

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Red Meat Animals - General	08-A-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 2
RATIONALE <p>Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>The PM examination is intended to detect any lesions, in the carcass, or any of its parts.</p> <p>Examination to determine the presence or absence of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.</p> <p>Note: A proper ante-mortem (before death) inspection is critical in detecting animals affected with disease conditions that may not result in visible changes in the carcass or internal organs.</p> <p>The need for a PM inspection is mandated in both the Alberta <i>Meat Inspection Act</i> (MIA) and in the Alberta <i>Meat Inspection Regulation</i> (AR 42/2003).</p> <p>Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.</p> <p>Section 47 of AR 42/2003 requires a complete PM inspection following slaughter.</p> <p>The purpose of this document is to outline, in general terms, responsibilities of Meat Inspection Branch (MIB) inspectors and abattoir personnel in relation to PM inspections.</p>	
OBJECTIVE/OUTCOME <p>PM inspections will be conducted, by “duly appointed” inspectors, on all animals, immediately following their slaughter.</p> <p>Note: “Duly appointed” inspectors are defined as individuals appointed under section 2(1) of the MIA.</p> <p>All PM inspections will be done in accordance with the methods prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p>	

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Note: The MIB is responsible for ensuring that all MIB Inspectors have the necessary training, knowledge, skills and ability to conduct a proper PM inspection.

The PM inspection will include all parts of the animal.

Abattoir personnel will assist the MIB Inspector in the conduct of the PM inspection by:

1. Presenting the carcass and its parts in a manner that allows effective and efficient post-mortem inspection.
2. Cleaning, preparing and presenting the carcass and its parts for inspection in a hygienic manner.
3. Assisting with the physical separation and detention of any carcasses and their parts, as required, when lesions are detected during the PM inspection.

Note: MIB Inspectors have the authority and responsibility to take immediate action if abattoir personnel don't provide appropriate assistance during PM inspection procedures.

Actions that may be taken include:

- a) slowing down the rate of slaughter;
- b) temporary suspension of inspection services until the situation has been corrected

MIB Inspectors will provide the abattoir operator with a **MIF - 4 (Certificate of Condemnations)** for all condemnations

Note: The MIF - 4 is an official document that has been approved by the MIB. This document should:

- a) be filled out in its entirety;
- b) be legible;
- c) fully describe the reasons for the condemnation

The abattoir operator will sign and receive a copy of the **MIF - 5 (Inspector's Daily Report)**

Note: The MIF - 5 provides a summary of all condemnations and the code (reason) for the condemnation.

RELATED SECTIONS OF TIPM

08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-A-04 PM Disposition After PM Inspection - All Species
08-B-01 to 08-B-04 PM Procedures in Cattle
08-C-01 to 08-C-04 PM Procedures in Hogs
08-D-01 to 08-D-04 PM Procedures in Sheep, Goats & Deer
08-E-01 to 08-E-04 PM Procedures in Elk & Bison
08-F-01 PM Inspection - Rabbits

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Red Meat Animals - Methods	08-A-02
REGULATORY REFERENCES <i>M-9 RSA 200 Meat Inspection Act</i> (Current to 4/29/2009) Section 5(c) <i>AR 42/2003 Meat Inspection Regulation</i> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE <p>Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>PM examinations are intended to detect lesions, in the carcass, or any of its parts.</p> <p>Note: Ensuring that a proper PM examination is conducted requires attention to detail including the use of recognized examination techniques.</p> <p>The need for a PM inspection is mandated in both the Alberta <i>Meat Inspection Act</i> (MIA) and in the Alberta <i>Meat Inspection Regulation</i> (AR 42/2003).</p> <p>Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.</p> <p>Section 47 of AR 42/2003 requires a complete PM inspection following slaughter.</p> <p>The purpose of this document is to outline PM examination techniques that apply, in principle to all animals including birds.</p>	
OBJECTIVE/OUTCOME <p>Meat Inspection Branch (MIB) Inspectors will follow a routine that ensures that a thorough PM examination is conducted.</p> <p>Note: A systematic approach should be used to ensure that nothing is missed. In general for red meat animals the systematic approach includes examination of the:</p> <ul style="list-style-type: none">a) structures of the head;b) organs (viscera) in the thoracic (chest) cavity;c) viscera in the abdomen;d) carcass <p>Special attention will be paid to examining the lymph nodes in all parts of the body.</p>	

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Note: The lymphatic system is a one way closed circulatory system that allows tissue fluids to be returned to the blood stream. Tissue fluids passing through the lymphatic system have to go through various lymph nodes that act as filters. Any time there is an infection in an area, or region, of the body, the lymph nodes of that area, or region, will show evidence of the infection. The degree of spread of an infection through the lymphatic system is a major factor in determining what should, or shouldn't be condemned.

MIB Inspectors will use the following techniques while conducting a post-mortem examination:

1. Visual examination
2. Palpation
3. Incision
4. Laboratory testing

Visual Examination

All parts of the carcass and internal organs will be observed visually. This simply means that the MIB Inspector looks at everything.

Note: The MIB Inspector needs to follow a set pattern, or sequence, to ensure that everything is looked at. Proper positioning of the internal organs, by abattoir personnel, is very important in ensuring that nothing is missed.

Palpation

Internal organs intended for human consumption will be palpated.

Note: Palpation is defined as physically feeling, or touching, an object.

Palpation will be sufficiently firm to detect deep-seated lesions.

Note: Deep palpation often precludes the need to incise an organ which may affect its sale value

Incision

Certain organs will be incised (cut into) routinely and others will be incised at the discretion of the MIB Inspector.

Note: Incision of the heart is a routine practice during the PM examination of beef cattle. It is done to detect tapeworm cysts that are not always visible on the surface and that are too small to palpate.

Incision is often the only way to determine the cause of a swelling. MIB Inspectors must exercise caution to ensure that incision doesn't cause contamination of the carcass, or other edible organs. A good example of possible contamination would be the opening of an abscess.

Laboratory Examination

It is not always possible to determine the cause of a lesion. Laboratory examination can help with this determination. For example tissue samples could be submitted for microscopic examination. Another example would be the submission of an injection site lesion to determine whether antibiotics are present.

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Note: Determination of the cause is important in determining whether the condition requires condemnation or not.

When further testing is required the carcass and its portions will be detained, under a held tag, until test results come back.

While not listed as specific PM inspection techniques, MIB Inspectors have two other tools at their disposal:

1. Sense of smell
2. Digital cameras for consultation purposes

The first indication of an abnormality may be an abnormal smell (e.g. an abscess).

Regardless of how much experience the MIB Inspector has, things will come up that are unclear. In these instances it is highly recommended that the inspector consult with their Regional Supervisor, Area Manager and/or the Division Veterinarian. Pictures taken with a digital camera are valuable tools for consultation purposes.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition After PM Inspection - All Species
- 08-B-01 PM Inspection - Cattle - Head
- 08-B-02 PM Inspection - Cattle - Thoracic Viscera
- 08-B-03 PM Inspection - Cattle - Abdominal Viscera
- 08-B-04 PM Inspection - Cattle - Carcass
- 08-C-01 PM Inspection - Hogs - Head
- 08-C-02 PM Inspection - Hogs - Thoracic Viscera
- 08-C-03 PM Inspection - Hogs - Abdominal Viscera
- 08-C-04 PM Inspection - Hogs - Carcass
- 08-D-01 PM Inspection - Sheep, Goats & Deer - Head
- 08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
- 08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
- 08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass
- 08-E-01 PM Inspection - Elk & Bison - Head
- 08-E-02 PM Inspection - Elk & Bison - Thoracic Viscera
- 08-E-03 PM Inspection - Elk & Bison - Abdominal Viscera
- 08-E-04 PM Inspection - Elk & Bison - Carcass
- 08-F-01 PM Inspection - Rabbits

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Red Meat Animals - Findings - General	08-A-03
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c)	Initial Release Sept 1, 2009
<u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Page 1 of 9

RATIONALE

Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.

Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.

The **PM examination** is intended to **detect** any **lesions**, in the **carcass**, or any of its parts.

Examination to determine the presence or absence of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.

Note: A proper ante-mortem (before death) inspection is critical in detecting animals affected with disease conditions that may not result in visible changes in the carcass or internal organs.

The need for a PM inspection is mandated in both the Alberta *Meat Inspection Act* (MIA) and in the Alberta *Meat Inspection Regulation* (AR 42/2003).

Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.

Section 47 of AR 42/2003 requires a complete PM inspection following slaughter.

The **purpose** of this document is to **outline**, in general terms, **common abnormalities** encountered by Meat Inspection Branch (MIB) Inspectors.

OBJECTIVE/OUTCOME

All carcasses and viscera, of red meat animals will be closely examined for lesions (abnormalities).

Following is a list of abnormalities commonly seen by MIB Inspectors:

Note: **This listing is not intended to be comprehensive** nor is it intended to provide sufficient information for the reader to perform a PM examination. It is simply intended to provide the reader with some basic understanding about what inspectors are looking for.

For more information the reader is referred to module 6 of the Regulatory Services Division Meat Inspection Manual (MIM). All MIB Inspectors have a complete copy of the MIM and there should be copies of module 6, in the meat inspector's office, at every abattoir.

1. Abscesses

Abscesses are accumulations of debris (commonly referred to as pus). They indicate that the animal is, or was, affected with an infectious agent generally a bacterium.

Note: The type of pus, in an abscess, will vary greatly in color, odor and consistency. This variation is due to differences in the type of infectious bacteria and the length of time the abscess has been present.

The pus, in an abscess, is encapsulated (separated from surrounding tissues) by a layer of fibrous connective tissue. This purpose of the capsule is to prevent further spread of the infection.

Abscesses may be single, or small in number, and confined to one location, or they may be multiple and spread throughout the body.

Note: Abscesses and the surrounding tissues and/or area are not suitable for human consumption. At the very least the abscess itself will be trimmed or the affected area (organ or quarter) will be condemned. If there is evidence of spread throughout the body the carcass and all organs will be condemned.

2. Adhesions

Adhesions are accumulations of fibrous (scar) tissue that have entrapped various internal organs. The intestines are commonly affected with adhesions in animals that have recovered from peritonitis. Lungs may be tied up with adhesions following pleuritis.

Note: Birds have a limited ability to produce fibrous tissue therefore, adhesions are rare in birds.

Fibrous tissue, in well developed adhesions, tends to be white, dry and very tough. In the early stages, when the infection is still active, adhesions are easier to tear apart. At this stage they are wet and usually have a yellow color.

Note: It is important for MIB Inspectors to differentiate mature adhesions from those that still have an active infectious component.

Well developed adhesions indicate that the animal has recovered from the infection thus the carcass is likely suitable.

As a general principle, organs affected with adhesions are condemned.

3. Arthritis

Arthritis is defined as inflammation in the joint. One or more joints, in one or more limbs, may be affected.

Note: It is possible to have inflammation without infection. Physical injury is the cause of non-infectious arthritis.

The decision of whether to condemn, or not, depends on the ability of the MIB Inspector to determine whether infection is present or not.

Note: It is important to make a distinction between infectious and non-infectious inflammation. When infection is present the joint fluid is usually cloudy due to the presence of pus. In non infectious arthritis (caused by injury or degenerative joint disease) there may be an increased amount of joint fluid but it will have a normal clear appearance or at worst it will only contain some blood.

Partial condemnations are common when it is determined that infectious arthritis is confined to one limb regardless of the number of joints affected.

Note: Animals with more than one leg affected are often thin and may be condemned for other reasons such as emaciation.

