, through the interventricular septum, and observe cut and inner surfaces.
7. Turn lungs over; observe ventral (flat) surfaces and heart's outer surface.
8. Incise and observe hepatic (portal) lymph nodes.
9. Observe bile duct (both directions) and observe its contents.
10. Observe and palpate liver's ventral surface.
11. Turn liver over, palpate renal impression, observe and palpate parietal (dorsal) surface.



There are many possible conditions that may be observed at viscera inspection. The liver and kidneys have certain conditions that are specific to these organs so we will discuss them separately. For the other visceral organs, here are the most commonly seen conditions:

1- Abscesses are frequently detected, especially in the palpation and observation of the rumeno-reticular junction. These abscesses are usually localized and require only that the viscera be condemned, however, you should be alert to the overall condition of the carcass and thoracic viscera. If abscesses are also found in other locations it could be an indication of a

generalized condition in which case you would retain the carcass and all parts for the veterinarian.

2- Tuberculosis may also be detected during viscera inspection especially in the incision of the lung's lymph nodes. When TB lesions are detected, the carcass and all parts must be retained.

3- Granuloma - A granuloma may be detected especially in the thorax. It will usually appear as a variably sized solid to semi-solid lesion that is of caseous, or cheese-like consistency. Retain the viscera and carcass for veterinary disposition.

4- Neoplasms (tumors) may be detected during viscera inspection. These tumors typically would appear as nodules or lumps in or on visceral parts. Many of these neoplasms have the capability of spreading to other parts of the carcass and parts. Whenever you see a neoplasm, the carcass and all parts would be retained for veterinary disposition.

5- Pigmentary changes are sometimes found while performing viscera inspection. The following are the most common pigmentary conditions:

- Xanthosis –this condition is found in the muscle tissue of older animals, especially the cheeks, heart, and esophagus.

You would have all affected tissues removed and condemned. If you believe it is generalized, retain for veterinary disposition.

- Melanosis – this condition is created by the abnormal deposition of the melanin pigment in various tissues. It is most commonly found in the lungs and liver. You would have all affected tissues removed and condemned. If you believe it is generalized, retain for veterinary disposition.

- Icterus – this condition presents as a yellow discoloration of all visceral and carcass tissues. Retain for veterinary disposition.

6- Inflammatory conditions – There are various types of inflammatory conditions which may be observed while performing viscera inspection. The most common are:

- Enteritis - the small intestines may appear dark red to purple; this would indicate a condition called enteritis. The determination whether the

condition is acute or chronic must be made. If acute, the carcass and parts must be retained.

- Pneumonia and pleuritis are the most common abnormalities observed. Acute pneumonia is characterized by enlarged, edematous lymph nodes and/or dark red to purple sections or spots in the lung tissue. Retain this carcass and all parts for disposition. A chronic pneumonia may be characterized by a localized abscess within the lungs, or many times evidence that the lung has become adhered to the pleura (lining of the thoracic cavity), frequently called pleuritis.

You will retain the carcass and all parts upon detecting a generalized condition. When the condition is strictly localized, the lungs would be condemned, as well as any contaminated organs, and the carcass retained for removal of any adhesions that may be present.

- Pericarditis - (inflammation of the pericardium or heart sac) - When an inflammation of the inner lining of the heart occurs, the condition is referred to as endocarditis. If the condition is acute, or there are secondary changes to the carcass and other organs, the carcass and parts must be retained for the veterinarian.

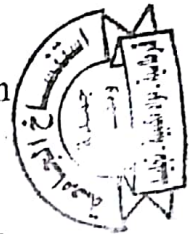
- Peritonitis – (inflammation of the lining of the abdominal cavity) – If acute, extensive, or there are secondary changes, the carcass and parts must be retained for the veterinarian.

- Metritis – (inflammation of the uterus) - may vary from a slight redness or odor in the uterus or pyometra (metritis), to a retained placenta or fetus. In these instances you should evaluate the degree of involvement, the remaining viscera condition, and the carcass condition.

Adhesions may be seen with any of these conditions. Adhesions are simply a chronic reaction to inflammation in which the surfaces of two or more organs are connected by fibrous connective tissue.

If any of the above inflammatory conditions appears localized, or chronic, and no further carcass or viscera involvement is observed, the abdominal viscera would be condemned and the carcass retained for trimming.

Some conditions that you may see in the muscular tissue of the heart, esophagus, or diaphragm are:



7- Cysticercosis – as was discussed under head inspection, beef tapeworm cysts may be seen in any muscle tissue at inspection but is most commonly seen in the active muscles such as the cheeks, heart, esophagus, and diaphragm. Retain the carcass and parts for veterinary disposition.