4. Ascites and Edema

Ascites and edema both refer to accumulations of clear watery fluid. In ascites the fluid is in the abdominal cavity. In the case of edema the fluid is in the muscles, or other affected organs.

Note: Ascites is very common in broiler chickens that have been grown too quickly. It is an indication of right sided heart failure. Ascites can also occur in red meat animals.

Edema can be localized, or generalized. The most common cause of generalized edema is heart failure. Localized edema is usually due to local circulation problems (in the blood, or lymph) or secondary to an inflammatory reaction.

Note: Portions of the carcass affected with edema are condemned. Broilers with ascites can be approved for human consumption providing there are no systemic effects including emaciation, cyanosis (bluish discoloration of the carcass) or generalized edema in other tissues.

5. Atrophy

Atrophy is defined as a wasted, or shrunken, condition. Nerve paralysis leading to the inability of the animal to use a leg is the most usual cause of muscular atrophy.

Note: Atrophy is not considered to be a food safety issue.

6. Bruising

Bruises are caused by injuries that cause bleeding into the tissues. As the blood pigment (hemoglobin) breaks down, over time, the color of the bruise will change from dark red, to green, to yellow.

Note: Bruising is not hazardous to human health but affected tissues don't have a good appearance so they are trimmed out. MIB Inspectors have the authority to condemn the entire carcass when bruising is severe and widespread.

7. Cellulitis

Cellulitis is defined as the spreading of inflammatory material into the tissues through the spaces between the cells. Basically cellulitis occurs when the animal is unable to form the fibrous tissue wall of an abscess.

Note: There are certain bacteria (e.g. “Group A” Streptococci and some strains of Staphylococci) that can block the formation of fibrous tissue thus allowing the infection to spread unchecked.

In red meat animals cellulitis develops very quickly and is life threatening. For this reason this condition is not seen very often at an abattoir.

Note: “Flesh Eating Disease”, in humans, is an example of a severe form of cellulitis.

8. Cirrhosis

Technically cirrhosis is hardening of a soft tissue organ due to a generalized accumulation of scar (fibrous) tissue.

Note: Cirrhosis is most commonly seen in the liver but a disease condition, in cattle, called wooden tongue is a form of cirrhosis. The affected organ or tissue is condemned. In the case of cirrhosis of the liver the carcass could be condemned if there is evidence of liver failure (jaundice).

9. Contamination

Contamination simply refers to contact between edible portions of the carcass and something that is inherently dirty.

Note: The implementation of sound dressing procedures is very important in reducing the chance of contamination.

Common potential sources of contamination include:

- a) the animal (particularly the hide and intestinal tract);
- b) unsanitary surfaces such as walls, floors, etc;
- c) unsanitary personnel;
- d) unsanitary equipment;
- e) the presence of rodents and other animals;
- f) contact with non-potable water.

Note: All contaminated portions must be removed and the remaining portions must be thoroughly washed. The carcass may be condemned if, in the opinion of a MIB Inspector, the contamination is so severe that it cannot be completely removed by trimming. Contamination due to exposure to non-potable water is handled on a case by case basis and will involve the Area Manager and possibly a Food Safety Specialist.

10. Cysts

Cysts are defined as any closed cavity, or sac, that contains fluid.

Note: Cysts can occur in any part of the body.

The most common cysts seen by MIB Inspectors are tapeworm cysts (cysticerci) and renal (kidney) cysts.

Note: Other than for tapeworm cysts, cysts tend to be localized. Most are non-infectious thus only the organ, or affected portion, is removed and condemned.

11. Emaciation

Emaciation is the technical term for an extremely wasted body condition.

Note: **Animals can be thin without being emaciated.** To diagnose emaciation the inspector needs to see “Serous Atrophy” (fat with a watery appearance). This is usually seen in the fat on the surface of the heart and around the kidneys because these are the last places that fat will disappear from as emaciation progresses.

In addition to serous atrophy, of the fat, an emaciated animal will usually have accumulations of watery fluid in the muscles.

Emaciated animals are condemned but animals that are simply thin should not be condemned.

Note: **If there is any normal looking fat on the surface of the heart or around the kidney the animal is not emaciated.**

12. Emphysema

Emphysema is defined as the presence of gas bubbles in the tissues.

Note: This condition is most common in the lungs, particularly of cattle. When lungs are affected with emphysema they won't collapse when the chest is opened. Emphysema can occur in other tissues in certain infections where the bacteria produce gas (e.g. blackleg). Occasionally emphysema of the intestinal tract is seen in pigs. The cause of intestinal emphysema is not known. Other than for blackleg emphysema is not a food safety concern and only the affected organs, or tissues are condemned.

13. Fibrosis

Fibrosis refers to the replacement of normal tissue by fibrous (scar) tissue. It is the end result of a chronic (long standing) inflammatory and repair process.

Note: The formation of scar tissue is part of the healing process. By the time the normal tissue has been replaced, by scar tissue, the agent that caused the problem is long gone. For this reason areas of scarring are generally just trimmed out.

Cirrhosis and adhesions are also caused by the presence of scar tissue. In cirrhosis the scarring is generalized, throughout the organ, rather than localized. The chest and abdominal cavities are the most common location where adhesions are seen.

14. Granulomas

Granuloma is a non-specific term which refers to a chronic inflammatory reaction.

Note: Granulomas can occur in any tissue or organ

Granulomas generally have a fleshy appearance. In some instances this makes them difficult to differentiate from tumors.

Note: Examination of the tissue under the microscope may be the only way to tell the difference between a granuloma and a tumor.

Disposition depends on whether the granuloma is still active.

Note: Active granulomas may have any of the following signs:

- a) congestion (increased blood flow in the area);
- b) hemorrhage (bleeding into the tissues);
- c) edema (accumulations of watery fluid);
- d) enlargement of lymph nodes draining the affected area

When it has been determined that a granuloma is active the affected lymph nodes and tissues in that node's drainage area are condemned.

15. Hemorrhage and Hematomas

Hemorrhages are accumulations of **un-clotted blood** in the tissues, or body cavities. **Hematomas** are accumulations of **clotted blood**.

Note: Hemorrhages tend to turn into hematomas, over time, and then they become a bruise.

Most hemorrhages, or hematomas, are localized conditions thus they only require trimming.

Note: Poisoning of cattle, with moldy sweet clover, is an exception to this general statement. In this condition hemorrhages and hematomas occur throughout the body.

Very small pinpoint hemorrhages in various organs and tissues may indicate the presence of a septicemia (generalized blood poisoning).

Note: Very small pinpoint hemorrhages are called petechial hemorrhages. Ecchymotic hemorrhages are larger but still not large enough to result in accumulations of fluid (blood) in the tissues. They are best described as blotchy hemorrhages.

Localized petechial, or ecchymotic, hemorrhages are unlikely to lead to condemnation of tissues other than the affected area but if there are indications that they were caused by a septicemia the carcass will be condemned.

Note: When septicemia is present the hemorrhages will have a wide distribution throughout the body.

16. Jaundice

Jaundice (also called icterus) refers to a yellow discoloration of body tissues and organs. Liver failure is the main cause of jaundice.

Note: In order to make a diagnosis of jaundice it is necessary to have yellow discoloration throughout the body. The yellow discoloration is most easily detected in light colored tissues such as the whites of the eye. The MIB Inspector must be careful to differentiate yellow fat from jaundice. Animals with yellow fat will not have discoloration of other tissues.

Carcasses are condemned for jaundice if there:

- a) is severe yellow discoloration of the tissues;
- b) are degenerative changes in the liver, kidney, or spleen;
- c) are other systemic changes in the body.

Note: Carcasses with mild jaundice can be held for 24 hours. If the jaundice disappears, in that time, it can be passed otherwise it is condemned.

17. Peritonitis and Pleuritis

These terms refer to inflammatory reactions in the abdominal and thoracic (chest) cavities respectively.

Note: Peritonitis and pleuritis can be acute (recent and active infection) or chronic (of long duration).

Any bacterium agent that gains access to the abdominal, or thoracic, cavity will cause peritonitis, or pleuritis, respectively.

Note: Common causes of peritonitis include:

- a) septicemias;
- b) intestinal ruptures;
- c) wounds to the abdomen;
- d) extension of infection from abdominal organs or lymph nodes

Common causes of pleuritis include:

- a) extension of pneumonia;
- b) certain septicemias;
- c) wounds to the chest wall

Acute active peritonitis, or pleuritis, is usually characterized by what is called a fibrinous reaction. Variable amounts of clotted fibrin, or jelly like material, will be present in the affected body cavity. Generally this material is yellow. There will be areas of congestion and hemorrhage.

Note: The MIB Inspector has to determine whether the condition is active, or not. In active peritonitis, or pleuritis, the lesions will be wet and yellow and there are usually areas of congestion, or hemorrhage. In chronic peritonitis the adhesions will be dry and will form white shiny bands, or sheets of scar tissue.

The carcass is condemned:

- a) when the lesions are acute and extensive, or
- b) there is emaciation, or
- c) other systemic signs are present.

18. Tumors

Tumors are abnormal growths of tissue commonly referred to as cancers.

Note: There are many different types of tumors. They all have different causes and physical characteristics.

The most common tumors, seen by MIB Inspectors include cancer eye (bovine squamous cell carcinoma in cattle), hemangiomas (blood vessel tumors) lymphosarcomas (tumors of the lymph nodes) and melanomas (tumors containing large amounts of black pigment). Leucosis and Marek's disease are the most commonly encountered tumors in poultry.

Tumors may be malignant (grow rapidly and spread throughout the body) or benign (localized and generally not life threatening).

Note: Malignant tumors are capable of gaining access to the blood stream, or lymph channels. Once they gain access they are transported to other parts of the body where they will grow and produce secondary tumors. **This process of spread is called metastasis.**

Tumors are recognized as abnormal growths in any organ, tissue, or body cavity. Most, but not all, tumors are quite "fleshy".

Note: Fast growing malignant tumors often contain areas of hemorrhage, necrosis (dead tissue) and accumulations of fluid. Often they are poorly differentiated from the surrounding normal tissues because they tend to grow by infiltration (pushing into the spaces between the normal cells). Benign tumors, on the other hand, are clearly distinct from the surrounding normal tissue because they do not infiltrate.

For any particular tumor the suitability of the carcass is based on the following criteria:

- a) is the tumor benign or malignant;
- b) has metastasis (spread to other organs) occurred;
- c) does the carcass exhibit other systemic changes such as emaciation, edema, ascites, etc

Note: The carcass is always condemned if there is evidence of:

- i) metastasis beyond regional lymph nodes, or into other organs, or
- ii) other systemic changes are present.

If the tumor is determined to be benign and localized only the affected tissue is trimmed and condemned.

19. Uremia

Uremia is defined as the presence of excessive amounts of chemicals (primarily urea) in the blood. These chemicals come from the metabolism (breakdown) of protein.

Note: The presence of uremia indicates failure of the urinary system. A number of diseases of the urinary tract that can cause uremia.

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The only PM sign, of uremia, is the presence of a urine-like odor in the carcass.

Note: Depending on the cause there may also be abnormalities in the urinary system that can be seen by the MIB Inspector.

Carcasses affected with uremia are condemned.

Note: If the MIB Inspector is suspicious that uremia might be present (e.g. lesions in the urinary system) but there is no uremic smell to the carcass the eyeball can be sent to the laboratory for a BUN (Blood Urea Nitrogen) test. If the BUN is elevated the carcass will be condemned.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-B-01 PM Inspection - Cattle - Head
- 08-B-02 PM Inspection - Cattle - Thoracic Viscera
- 08-B-03 PM Inspection - Cattle - Abdominal Viscera
- 08-B-04 PM Inspection - Cattle - Carcass
- 08-C-01 PM Inspection - Hogs - Head
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- 08-D-01 PM Inspection - Sheep, Goats & Deer - Head
- 08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
- 08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
- 08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass
- 08-E-01 PM Inspection - Elk & Bison - Head
- 08-E-02 PM Inspection - Elk & Bison - Thoracic Viscera
- 08-E-03 PM Inspection - Elk & Bison - Abdominal Viscera
- 08-E-04 PM Inspection - Elk & Bison - Carcass
- 08-F-01 PM Inspection - Rabbits

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: Disposition after PM Inspection - All Species	08-A-04
REGULATORY REFERENCE <i>AR 42/2003 Meat Inspection Regulation</i> (Consolidated to 112/2009) Section 54	Initial Release Sept 1, 2009 Page 1 of 2
RATIONALE <p>Upon completion of the PM inspection, which is mandated by sections 47 & 67 of AR 42/2003, for red meat animals and poultry respectively, a <u>determination</u> has to be made about <u>what to do with the carcass</u>.</p> <p>To decide on the proper disposition the Meat Inspection Branch (MIB) Inspector has to be able to determine what condition is present and then check his references to determine what should be done.</p> <p>Most disease conditions lead to visible changes (lesions) in the carcass of the affected animal that give the MIB some indication of what, if anything, is wrong with the carcass, or any of its organs.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>The PM examination is intended to detect any lesions, in the carcass, or any of its parts. This is why the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: A proper ante-mortem (before death) inspection is critical to detect disease conditions that may not show any PM lesions.</p> <p>The purpose of this document is to highlight the options that a MIB Inspector has regarding the disposition of the carcass upon completion of the PM examination.</p>	
OBJECTIVE/OUTCOME <p>All disposition decisions will be made based on the “Disposition Instructions” that are printed in the Regulatory Services Division (RSD) Manual of Directives and Procedures.</p> <p>Note: “Disposition Instructions” are issued in accordance with section 54(2) of AR 42/2003 which states, “The Director may issue instructions on how animals that are affected with diseases or conditions dealt with in those instructions are to be and may be dealt with.”</p> <p>Module 6 of the Meat Inspection Manual (MIM) published by the MIB Branch of the RSD also has disposition recommendations for each disease condition that is described. It is important to recognize that in the case of a discrepancy between the “Disposition Instruction” and the MIM the “Disposition Instruction” is the final authority.</p> <p>Following completion of the PM Inspection the MIB Inspector will exercise one of the following options:</p> <ol style="list-style-type: none">1. Approve the entire carcass and all of its parts for human consumption.	

TIPM – 08-A-04 Page 2 of 2 – OBJECTIVE/OUTCOME (continued)

2. Condemn portions of the carcass.
3. Condemn the entire carcass and all organs.

Note: Condemned material may be suitable for use in animal food, research and other purposes providing adequate controls are in place to ensure that edible product doesn't come into contact with condemned material or that condemned material does not re-enter the human food chain illegally.

Generally condemned materials would not be suitable for pharmaceutical purposes.

4. Place a "held" tag on the carcass and all edible viscera until a disposition decision can be made.

Note: This option is exercised when it is necessary to send samples out for laboratory testing or in cases when the inspector has to consult with another party (e.g. the Division Veterinarian).

All diseased material will be condemned.

Condemned carcasses, or parts of carcasses will be identified and handled in a manner that avoids contamination of any equipment, or facilities, and any meat, or meat products intended for human consumption.

Note: All condemned materials must be disposed of in a manner that ensures that they will not be used for human consumption.

Held carcasses, or their parts, will remain under the control and supervision of a MIB Inspector until they are either approved, or disposed of in a proper manner.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General
08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-B-01 PM Inspection - Cattle - Head
08-B-02 PM Inspection - Cattle - Thoracic Viscera
08-B-03 PM Inspection - Cattle - Abdominal Viscera
08-B-04 PM Inspection - Cattle - Carcass
08-C-01 PM Inspection - Hogs - Head
08-C-02 PM Inspection - Hogs - Thoracic Viscera
08-C-03 PM Inspection - Hogs - Abdominal Viscera
08-C-04 PM Inspection - Hogs - Carcass
08-D-01 PM Inspection - Sheep, Goats & Deer - Head
08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass
08-E-01 to 08-E-04 PM Inspection - Elk & Bison
08-F-01 PM Inspection - Rabbits
08-G-01 PM Inspection - Poultry - General
08-G-02 PM Inspection - Poultry - Methods
08-G-03 PM Inspection - Poultry - Findings - General
08-H-01 PM Inspection - Ratities

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Cattle - Head	08-B-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all cattle slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed during the PM examination of the <u>head</u> of cattle.	
OBJECTIVE/OUTCOME Cattle heads will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the head has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the head in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) skinning the head;b) removing the horns;c) cleaning the head;d) placing the head on the inspection rack The head will be presented with all lymph nodes in situ (in place) and exposed. Note: Salvage of the head meat and tongue will not be allowed unless the head is properly presented for the PM inspection.	

TIPM – 08-B-01 Page 2 of 3 – OBJECTIVE/OUTCOME (continued)

A system will be in place to ensure that the head can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act*, which requires that every portion of a carcass that is unfit for food must be condemned.

The head inspection should be completed before the carcass has gone past the final inspection station.

MIB Inspectors will:

1. Determine the age of the animal by reviewing reliable birth date documentation or by examining the lower incisor teeth.

Note: Any animal that is deemed to be over 30 months of age (any portion of one of the second set of permanent incisors has broken through the gum line) has to be marked for SRM (Specified Risk Material) removal.

2. Visually observe the head to ensure that it is free of any hair, hide, horns, ingesta or any other type of contamination.

Note: Common areas of contamination include the base of the skull, the area where the horns were attached and inside the mouth.

The head should be held for trimming and re-inspection if there is any contamination or other dressing defects.

The eyes should be closely examined for any evidence of cancer eye.

Unless the cheek meat is removed on the kill floor the tonsils should be removed under the supervision of a MIB Inspector.

3. Incise (cut) the outer and inner masseter (cheek) muscles.

Note: This is done primarily to check for *Cysticercus bovis*. *C. bovis* is the intermediate form of the beef tapeworm which affects humans. Incision, of these muscles, will also occasionally detect other conditions. The incisions should be parallel to the mandible (jawbone) and they should go right through the muscles.

4. Incise the following lymph nodes.

- a) parotid;
- b) submaxillary (mandibular);
- c) retropharyngeal

Note: These nodes should be observed for any evidence of edema, enlargement, abscesses, grittiness, or tumors.

5. Visually examine, palpate and incise (if necessary) the tongue.

Note: This is done to check for abscesses, actinobacillosis (wooden tongue) and other abnormalities. Localized conditions such as scars, sores and erosions are trimmed.

TIPM – 08-B-01 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

6. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General
08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-A-04 PM Disposition after PM Inspection - All Species
08-B-02 PM Inspection - Cattle - Thoracic Viscera
08-B-03 PM Inspection - Cattle - Abdominal Viscera
08-B-04 PM Inspection - Cattle - Carcass
10-A-04 SRM Removal & Control Program

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Cattle - Thoracic Viscera	08-B-02
REGULATORY REFERENCES <i>M-9 RSA 200 Meat Inspection Act</i> (Current to 4/29/2009) Sections 5 (c) & 6 <i>AR 42/2003 Meat Inspection Regulation</i> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all cattle slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper PM examination of the <u>thoracic viscera</u> of cattle.	
OBJECTIVE/OUTCOME The thoracic viscera, of cattle, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the thoracic in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removal of the pluck (trachea, lungs and heart);b) placing the pluck on the examination table, or tray A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Visually examine the exposed surfaces of the lungs then palpate them and incise (cut) them if indicated.

Note: The lungs are palpated to detect any deep lesions such as abscesses, tumors, chronic pneumonia, etc. If any lesions are detected, by palpation, the lungs are incised.

Common abnormalities observed in the lungs include:

a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

b) Emphysema

Note: Emphysema is an accumulation of air within the tissue of the lungs. It appears as small bubbles all over the lung. Affected lungs will not collapse properly.

c) Pneumonia

Note: Most cases of pneumonia are caused by bacterial infections that have entered the lung by the airways. This type of pneumonia (referred to as bronco-pneumonia because it comes in through the bronchi) results in consolidation of the lungs to the point where the lung tissue may be as firm as the liver. Usually the front and lower portions of the lung are affected in this type of pneumonia.

Another form of pneumonia is embolic pneumonia. This name is given because the infection has come to the lungs as emboli (clumps of bacteria) in the blood stream. With embolic pneumonia there will be lots of small abscesses randomly scattered throughout the lung.

A third type of pneumonia is interstitial pneumonia. In interstitial pneumonia the lungs develop a rubbery consistency and they are uniformly affected throughout. Interstitial pneumonias are caused by virus infections.

d) Pleuritis

Note: Pleuritis is an inflammatory reaction in the pleura. The smooth shiny tissue that covers the lungs and inner chest wall is called the pleura.

e) Pleural adhesions

Note: Pleural adhesions are due to the development of scar tissue in the healing process of pleuritis.

f) Lymphomas

Note: Lymphoma is a tumor (cancer) of the lymphatic system that commonly metastasizes (spreads) to the lung.

g) Lungworms

Note: Lungworms, when present will be found in the trachea usually at the point where the trachea divides into the left and right bronchi. They are slender worms approximately 1 to 1½ inches in length.

2. Examine the left and right bronchial, cranial and caudal mediastinal lymph nodes.

Note: These nodes should be incised 2 or 3 times.

3. Examine the heart visually and by incision. The exterior and interior surfaces, of the heart, including the heart valves should be observed visually.

Note: There are two options for incising the heart. The first is to make an incision that passes through the wall between the left and right ventricles. This allows observation of all of the heart valves. The second option is to evert the heart and make 3 to 5 shallow cuts in the musculature. These incisions should not extend all the way through to the outer surface of the heart. If there is any suspicion that the animal may be affected with *Cysticercus bovis*, (beef tapeworm cysts) more incisions can be made.

Abnormalities that may be seen in the heart include:

a) Pericarditis

Note: Pericarditis refers to inflammation of the heart. In cattle the most common cause is penetration of the heart by a nail in “Hardware Disease”. Pericarditis can also develop as an extension of pleuritis. In most cases there will be heavy accumulations of yellow clotted fibrin.

b) *Cysticercus bovis*

Note: *Cysticercus bovis* is the intermediate form of a tape worm called *Taenia saginata*. This tape worm is commonly called the beef tape worm because it develops after humans eat beef containing the cysticerci. *Cysticercus bovis* will not develop in any other species other than cattle. When present this parasite is most likely going to be detected in the heart, masseter muscles, tongue and diaphragm. Although this condition is very rare it is still considered to be a dangerous parasite of humans.

c) Serous atrophy of fat

Note: Serous atrophy of fat refers to a condition when the fat has a watery and semi gelatinous appearance. It occurs when the animal is emaciated. Serous atrophy is most commonly seen in the fat around the heart because that is one of the last places to have any fat when an animal is starving.