8- Eosinophilic myositis (EM) – as was discussed under head inspection, this condition presents as variable sized areas of muscle discoloration most commonly affecting the heart, cheeks, diaphragm, esophagus, or tongue. If it is suspected to be generalized, retain the carcass and parts for the veterinarian.

An infectious disease process, if not contained by the animal's defenses, may result in pathogenic bacteria and their associated by-products circulating in the bloodstream creating a condition called septicemia.

9- Septicemia--a generalized inflammatory condition caused by pathogenic bacteria and associated toxins in the blood. Most, or all, of the body lymph nodes may be enlarged, hemorrhagic, and edematous. Kidneys may have petechiae (small pinpoint hemorrhages). Other pathology may be present. Retain the carcass for veterinary disposition.

### **Liver Conditions**

Here are the most commonly seen conditions that affect the liver.

- 1- Abscess - an abscess may appear on the surface and be quite obvious, or it may be located under the surface, and only detected when you palpate properly. You may make as many incisions as you feel necessary to search for abnormal conditions, but remember you should not mutilate product unnecessarily. In all cases, a liver containing an abscess is condemned as not fit for human consumption. Benign abscesses (non-malignant, and judged not to be affecting surrounding tissue) may be salvaged for animal food after removal of the abscess itself. Abscesses may be associated with specific diseases, but are usually seen as localized conditions.
- 2- Liver Flukes - the appearance of a fluke infested liver depends a great deal on the amount of fluke infestation. A slight infestation

will probably not affect the liver tissue as such. A heavy infestation may cause a cirrhotic effect on the organ, with the surface becoming scarred. Many times there are bumpy, raised and/or depressed areas, and sometimes a discoloration showing dark blue to black sections on and within the tissue. The liver may take on a "hobnail appearance".

The primary purpose in opening the bile duct during liver inspection is to detect flukes. When there is a fluke infestation the bile duct may be thickened and frequently you will observe live flukes. The three liver flukes most often seen in domestic cattle today are: *Fascioloides magna*; *Fasciola hepatica*; *Dicrocoelium dentricum*.

In all cases of liver fluke infestation the liver is condemned and not eligible for human consumption. The liver may be salvaged and used for animal food.

3- Hydatid Tapeworm Cyst - hydatid cysts may occasionally affect livestock. Most domestic food animals are the intermediate host for this tapeworm cyst, which usually is a result of the tapeworm (*Enchinococcus granulosus*) of dogs. While the animal eats or grazes, it consumes the eggs, probably deposited by the dog, and the eggs in turn change to larvae in the food animal's system. The larvae then end up in various organs via the blood stream. The cyst will vary in size but may be as large as two to four inches in diameter. The fluid inside the cyst is usually clear and colorless. You must be careful not to confuse the hydatid cyst with an accessory gall bladder.

The organ or part affected with a hydatid cyst is condemned and is not suitable for use in animal food.

**Some other conditions that may be seen in liver inspection are:**

- Cirrhosis - characterized by degeneration of liver tissue with a replacement by hard, tough, fibrous connective tissue. Condemn these livers and the plant may save them for animal food.

- Chronic Passive Congestion (Blue Livers)- the presence of large amounts of blood in the liver with resulting degenerative changes. Condemn these livers and the plant may save them for animal food.

• Melanosis – melanin deposits of varying size are present in the liver. Condemn these livers and the plant may save them for animal food.

• Fatty Liver - seen mostly in pregnant cows as a result of fatty deposition in the liver. The liver will be pale in appearance. These livers may be passed for food.

### **Kidney Conditions**

- 1- Cystic kidneys – in this condition the kidneys have fluid-filled cysts visible on the surface of the organ or occasionally embedded inside. Slight cystic conditions may be trimmed and passed. When the cystic condition is more than slight, the kidneys are condemned.
- 2- Nephritis is an inflammation of the kidney and is usually characterized by swelling, off-color, or abscess. As a general rule nephritis is a secondary cause resulting from other disease conditions within the animal. When the urinary tract, bladder, and other organs show signs of involvement, the carcass should be retained (including the viscera if available) for the veterinarian to make a final disposition. If the nephritic condition is considered localized or chronic, the kidney is removed and condemned, and the carcass passed.
- 3- Lymphocytic infiltration is a condition usually found in calves in which there are white streaks or spots in the kidney tissue. Kidneys with marked or extensive lymphocytic infiltration (white spots or streaks) are to be condemned. Those with slight streaks or a few spots may be passed without restriction.