TIPM – 08-B-02 Page 4 of 4 – OBJECTIVE/OUTCOME (continued)

d) Eosinophilic myositis

Note: This is a rare condition that occurs primarily in cattle. The cause has not been established. It appears as well defined areas of greenish, to grey green, discoloration of the muscle tissue in the heart. It can also affect other muscles.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report)

Note: These are official MIB documents. They must be:

- a) filled out completely;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-B-01 PM Inspection - Cattle - Head
- 08-B-03 PM Inspection - Cattle - Abdominal Viscera
- 08-B-04 PM Inspection - Cattle - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Cattle - Abdominal Viscera	08-B-03
REGULATORY REFERENCE <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 5
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all cattle slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper PM examination of the <u>abdominal viscera</u> of cattle.	
OBJECTIVE/OUTCOME The abdominal viscera, of cattle, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the abdominal viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the abdominal viscera in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removing the viscera from the carcass;b) placing the viscera on the examination table A system will be in place to ensure that the viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Give the liver a visual inspection and thoroughly palpate it. The hepatic lymph nodes should be examined and incised 2-3 times. The bile ducts should be opened longitudinally to observe for liver flukes.

Note: The liver shouldn't be incised unless a deep lesion is palpated.

Abnormalities observed in the liver include:

a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule. Liver abscesses are very common in grain fattened beef cattle. In some groups of cattle 30 to 40% of the livers may be affected.

b) Telangiectasis

Note: Telangiectasis is an abnormality of blood vessels in the liver. On microscopic examination the lesions resemble a tumor but this is not a cancerous condition. The cause is unknown. It is often seen in association with liver abscesses and liver flukes.

Characteristically, affected livers have reddish purple, to blue-black, spots that vary in size from pinpoint, to several centimeters.

c) Sawdust Liver

Note: Sawdust liver is a meat inspection term that refers to a condition where pinpoint areas of necrosis (dead tissue) are present throughout the liver. This condition is caused by localized infections caused by bacteria from the intestine.

Lesions consist of multiple, small (1-3 mm) irregular, pale spots throughout the liver. Someone thought that the lesions looked like sawdust had been sprinkled on the liver thus the name.

d) Adhesions

Note: Similar to other abdominal organs the liver can be caught up in adhesions due to the formation of scar tissue from peritonitis.

e) Melanosis

Note: Melanosis is a condition caused by an abnormal accumulation of melanocytes. Melanocytes are connective tissue cells which contain a black pigment. They can accumulate in various body tissues including the liver. Melanosis is recognized by the presence of black spots, or streaks, in otherwise normal tissue. The cause is unknown.

f) Liver Flukes

Note: Liver flukes are parasitic flatworms. Two types have been reported in Alberta. They leave dark tracts throughout the liver due to their migration in the liver.

g) Carotenosis

Note: Carotenosis is another term for fatty infiltration. In this condition the fat contains red and yellow pigments similar to carotene. These become evident when there is excessive fat in tissues.

Fatty livers develop, in cattle, when their energy needs are greater than what can be provided in the feed. This results in the movement of fat from other areas in the body leading to the accumulation of excessive fat in the liver. Fatty livers are pale to yellow in color and have a greasy appearance on the cut surface.

h) Chronic Passive Congestion

Note: "Chronic Passive Congestion" refers to blood backing up into the liver due to poor circulation. It is generally caused by right sided heart failure. Because of certain peculiarities of the circulation, of blood, through the liver some parts of the individual liver lobules are more congested than other portions. The reticulated pattern of the lesion gives an appearance that has been likened to that of nutmeg thus the term nutmeg liver.

2. Examine the intestines, omentum, mesentery and mesenteric lymph nodes.

Note: For a proper examination the intestines should be spread out. Usually it is not necessary to incise the mesenteric lymph nodes. They should be incised if they are enlarged or if there is any possibility that the animal has tuberculosis. The omentum, mesentery and any other fatty tissue that is going to be used for human consumption must be free of contamination.

3. Visually examine the spleen and incise it if there are any abnormalities.

4. Visually examine the four compartments of the stomach (reticulum, rumen, omasum and abomasum).

Note: There may be evidence of localized peritonitis, or abscess formation, if the reticulum has been penetrated by a nail, or piece of wire.

5. Examine the kidneys.

Note: The PM examination of the kidneys may be done with the kidneys in the carcass or on the viscera table. In either instance they must be fully exposed for the inspector.

Common abnormalities observed in the kidney include:

a) Cysts

Note: Cysts are closed cavities, or sacs, that contain fluid. They can occur in any part of the body. They are relatively common in kidneys where they are believed to be caused by a developmental defect in the urinary tubules. When present they tend to get larger as the animal gets older.

b) Pyelonephritis

Note: Pyelonephritis is the technical term for kidney infections where the infection has gained entry to the kidney by migrating up the urinary tract. In this condition the kidneys are usually enlarged and the pelvis, of the kidney, is usually full of pus. Similar material is usually seen in the ureters and/or the bladder. Pyelonephritis tends to be more common in older cows.

c) Infarcts

Note: An infarct is an area of tissue that has died because its blood supply has been cut off. Because of the anatomy of the kidney blockage of small arteries causes death of a cone shaped area of tissue with the base of the cone on the outer surface of the kidney.

Most infarcts are pale and slightly depressed. An early infarct may be swollen and red. When infarcts are seen the inspector should closely examine the valves on the left side of the heart for any evidence of any growths on the heart valves (valvular endocarditis caused by bacterial infection). Infarcts occur when small pieces of these growths (emboli) break off then lodge in a smaller artery in the kidney.

6. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

When **localized** lesions are detected in the abdominal viscera and there is no evidence of any adverse effects on the wholesomeness of the rest of the carcass **only the affected organ or tissue is condemned.**

Condemnation, of the carcass and all organs, is justified when liver lesions are accompanied by jaundice and kidney lesions are accompanied by uremia.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-B-01 PM Inspection - Cattle - Head
- 08-B-02 PM Inspection - Cattle - Thoracic Viscera
- 08-B-04 PM Inspection - Cattle - Carcass
- 10-A-04 SRM Removal & Control Program

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Cattle - Carcass	08-B-04
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 5
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all cattle slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper PM examination of cattle carcasses .	
OBJECTIVE/OUTCOME Cattle carcasses will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the carcass has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the carcass in a manner that makes it suitable for inspection. Note: Proper presentation includes: <ol style="list-style-type: none">a) removing the viscera (internal organs);b) splitting the carcass;c) presenting the carcass before final trimming and/or washing A system will be in place to ensure that the carcass can be matched up with the head and all internal organs until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Conduct a visual inspection of the entire carcass.

Note: This inspection includes the:

- a) joints;
- b) outer muscular surfaces;
- c) diaphragm;
- d) peritoneum;
- e) pleura;
- f) neck

2. Palpate and incise (if deemed necessary) any observed abnormalities.

Examples of conditions seen on the PM examination of cattle carcasses include:

- a) Arthritis

Note: Arthritis is defined as inflammation of a joint. One or more joints, in one or more limbs may be affected. Affected joints will be swollen. Arthritis may be infectious or non-infectious. Infectious arthritis will cause inflammatory reactions in the lymph nodes of the affected limb. When there are changes in the lymph nodes the entire quarter will be condemned. If the condition is deemed to be non-infectious only the affected joint needs to be removed.

- b) Abscesses

Note: Abscesses are accumulations of pus enclosed in a fibrous tissue capsule. Pus can vary greatly in color, odor and consistency depending on the type of bacteria present and the age of the abscess. Abscesses and surrounding tissues must be removed from the carcass. The carcass, or individual quarters, may be condemned in the case of multiple, or severe, abscesses, or where there are inflammatory changes in the lymph nodes draining that area of the carcass.

- c) Cysticercosis

Note: *Cysticercus bovis* is the intermediate form of a tape worm called *Taenia saginata*. This tape worm is commonly called the beef tape worm because it develops after humans eat beef containing the cysticerci. *Cysticercus bovis* only occurs in cattle. When present, it will most likely be detected in the heart, masseter (cheek) muscles or tongue. The diaphragm is also a common site but it can also be seen in any muscle of the body. Although no longer common it is still considered to be a dangerous parasite of humans.

d) Contamination

Note: Contamination is the presence of foreign material on the surface of the carcass. Most visible contamination is due to poor dressing procedures. Contaminated areas of the carcass must be trimmed in accordance with the directions of a MIB Inspector then the remainder of the carcass must be thoroughly washed.

The carcass, or portions of it, will be condemned if, in the judgment of the inspector, the contamination is so severe that it cannot be completely removed by trimming.

e) Adhesions

Note: Adhesions are accumulations of fibrous (scar) tissue that form in animals that have recovered from pleuritis, or peritonitis. In the carcass adhesions will be seen on the peritoneum, or pleura, which line the abdominal and chest walls respectively.

f) Jaundice

Note: Jaundice (also called icterus) refers to a yellow discoloration of the carcass. Liver disease and failure is the main cause of jaundice.

Carcasses are condemned for jaundice if there is severe yellow discoloration, or if there are other systemic changes in any of the organs. Carcasses that are only mildly affected can be held for 24 hours. If the jaundice disappears, in that time, the carcass can be passed otherwise it is condemned.

g) Bruising

Note: Bruises develop following injuries that cause bleeding into the muscles. With time the blood pigment (hemoglobin) breaks down. As this occurs the color of the bruise will change from dark red, to green, to yellow. Bruises are not hazardous to human health but affected tissues don't appear good so they are trimmed out. Inspectors have the authority to condemn the entire carcass when bruising is severe and widespread.

h) Warbles

Note: Warbles are the larval form of two different types of flies. The two types, which only occur in cattle, are called *Hypoderma bovis* and *Hypoderma lineatum*. When present they will be found in the back. They are located in a cyst like structure which contains a cloudy, yellow fluid. Their appearance, in the back, is seasonal. They are only seen in late winter. Usually they are only present for a month.

i) Melanosis

Note: Melanosis is a condition caused by an abnormal accumulation of melanocytes. Melanocytes are connective tissue cells which contain a black pigment. They can accumulate in any tissues of the body including the muscles and bones of the carcass. Melanosis is recognized by the presence of black spots, or streaks, in otherwise normal tissue. The cause is unknown.

j) Injection Sites

Note: The muscles of the rump and neck area should be closely examined for any evidence of injection site lesions. These will appear as small, or large, localized areas of necrosis and discoloration of muscle tissue. The severity of the lesion will vary with what was injected. Fresh injection sites usually have some hemorrhages in them.

The carcass must be held when fresh injection sites are sent to the laboratory for residue testing.

If there is any doubt about whether an injection site is fresh or not it should be handled as if it were a fresh lesion.

k) Eosinophilic Myositis

Note: This is a rare condition that occurs primarily in cattle. The cause has not been established. Lesions appear as well defined areas of greenish, to grey green, discoloration in the muscles. It may also be seen in the heart.

l) Xanthosis

Note: Xanthosis is a condition where abnormal amounts of yellow-brown, to bronze, pigments accumulate in the skeletal muscle. The cause of this condition, which only occurs in older animals, is unknown. Affected muscle will have a brown discoloration. This condition can also affect the heart, kidneys and adrenal glands.

m) Emaciation (cachexia)

Note: Emaciation is the technical term for an extremely wasted body condition. Animals can be thin without being emaciated. It is important for the MIB Inspector to differentiate between emaciation and thinness. If there is any normal looking fat on the surface of the heart, or around the kidney, the animal is not emaciated. Emaciated animals are condemned, thin ones are not.

n) Lymphosarcoma

Note: Lymphosarcomas are a common malignant neoplasm (cancer) of the lymphatic system, most common in cattle. Carcass lymph nodes may be enlarged. Tumors can also appear in the muscles of the carcass.

o) Steatosis

Note: Steatosis is a form of “fatty infiltration”. In this condition large quantities of muscle are replaced by fatty tissue. The cause of this condition, which only occurs in cattle, is unknown. This condition does not make the carcass unsuitable for human consumption but it is not aesthetically pleasing.

p) Edema

Note: Edema refers to the accumulation of clear watery fluid in the muscles of the carcass. Edema can be localized, or generalized. The most common cause of generalized edema is heart failure. Localized edema is usually due to local circulation problems (in the blood, or lymph) or secondary to an inflammatory reaction. Portions of the carcass affected with edema are condemned.

3. Remove the entire spinal cord from all carcasses.
4. Keep **control** of **all carcasses, or parts of carcasses, that are “held” for whatever reason**, following the PM examination **until the final disposition has been determined**.
5. Identify all carcasses, or portions thereof, that are condemned so that they will be handled in a manner that ensures that contamination of equipment, meat, or meat products, from other carcasses, does not occur.

Note: No part of a condemned carcass can be used for human consumption.

6. Ensure that the thoracic and lumbar vertebrae are removed from all animals that are over thirty months of age.

Note: The vertebrae are removed to ensure removal of clusters of nerve cells called the dorsal root ganglia. Removal must be done in accordance with SRM removal procedures.

7. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector’s Daily Report)

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General
08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-A-04 PM Disposition after PM Inspection - All Species
08-B-01 PM Inspection - Cattle - Head
08-B-02 PM Inspection - Cattle - Thoracic Viscera
08-B-03 PM Inspection - Cattle - Abdominal Viscera
10-A-04 SRM Removal & Control Program

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Hogs - Head	08-C-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 2
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all hogs slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper PM examination of the head of pigs.	
OBJECTIVE/OUTCOME All pig heads will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the head has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the head in a manner that makes it suitable for inspection. Note: In general this preparation includes ensuring that the head is: <ol style="list-style-type: none">a) clean;b) free from hair, ingesta, or other contaminants. The head will be presented with all lymph nodes in situ (in place) and exposed. Note: Salvage of the head meat and tongue will not be allowed unless the head is properly presented for the PM inspection. <u>Heads not properly presented will be condemned, by the inspector, or skinned on the kill floor.</u>	

TIPM – 08-C-01 Page 2 of 2 – OBJECTIVE/OUTCOME (continued)

A system will be in place to ensure that the head can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act* which requires that every portion of a carcass that is unfit for food must be condemned.

The head inspection should be completed before the carcass has gone past the final inspection station.

MIB Inspectors will:

1. Conduct a visual examination of the inner and outer surfaces of the head.

Note: The inspector will be looking for evidence of contamination as well as for nasal discharges, ear mites, dental and cheek abnormalities and conditions of the eye.

2. Observe and incise the mandibular (sub-maxillary) lymph nodes.

Note: Granulomas are common in the sub-maxillary nodes of pigs. They are chronic inflammatory reactions caused by fungal and yeast infections, foreign bodies, and certain bacterial infections including avian tuberculosis. They appear as fleshy lumps which may, or may not be open to the surface.

They used to be common in free ranging pigs that were allowed to feed on dead poultry that were affected with avian tuberculosis.

3. Visually examine, palpate and incise (if necessary) the tongue.

Note: This is done to check for abscesses, actinobacillosis (wooden tongue) and other abnormalities. Localized conditions such as scars, sores and erosions are trimmed.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report)

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-C-02 PM Inspection - Hogs - Thoracic Viscera
- 08-C-03 PM Inspection - Hogs - Abdominal Viscera
- 08-C-04 PM Inspection - Hogs - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Pigs - Thoracic Viscera	08-C-02
REGULATORY REFERENCE <u>M-9 RSA 200 <i>Meat Inspection Act</i> (Current to 4/29/2009)</u> Sections 5(c) & 6 <u>AR 42/2003 <i>Meat Inspection Regulation</i> (Consolidated to 112/2009)</u> Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all hogs slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the <u>thoracic viscera</u> of pigs.	
OBJECTIVE/OUTCOME The thoracic viscera, of hogs, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the thoracic in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removal of the pluck (trachea, lungs and heart);b) placing the pluck on the examination table, or tray. A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Visually examine the exposed surfaces of the lungs then palpate them and incise (cut) them if indicated.

Note: The lungs are palpated to detect any deep lesions such as abscesses, tumors, chronic pneumonia, etc. If any lesions are detected, by palpation, the lungs are incised.

Common abnormalities observed in the lungs of pigs include:

- a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

- b) Pneumonia

Note: Most cases of pneumonia are caused by bacterial infections that have entered the lung by the airways. This type of pneumonia (referred to as bronco-pneumonia because it comes in through the bronchi) results in consolidation of the lungs to the point where the lung tissue may be as firm as the liver. Usually the front and lower portions of the lung are affected in this type of pneumonia.

Another form of pneumonia is embolic pneumonia. This name is given because the infection has come to the lungs as emboli (clumps of bacteria) in the blood stream. With embolic pneumonia there will be lots of small abscesses randomly scattered throughout the lung.

Embolic pneumonia is common in pigs that were subjected to tail biting. In this case bacterial emboli gain access to the blood stream, in the area of the tail. They are subsequently carried through the right side of the heart and are filtered out by the capillaries in the lungs. Small abscesses develop, in the lungs, wherever a bacterial emboli lodges.

- c) Pleuritis

Note: Pleuritis is an inflammatory reaction in the pleura. The smooth shiny tissue that covers the lungs and inner chest wall is called the pleura.

- d) Pleural adhesions

Note: Pleural adhesions are due to the development of scar tissue in the healing process of pleuritis.

2. Examine the bronchial lymph nodes and incise the left bronchial node and any others that are enlarged.

TIPM – 08-C-02 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

3. Observe, palpate and open the heart

Note: In the past meat inspectors were required to make several cuts in the muscle of the heart to check for *Cysticercus cellulosae*. *C. cellulosae* is the intermediate form of the so called pork tapeworm that infects humans. This parasite is of such low incidence that it is believed to no longer exist in Canada.

Abnormalities that may be seen in the heart include:

a) Valvular Endocarditis

Note: Valvular endocarditis (inflammation of the heart valves) is common in pigs that have recovered from a septicemia (blood poisoning at some time in their lives). This condition is recognized by the presence of thrombi (growths) on the heart valves. Pieces of these thrombi can break off and cause problems in other organs and tissues by blocking blood vessels and by spreading infection if bacteria are still present in the thrombi. It is because of this condition that the heart has to be opened.

b) Pericarditis

Note: Pericarditis refers to inflammation of the heart. In pigs pericarditis can be caused by bacterial infections via the blood stream or by extension of cases of pneumonia and/or pleurisy.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) filled out completely;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-C-01 PM Inspection - Hogs - Head
- 08-C-03 PM Inspection - Hogs - Abdominal Viscera
- 08-C-04 PM Inspection - Hogs - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Pigs - Abdominal Viscera	08-C-03
REGULATORY REFERENCE <i>M-9 RSA 200 Meat Inspection Act</i> (Current to 4/29/2009) Sections 5(c) & 6 <i>AR 42/2003 Meat Inspection Regulation</i> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all hogs slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the abdominal viscera of pigs.	
OBJECTIVE/OUTCOME The abdominal viscera, of hogs, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the abdominal viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the abdominal viscera in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removing the viscera from the carcass;b) placing the viscera on the examination table. A system will be in place to ensure that the viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Observe and palpate the liver.

Note: If palpation raises suspicion that a lesion may be present the liver will be incised.

2. Observe and incise the hepatic and portal lymph nodes.
3. Observe the intestines, stomach and spleen.

Note: To perform a proper examination of the intestines they should be spread out.

The omentum, mesentery and any other fatty tissue that is going to be used for human consumption must be free of contamination.

4. Examine the mesenteric lymph nodes.

Note: Usually it is not necessary to incise the mesenteric lymph nodes in pigs. They should be incised if they are enlarged.

5. Visually inspect and palpate the kidneys.

Note: The kidneys may be examined in the carcass, or on the viscera table. In either instance they must be fully exposed by peeling off the renal capsule.

Abnormalities observed during the postmortem inspection of the abdominal viscera of pigs include:

- a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

- b) Parasitic Scars

Note: So called “milk spots” are small white scars, usually most evident just under the capsule of the liver. They are caused by the migration of the larvae of the large roundworm of pigs (*Ascaris suum*), which is found in the small intestines. This used to be a very common condition but is now relatively rare due to raising hogs in facilities (e.g. slotted floors) where they don't have access to manure with infective ascarid eggs. Heavy infestations can cause extensive fibrosis of the liver.

- c) Peritonitis

Note: Peritonitis is the term for bacterial infection of the peritoneum. It may be localized or it may involve the entire abdomen. On the ante-mortem examination hogs with peritonitis may have distended or bloated abdomens.

- d) Cysts

Note: Cysts are closed cavities, or sacs, containing fluid. They can occur in any part of the body but are particularly common in the kidneys of pigs. Due to a possible hereditary cause it is not unusual to see cystic kidneys in a number of pigs from the same litter. They are relatively harmless as there is normally enough functional kidney tissue left to meet the demands of the animal.

TIPM – 08-C-03 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

e) Enteritis

Note: Enteritis is an inflammatory condition of the intestines caused by bacterial infections, including Salmonella species, parasites, and chemical agents. Diarrhea is a common finding. In some cases the wall and inner lining of the intestine will be thickened.

f) Infarcts

Note: Infarcts are pieces of tissue that have died because their blood supply has been cut off. Infarcts are particularly common in the kidneys of hogs. Because of the structure of the kidney blockage of small arteries causes death of a cone shaped area of tissue with the base of the cone on the outer surface of the kidney. Most infarcts are pale and slightly depressed. An early infarct may be swollen and red. When infarcts are seen the inspector should closely examine the valves on the left side of the heart for any evidence of any growths on the heart valves (valvular endocarditis caused by bacterial infection). Infarcts occur when small pieces of these growths (emboli) break off then lodge in a smaller artery in the kidney.

6. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

When **localized** lesions are detected in the abdominal viscera and there is no evidence of any adverse effects on the wholesomeness of the rest of the carcass **only the affected organ or tissue is condemned.**

Condemnation, of the carcass and all organs, is justified when liver lesions are accompanied by jaundice and kidney lesions are accompanied by uremia.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-C-01 PM Inspection - Hogs - Head
- 08-C-02 PM Inspection - Hogs - Thoracic Viscera
- 08-C-04 PM Inspection - Hogs - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Hogs - Carcass	08-C-04
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 6
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all hogs slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of pig carcasses .	
OBJECTIVE/OUTCOME Hog carcasses will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the carcass has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the carcass in a manner that makes it suitable for inspection. Note: Proper presentation includes: <ol style="list-style-type: none">a) removing the viscera (internal organs);b) splitting the carcass; BBQ hogs that are partially dressed (i.e. they have not been split) may be submitted for inspection. If any abnormalities are observed on the exposed parts of the presented carcass, or any of its portions, that have a food safety implication the carcass shall be immediately disqualified from being approved as a partially dressed carcass and shall be subject to a complete dressing procedure and presented for a normal post-mortem inspection.c) presenting the carcass before final trimming and/or washing.	

TIPM – 08-C-04 Page 2 of 6 – OBJECTIVE/OUTCOME (continued)

A system will be in place to ensure that the carcass can be matched up with the head and all internal organs until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act*, which requires that every portion of a carcass that is unfit for food must be condemned.

MIB Inspectors will:

1. Conduct a visual inspection of the entire carcass.

Note: This inspection includes the:

- a) joints;
- b) outer muscular surfaces;
- c) diaphragm;
- d) peritoneum;
- e) pleura;
- f) neck

2. Examine and incise the iliac lymph nodes.

Note: Examination of these nodes will help in the detection of any inflammatory conditions in the hind legs including arthritis, abscesses, and other infections.

3. Palpate then incise (if deemed necessary) any observed abnormalities.

Note: Close attention should be paid to the area of the tail head and distal spinal cord. Abscesses are common around the tail head in pigs that have been subjected to tail biting.

4. Examine the kidneys.

Note: If the kidneys have been left in the carcass, they should be fully exposed by removal of the renal capsule, visually observed and palpated for cysts, infarcts, color variations, pinpoint red or white lesions, etc.

Examples of conditions seen on the post-mortem examination of pig carcasses include:

- a) Arthritis

Note: Arthritis is defined as inflammation of a joint. One or more joints, in one or more limbs may be affected. Affected joints will be swollen. Arthritis may be infectious or non-infectious. Infectious arthritis will cause inflammatory reactions in the lymph nodes of the affected limb. When there are changes in the lymph nodes the entire quarter will be condemned. If the condition is deemed to be non-infectious only the affected joint needs to be removed.

b) Abscesses

Note: Abscesses are accumulations of pus enclosed in a fibrous tissue capsule. Pus can vary greatly in color, odor and consistency depending on the type of bacteria present and the age of the abscess. Abscesses and surrounding tissues must be removed from the carcass. The carcass, or individual quarters, may be condemned in the case of multiple, or severe, abscesses, or where there are inflammatory changes in the lymph nodes draining that area of the carcass.

c) Contamination

Note: Contamination is the presence of foreign material on the surface of the carcass. Most visible contamination is due to poor dressing procedures. Contaminated areas of the carcass must be trimmed in accordance with the directions of a MIB Inspector then the remainder of the carcass must be thoroughly washed.

The carcass, or portions of it, will be condemned if, in the judgment of the inspector, the contamination is so severe that it cannot be completely removed by trimming.

d) Adhesions

Note: Adhesions are accumulations of fibrous (scar) tissue that form in animals that have recovered from pleuritis, or peritonitis. In the carcass, adhesions will be seen on the peritoneum, or pleura, which line the abdominal and chest walls respectively.

e) Jaundice

Note: Jaundice (also called icterus) refers to a yellow discoloration of the carcass. Liver disease and failure is the main cause of jaundice.

Carcasses are condemned for jaundice if there is severe yellow discoloration, or if there are other systemic changes in any of the organs. Carcasses that are only mildly affected can be held for 24 hours. If the jaundice disappears, in that time, the carcass can be passed otherwise it is condemned.

f) Bruising

Note: Bruises develop following injuries that cause bleeding into the muscles. With time the blood pigment (hemoglobin) breaks down. As this occurs the color of the bruise will change from dark red, to green, to yellow. Bruises are not hazardous to human health but affected tissues don't appear good so they are trimmed out. Inspectors have the authority to condemn the entire carcass when bruising is severe and widespread.

g) Injection Sites

Note: The muscles of the rump and neck area should be closely examined for any evidence of injection site lesions. These will appear as small, or large, localized areas of necrosis and discoloration of muscle tissue. The severity of the lesion will vary with what was injected. Fresh injection sites usually have some hemorrhages in them.

The carcass must be held when fresh injection sites are sent to the laboratory for residue testing.

If there is any doubt about whether an injection site is fresh or not it should be handled as if it were a fresh lesion.

h) Emaciation

Note: Emaciation is the technical term for an extremely wasted body condition. Animals can be thin without being emaciated. It is important for the MIB Inspector to differentiate between emaciation and thinness. If normal looking fat is present on the surface of the heart, or around the kidney, the animal is not emaciated. Emaciated animals are condemned, thin ones are not.

i) Over Scalding

Note: Over scalding gives the skin and exposed muscles a cooked appearance. If mild the affected areas can be trimmed. If it is severe the carcass or portions thereof are condemned.

j) Hyperkeratosis

Note: Hyperkeratosis is an inflammatory skin condition. Most cases occur in intensively housed pigs. The skin over the back, between the ears and sometimes in the arm pit area, becomes thickened and cracked. A deficiency of zinc is the cause.

k) Melanosis

Note: Melanosis is a condition caused by an abnormal accumulation of melanocytes. Melanocytes are connective tissue cells which contain a black pigment. They can accumulate in any tissues of the body including the muscles and bones of the carcass. Melanosis is recognized by the presence of black spots, or streaks, in otherwise normal tissue. The cause is unknown.

l) Erysipelas

Note: Erysipelas is called “Diamond Skin Disease” because of the unique diamond shaped lesions that develop on the skin. These lesions are actually infarcts of the skin caused by a blockage of blood flow. In their early stages they are bright red. Erysipelas is caused by a bacterium called *Erysipelothrix rhusiopathiae*. It occurs as an acute septicemic (blood poisoning) form, a cutaneous form (diamond skin) and in a chronic form generally associated with arthritis and vegetative valvular endocarditis (growths on the heart valves).

m) Frostbite

Note: Frostbite occurs when pigs are exposed to excessively cold temperatures usually during transportation. Lack of bedding and circulatory disturbances are contributing factors. Frost bite tends to occur in the extremities (ears, tails and lower limbs).

n) Imperfect Bleeding

Note: Imperfect bleeding refers to the presence of blood in the tissues due to poor bleeding technique including complete failure to bleed the animal. In severe cases, the carcass will be bright red. In milder cases localized congestion may be evident in the muscles.

o) Pale Soft Exudative Pork

Note: This condition is commonly referred to by the initials PSE. This is not a disease condition and it has no effect on the safety of the carcass. It is however, a quality issue.

It occurs in pigs that are genetically predisposed to the effects of stress. In this condition there is an exudation (movement) of water out of the cells and into the intercellular spaces. This condition occurs if there is a rapid drop in the pH, (degree of acidity) of the tissues, while the carcass is still warm. The end result is muscle tissue that is pale, soft and wet.

p) Atrophic Rhinitis

Note: This is an inflammatory condition of the nose that only occurs in pigs. It is caused by infection, at a young age, by two bacteria that act in sequence.

Snouts of affected pigs will be shortened and they may be distorted. There is usually a watery discharge from the eyes which causes black streaks on the face due to accumulations of dirt.

This disease can lead to complete destruction of the turbinate bones which act to filter large particles out of the air that is being breathed in. This makes affected pigs very susceptible to pneumonia.

q) Sexual Odor

Note: A sexual odor (boar smell) is not a food safety issue but it can make the meat unpalatable. Boars whose testicles have been retained in the abdomen will often have a strong odor. Retained testicles are often seen still attached to the carcass.

Affected carcasses can be held for 24 to 48 hours to see if the odor will dissipate. If it doesn't the plant operator should be given the option of having it condemned for sexual odor or of using the carcass in the production of spiced meat products.

TIPM – 08-C-04 Page 6 of 6 – OBJECTIVE/OUTCOME (continued)

- r) Miscellaneous conditions that may be seen in the carcass include evidence of old and possibly infected castration wounds, urine scald (from lack of bedding) and sunburn.
- 5. Keep **control** of all **carcasses**, or parts of carcasses, that are “**held**” for **whatever reason**, following the PM examination **until the final disposition has been determined**.
- 6. Identify all carcasses, or portions thereof, that are condemned so that they will be handled in a manner that ensures that contamination of equipment, meat, or meat products, from other carcasses, does not occur.

Note: No part of a condemned carcass can be used for human consumption.

- 7. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector’s Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-C-01 PM Inspection - Hogs - Head
- 08-C-02 PM Inspection - Hogs - Thoracic Viscera
- 08-C-03 PM Inspection - Hogs - Abdominal Viscera

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Sheep, Goats & Deer - Head	08-D-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE <p>Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir).</p> <p>Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions.</p> <p>Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.</p> <p>To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the:</p> <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass <p>The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the head of sheep, goats and deer.</p>	
OBJECTIVE/OUTCOME <p>All sheep, lamb, goat and deer heads will be inspected in the manner set out in this document.</p> <p>Note: The procedure for the PM examination of the head has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p> <p>In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability.</p> <p>Designated abattoir personnel will prepare the head in a manner that makes it suitable for inspection.</p> <p>Note: In general this preparation includes:</p> <ol style="list-style-type: none">a) skinning the head;b) removing the horns;c) cleaning the head;d) placing the head on the inspection rack	

TIPM – 08-D-01 Page 2 of 3 – OBJECTIVE/OUTCOME (continued)

The head will be presented with all lymph nodes in situ (in place) and exposed.

Note: Salvage of the head meat and tongue will not be allowed unless the head is properly presented for the PM inspection.

A system will be in place to ensure that the head can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act* which requires that every portion of a carcass that is unfit for food must be condemned.

The head inspection should be completed before the carcass has gone past the final inspection station.

MIB Inspectors will:

1. Determine the age of the animal by examining the lower incisor teeth.

Note: Condemned animals that are deemed to be over 12 months must be sampled in accordance with the Scrapie Surveillance Protocol. For the purpose of this protocol any animal in which at least one permanent central incisor has erupted is considered to be one year of age.

2. Visually observe the head to ensure that it is free of any hair, hide, horns, ingesta or any other type of contamination.

Note: Common areas of contamination include the base of the skull, the area where the horns were attached and inside the mouth.

The head should be held for trimming and re-inspection if there is any contamination or other dressing defects.

Various species of *Cysticerci* may be found in sheep but none of them are pathogenic for humans therefore it is not necessary to incise the outer and inner masseter (cheek) muscles of sheep or goats.

Sheep and deer may be affected with nose bots. The bots seen in sheep are the larvae of a fly called *Oestrus ovis*. They live in the sinuses. They may be a nasal discharge in affected animals.

3. Incise sub-maxillary (mandibular) lymph nodes.

Note: These nodes should be observed for any evidence of edema, enlargement, abscesses, grittiness, or tumors.

Sheep, and to a lesser extent goats may have abscessed lymph nodes, including those in the head, due to CLA. This condition is more common in sheep because they are subjected to more frequent wounds from shearing. The bacteria which causes CLA is spread by dirty shearing equipment. Affected nodes will have a thick dry cheesy type of pus that often appears to be layered like an onion. Abscesses are more common in the body nodes but they can appear in any lymph node. This condition is not dangerous to humans but may cause emaciation in severely affected animals.

These nodes are palpated in partially dressed lambs that weigh less than 25 kgs. Those that reveal any abnormality on palpation are incised.

TIPM – 08-D-01 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

4. Visually examine, palpate and incise (if necessary) the tongue.

Note: This is done to check for abscesses and other abnormalities. Localized conditions such as scars, sores and erosions are trimmed if the tongue is going to be salvaged.

5. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General
08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-A-04 PM Disposition after PM Inspection - All Species
08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Sheep, Goats & Deer - Thoracic Viscera	08-D-02
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the thoracic viscera of sheep, goats and deer.	
OBJECTIVE/OUTCOME The thoracic viscera, of sheep, goats and deer, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the thoracic in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removal of the pluck (trachea, lungs and heart);b) placing the pluck on the examination table, or tray A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Visually examine the exposed surfaces of the lungs then palpate them and incise (cut) them if indicated.

Note: The lungs are palpated to detect any deep lesions such as abscesses, tumors, chronic pneumonia, etc. If any lesions are detected, by palpation, the lungs are incised.

Common abnormalities observed in the lungs include:

a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

Sheep, and to a lesser extent goats may have abscesses in the lymph nodes of the chest due to CLA. Affected nodes will have a thick dry cheesy type of pus that often appears to be layered like an onion. Abscesses are more common in the body nodes but they can appear in any lymph node. This condition is not dangerous to humans but may cause emaciation in severely affected animals.

b) Pneumonia

Note: Most cases of pneumonia are caused by bacterial infections that have entered the lung by the airways. This type of pneumonia (referred to as bronco-pneumonia because it comes in through the bronchi) results in consolidation of the lungs to the point where the lung tissue may be as firm as the liver. Usually the front and lower portions of the lung are affected in this type of pneumonia.

Another form of pneumonia is embolic pneumonia. This name is given because the infection has come to the lungs as emboli (clumps of bacteria) in the blood stream. With embolic pneumonia there will be lots of small abscesses randomly scattered throughout the lung.

c) Pleuritis

Note: Pleuritis is an inflammatory reaction in the pleura. The smooth shiny tissue that covers the lungs and inner chest wall is called the pleura.

d) Pleural adhesions

Note: Pleural adhesions are due to the development of scar tissue in the healing process of pleuritis.

e) Lungworms

Note: Lungworms, when present will be found in the trachea usually at the point where the trachea divides into the left and right bronchi. They are slender worms approximately 1 to 1½ inches in length.

TIPM – 08-D-02 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

2. Examine the bronchial lymph nodes visually and by palpation.

Note: These nodes are only incised when abnormalities are detected on the visual examination, or during palpation.

3. Examine the heart visually and by palpation.

Note: The heart does not need to be opened unless abnormalities are detected on palpation. When the heart is opened it should be opened in a manner that allows visualization of whatever abnormality was palpated.

Abnormalities that may be seen in the heart include:

- a) Pericarditis

Note: Pericarditis refers to inflammation of the heart. It can be caused by penetration of the heart by a nail in “Hardware Disease” but this is not as common in small ruminants as it is in cattle. Pericarditis can also develop as an extension of pleuritis. In most cases there will be heavy accumulations of yellow clotted fibrin.

- b) Serous atrophy of fat

Note: Serous atrophy of fat refers to a condition when the fat has a watery and semi gelatinous appearance. It occurs when the animal is emaciated. Serous atrophy is most commonly seen in the fat around the heart because that is one of the last places to have any fat when an animal is starving.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector’s Daily Report).

Note: These are official MIB documents. They must be:

- a) filled out completely;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-D-01 PM Inspection - Sheep, Goats & Deer - Head
- 08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
- 08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Sheep, Goats & Deer - Abdominal Viscera	08-D-03
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the abdominal viscera of sheep, goats & deer.	
OBJECTIVE/OUTCOME The abdominal viscera (organs), of sheep, goats and deer, will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the abdominal viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the abdominal viscera in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removing the viscera from the carcass;b) placing the viscera on the examination table. A system will be in place to ensure that the viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Give the liver a visual inspection and thoroughly palpate it. The hepatic lymph nodes should be examined and incised 2-3 times. The bile ducts should be opened longitudinally to observe for liver flukes.

Note: The liver shouldn't be incised unless a deep lesion is palpated.

Abnormalities observed in the liver include:

a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

Sheep, and to a lesser extent goats may have abscessed lymph nodes due to CLA, including those of the abdomen. Because this condition is generally due to infection of shearing wounds abscesses are more common in the lymph nodes of the body. Affected nodes will have a thick dry cheesy type of pus that often appears to be layered like an onion. This condition is not dangerous to humans but may cause emaciation in severely affected animals.

b) Adhesions

Note: Similar to other abdominal organs the liver can be caught up in adhesions due to the formation of scar tissue from peritonitis.

c) Melanosis

Note: Melanosis is a condition caused by an abnormal accumulation of melanocytes. Melanocytes are connective tissue cells which contain a black pigment. They can accumulate in various body tissues including the liver. Melanosis is recognized by the presence of black spots, or streaks, in otherwise normal tissue. The cause is unknown. This condition is seen more frequently in sheep than in any other species.

d) Liver Flukes

Note: Liver flukes are parasitic flatworms. Two types have been reported in Alberta. They leave dark tracts throughout the liver due to their migration in the liver.

e) Chronic Passive Congestion

Note: "Chronic Passive Congestion" refers to blood backing up into the liver due to poor circulation. It is generally caused by right sided heart failure. Because of certain peculiarities of the circulation, of blood, through the liver some parts of the individual liver lobules are more congested than other portions. The reticulated pattern of the lesion gives an appearance that has been likened to that of nutmeg thus the term nutmeg liver.

f) Cysticerci

Note: Two types of Cysticerci will be seen in sheep. *Cysticercus ovis* and *Cysticercus tenuicollis*. *Cysticercus ovis* is usually found in the muscle but may be found throughout the abdomen as well. *Cysticercus tenuicollis* is usually seen in the abdomen often attached to the liver. This parasite is a larger cyst than *C. ovis*. It has a long stretched out neck which accounts for its name. The irony of these parasites is that they are not harmful for humans but they are harmful to dogs and other carnivores. A rare example of food fit for humans but not for animals.

2. Examine the intestines, omentum, mesentery and mesenteric lymph nodes.

Note: For a proper examination the intestines should be spread out. Usually it is not necessary to incise the mesenteric lymph nodes. They should be incised if they are enlarged or if there is any possibility that the animal has tuberculosis. The omentum, mesentery and any other fatty tissue that is going to be used for human consumption must be free of contamination.

3. Visually examine the spleen and incise it if there are any abnormalities.

4. Visually examine the four compartments of the stomach (reticulum, rumen, omasum and abomasum).

Note: There may be evidence of localized peritonitis, or abscess formation, if the reticulum has been penetrated by a nail, or piece of wire.

5. Examine the kidneys.

Note: The PM examination of the kidneys may be done with the kidneys in the carcass or on the viscera table. In either instance they must be fully exposed for the inspector.

Common abnormalities observed in the kidney include:

a) Cysts

Note: Cysts are closed cavities, or sacs, that contain fluid. They can occur in any part of the body. They are relatively common in kidneys where they are believed to be caused by a developmental defect in the urinary tubules. When present they tend to get larger as the animal gets older.

b) Infarcts

Note: An infarct is an area of tissue that has died because its blood supply has been cut off. Because of the anatomy of the kidney blockage of small arteries causes death of a cone shaped area of tissue with the base of the cone on the outer surface of the kidney. Most infarcts are pale and slightly depressed. An early infarct may be swollen and red. When infarcts are seen the inspector should closely examine the valves on the left side of the heart for any evidence of any growths on the heart valves (valvular endocarditis caused by bacterial infection). Infarcts occur when small pieces of these growths (emboli) break off then lodge in a smaller artery in the kidney.

TIPM – 08-D-03 Page 4 of 4 – OBJECTIVE/OUTCOME (continued)

6. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

When **localized** lesions are detected in the abdominal viscera and there is no evidence of any adverse effects on the wholesomeness of the rest of the carcass **only the affected organ or tissue is condemned.**

Condemnation, of the carcass and all organs, is justified when liver lesions are accompanied by jaundice and kidney lesions are accompanied by uremia.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-D-01 PM Inspection - Sheep, Goats & Deer - Head
- 08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
- 08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Sheep, Goats & Deer - Carcass	08-D-04
REGULATORY REFERENCE <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 5
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the carcass of sheep, goats and deer.	
OBJECTIVE/OUTCOME All sheep, goat and deer carcasses will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the carcass has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the carcass in a manner that makes it suitable for inspection. Note: Proper presentation includes: <ol style="list-style-type: none">a) removing the viscera (internal organs);b) splitting the carcass;c) presenting the carcass before final trimming and/or washing A system will be in place to ensure that the carcass can be matched up with the head and all internal organs until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Conduct a visual inspection of the entire carcass.

Note: This inspection includes the:

- i. joints;
- ii. outer muscular surfaces;
- iii. diaphragm;
- iv. peritoneum;
- v. pleura;
- vi. neck

2. Visually examine the entire carcass and superficial body lymph nodes (prescapular and pre-femoral). Abnormalities will be palpated and incised if deemed necessary.

Note: Sheep and goats are affected by a unique disease called Caseous Lymphadenitis (CLA). This condition can affect any lymph node in the body including those of the carcass.

Examples of conditions seen on the post-mortem examination of sheep, goat and deer carcasses include:

a) Arthritis

Note: Arthritis is defined as inflammation of a joint. One or more joints, in one or more limbs may be affected. Affected joints will be swollen. Arthritis may be infectious or non-infectious. Infectious arthritis will cause inflammatory reactions in the lymph nodes of the affected limb. When there are changes in the lymph nodes the entire quarter will be condemned. If the condition is deemed to be non-infectious only the affected joint needs to be removed.

b) Abscesses

Note: Abscesses are accumulations of pus enclosed in a fibrous tissue capsule. Pus can vary greatly in color, odor and consistency depending on the type of bacteria present and the age of the abscess. Abscesses and surrounding tissues must be removed from the carcass. The carcass, or individual quarters, may be condemned in the case of multiple, or severe, abscesses, or where there are inflammatory changes in the lymph nodes draining that area of the carcass.

As mentioned above sheep, and to a lesser extent goats may have abscessed lymph nodes due to CLA. This condition is more common in sheep because they are subjected to more frequent wounds from shearing. The bacteria which causes CLA is spread by dirty shearing equipment. Affected nodes will have a thick dry cheesy type of pus that often appears to be layered like an onion. Abscesses are more common in the body nodes but they can appear in any lymph node. This condition is not dangerous to humans but may cause emaciation in severely affected animals.

c) Cysticercosis

Note: *Cysticercus ovis* is the intermediate form of a tapeworm called *Taenia ovis*. This is the most common *Cysticercus* seen by meat inspectors. Many animals from the same flock may be affected if dogs are with the sheep and are allowed to eat dead sheep carcasses. The adult tapeworm lives in dogs and other carnivores. This parasite is harmless to humans thus it is acceptable to attempt salvage by trimming them out. On occasion carcasses that are severely affected may be condemned for aesthetic reasons. Condemned carcasses and trimmed material must not be fed to dogs.

d) Contamination

Note: Contamination is the presence of foreign material on the surface of the carcass. Most visible contamination is due to poor dressing procedures. Contaminated areas of the carcass must be trimmed in accordance with the directions of a MIB Inspector then the remainder of the carcass must be thoroughly washed.

The carcass, or portions of it, will be condemned if, in the judgment of the inspector, the contamination is so severe that it cannot be completely removed by trimming.

e) Adhesions

Note: Adhesions are accumulations of fibrous (scar) tissue that form in animals that have recovered from pleuritis, or peritonitis. In the carcass, adhesions will be seen on the peritoneum, or pleura, which line the abdominal and chest walls respectively.

f) Jaundice

Note: Jaundice (also called icterus) refers to a yellow discoloration of the carcass. Liver disease and failure is the main cause of jaundice.

Carcasses are condemned for jaundice if there is severe yellow discoloration, or if there are other systemic changes in any of the organs. Carcasses that are only mildly affected can be held for 24 hours. If the jaundice disappears, in that time, the carcass can be passed otherwise it is condemned.

g) Bruising

Note: Bruises develop following injuries that cause bleeding into the muscles. With time the blood pigment (hemoglobin) breaks down. As this occurs the color of the bruise will change from dark red, to green, to yellow. Bruises are not hazardous to human health but affected tissues don't appear good so they are trimmed out. Inspectors have the authority to condemn the entire carcass when bruising is severe and widespread.

h) Melanosis

Note: Melanosis is a condition caused by an abnormal accumulation of melanocytes. Melanocytes are connective tissue cells which contain a black pigment. They can accumulate in any tissues of the body including the muscles and bones of the carcass. Melanosis is recognized by the presence of black spots, or streaks, in otherwise normal tissue. The cause is unknown. Melanosis is more common in sheep than it is in other species.

i) Injection Sites

Note: The muscles of the rump and neck area should be closely examined for any evidence of injection site lesions. These will appear as small, or large, localized areas of necrosis and discoloration of muscle tissue. The severity of the lesion will vary with what was injected. Fresh injection sites usually have some hemorrhages in them.

The carcass must be held when fresh injection sites are sent to the laboratory for residue testing.

j) Emaciation (cachexia)

Note: Emaciation is the technical term for an extremely wasted body condition. Animals can be thin without being emaciated. It is important for the MIB Inspector to differentiate between emaciation and thinness. If there is any **normal** looking **fat** on the surface of the heart, or around the kidney, the animal is **not emaciated**. Emaciated animals are condemned, thin ones are not.

k) Edema

Note: Edema refers to the accumulation of clear watery fluid in the muscles of the carcass. Edema can be localized, or generalized. The most common cause of generalized edema is heart failure. Localized edema is usually due to local circulation problems (in the blood, or lymph) or secondary to an inflammatory reaction. Portions of the carcass affected with edema are condemned.

3. Keep **control** of all **carcasses**, or parts of carcasses, that are “**held**” for **whatever reason**, following the PM examination **until the final disposition has been determined**.
4. Identify all carcasses, or portions thereof, that are condemned so that they will be handled in a manner that ensures that contamination of equipment, meat, or meat products, from other carcasses, does not occur.

Note: No part of a condemned carcass can be used for human consumption.

TIPM – 08-D-04 Page 5 of 5 – OBJECTIVE/OUTCOME (continued)

5. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-D-01 PM Inspection - Sheep, Goats & Deer - Head
- 08-D-02 PM Inspection - Sheep, Goats & Deer - Thoracic Viscera
- 08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Elk and Bison - Head	08-E-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 2
RATIONALE <p>Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir).</p> <p>Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions.</p> <p>Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.</p> <p>To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the:</p> <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass <p>The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the <u>head</u> of elk & bison.</p>	
OBJECTIVE/OUTCOME <p>All elk & bison heads will be inspected in the manner set out in this document.</p> <p>Note: The procedure for the PM examination of the head has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p> <p>In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability.</p> <p>Designated abattoir personnel will prepare the head in a manner that makes it suitable for inspection.</p> <p>Note: In general this preparation includes:</p> <ol style="list-style-type: none">a) skinning the head;b) removing the horns (bison);c) cleaning the head;d) placing the head on the inspection rack	

TIPM – 08-E-01 Page 2 of 2 – OBJECTIVE/OUTCOME (continued)

The head will be presented with all lymph nodes in situ (in place) and exposed.

Note: Salvage of the head meat and tongue will not be allowed unless the head is properly presented for the PM inspection.

A system will be in place to ensure that the head can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act* which requires that every portion of a carcass that is unfit for food must be condemned.

The head inspection should be completed before the carcass has gone past the final inspection station.

MIB Inspectors will:

1. Visually observe the head to ensure that it is free of any hair, hide, horns, ingesta or any other type of contamination.

Note: Common areas of contamination include the base of the skull, the area where the horns were attached and inside the mouth.

The head should be held for trimming and re-inspection if there is any contamination or other dressing defects.

2. Incise the following lymph nodes.

- a) parotid
- b) sub-maxillary (mandibular)
- c) retropharyngeal

Note: These nodes should be observed for any evidence of edema, enlargement, abscesses, grittiness, or tumors.

3. Visually examine, palpate and incise (if necessary) the tongue.

Note: This is done to check for abscesses and other abnormalities. Localized conditions such as scars, sores and erosions are trimmed.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report)

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-E-02 PM Inspection - Elk & Bison - Thoracic Viscera
- 08-E-03 PM Inspection - Elk & Bison - Abdominal Viscera
- 08-E-04 PM Inspection - Elk & Bison - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Elk & Bison - Thoracic Viscera	08-E-02
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the thoracic viscera of elk & bison.	
OBJECTIVE/OUTCOME The thoracic viscera (organs) of elk and bison will be inspected in the manner set out in this section. Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare the thoracic in a manner that makes it suitable for inspection. Note: In general this preparation includes: <ol style="list-style-type: none">a) removal of the pluck (trachea, lungs and heart);b) placing the pluck on the examination table, or tray A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Visually examine the exposed surfaces of the lungs then palpate them and incise (cut) them if indicated.

Note: The lungs are palpated to detect any deep lesions such as abscesses, tumors, chronic pneumonia, etc. If any lesions are detected, by palpation, the lungs are incised.

Common abnormalities observed in the lungs include:

a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

b) Emphysema

Note: Emphysema is an accumulation of air within the tissue of the lungs. It appears as small bubbles all over the lung. Affected lungs will not collapse properly.

c) Pneumonia

Note: Most cases of pneumonia are caused by bacterial infections that have entered the lung by the airways. This type of pneumonia (referred to as bronco-pneumonia because it comes in through the bronchi) results in consolidation of the lungs to the point where the lung tissue may be as firm as the liver. Usually the front and lower portions of the lung are affected in this type of pneumonia.

Another form of pneumonia is embolic pneumonia. This name is given because the infection has come to the lungs as emboli (clumps of bacteria) in the blood stream. With embolic pneumonia there will be lots of small abscesses randomly scattered throughout the lung.

A third type of pneumonia is interstitial pneumonia. In interstitial pneumonia the lungs develop a rubbery consistency and they are uniformly affected throughout. Interstitial pneumonias are caused by virus infections.

d) Pleuritis

Note: Pleuritis is an inflammatory reaction in the pleura. The smooth shiny tissue that covers the lungs and inner chest wall is called the pleura.

e) Pleural adhesions

Note: Pleural adhesions are due to the development of scar tissue in the healing process of pleuritis.

f) Echinococcus Cysts

Note: Echinococcus cysts may be seen in the lungs of elk. They are the intermediate forms of a tapeworm of carnivores (dogs, coyotes & wolves). They are much larger than the Cysticercus cysts that are seen in other ruminant species. An Echinococcus cyst may be several inches in diameter.

Care should be taken to ensure that fluid from incised cysts doesn't contact the eyes of the inspector.

The presence of these cysts does not affect the suitability of the carcass for human consumption.

2. Examine the mediastinal lymph nodes and incise any that are enlarged.
3. Examine the heart visually and by palpation. Palpated abnormalities should be incised.

Abnormalities that may be seen in the heart include:

a) Pericarditis

Note: Pericarditis refers to inflammation of the heart. Pericarditis can also develop as an extension of pleuritis. In most cases there will be heavy accumulations of yellow clotted fibrin.

b) Serous atrophy of fat

Note: Serous atrophy of fat refers to a condition when the fat has a watery and semi gelatinous appearance. It occurs when the animal is emaciated. Serous atrophy is most commonly seen in the fat around the heart because that is one of the last places to have any fat when an animal is starving.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) filled out completely;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General
08-A-02 PM Inspection - Red Meat Animals - Methods
08-A-03 PM Inspection - Red Meat Animals - Findings - General
08-A-04 PM Disposition after PM Inspection - All Species
08-E-01 PM Inspection - Elk & Bison - Head
08-E-03 PM Inspection - Elk & Bison - Abdominal Viscera
08-E-04 PM Inspection - Elk & Bison - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Elk & Bison - Abdominal Viscera	08-E-03
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Sections 5(c) & 6 <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE <p>Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir).</p> <p>Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions.</p> <p>Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.</p> <p>To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the:</p> <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass <p>The intent of this document is to outline the procedures that are followed for a proper post-mortem examination of the <u>abdominal viscera</u> of elk and bison.</p>	
OBJECTIVE/OUTCOME <p>The abdominal viscera (organs) of elk and bison will be inspected in the manner set out in this document.</p> <p>Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p> <p>In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability.</p> <p>Designated abattoir personnel will prepare the thoracic in a manner that makes it suitable for inspection.</p> <p>Note: In general this preparation includes:</p> <ol style="list-style-type: none">a) removal of the pluck (trachea, lungs and heart);b) placing the pluck on the examination table, or tray.	

TIPM – 08-E-03 Page 2 of 4 – OBJECTIVE/OUTCOME (continued)

A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed.

Note: This is done to comply with the requirements of section 6 of the *Meat Inspection Act* which requires that every portion of a carcass that is unfit for food must be condemned.

MIB Inspectors will:

1. Give the liver a visual inspection and thoroughly palpate it. The hepatic lymph nodes should be examined and incised 2-3 times. The bile ducts should be opened longitudinally to observe for liver flukes.

Note: The liver shouldn't be incised unless a deep lesion is palpated.

Abnormalities observed in the liver include:

- a) Abscesses

Note: Abscesses are accumulations of pus contained within a thick fibrous tissue capsule.

- b) Adhesions

Note: Similar to other abdominal organs the liver can be caught up in adhesions due to the formation of scar tissue from peritonitis.

- c) Liver Flukes

Note: Liver flukes are parasitic flatworms. Two types have been reported in Alberta. They leave dark tracts throughout the liver due to their migration in the liver.

- d) Chronic Passive Congestion

Note: "Chronic Passive Congestion" refers to blood backing up into the liver due to poor circulation. It is generally caused by right sided heart failure. Because of certain peculiarities of the circulation, of blood, through the liver some parts of the individual liver lobules are more congested than other portions. The reticulated pattern of the lesion gives an appearance that has been likened to that of nutmeg thus the term nutmeg liver.

2. Examine the intestines, omentum, mesentery and mesenteric lymph nodes.

Note: For a proper examination the intestines should be spread out. Usually it is not necessary to incise the mesenteric lymph nodes. They should be incised if they are enlarged or if there is any possibility that the animal has tuberculosis. The omentum, mesentery and any other fatty tissue that is going to be used for human consumption must be free of contamination.

The mesenteric lymph nodes of elk must be examined closely for any evidence of tuberculosis (TB).

In elk TB gains access to the body through the intestines and cause the formation of abscess in the mesenteric lymph nodes. TB abscesses contain liquid creamy white to yellow pus.

In other species (cattle & bison) TB enters via the lungs thus initial lesions are seen in the mediastinal lymph nodes. In these species there is a granulomatous (fleshy) reaction in the lymph nodes rather than the liquid pus evident in elk.

3. Visually examine the spleen and incise it if there are any abnormalities.
4. Visually examine the four compartments of the stomach (reticulum, rumen, omasum and abomasum).

Note: There may be evidence of localized peritonitis, or abscess formation, if the reticulum has been penetrated by a nail, or piece of wire.

5. Examine the kidneys.

Note: The PM examination of the kidneys may be done with the kidneys in the carcass or on the viscera table. In either instance they must be fully exposed for the inspector.

Common abnormalities observed in the kidney include:

a) Cysts

Note: Cysts are closed cavities, or sacs, that contain fluid. They can occur in any part of the body. They are relatively common in kidneys where they are believed to be caused by a developmental defect in the urinary tubules. When present they tend to get larger as the animal gets older.

b) Infarcts

Note: An infarct is an area of tissue that has died because its blood supply has been cut off. Because of the anatomy of the kidney blockage of small arteries causes death of a cone shaped area of tissue with the base of the cone on the outer surface of the kidney.

Most infarcts are pale and slightly depressed. An early infarct may be swollen and red. When infarcts are seen the inspector should closely examine the valves on the left side of the heart for any evidence of any growths on the heart valves (valvular endocarditis caused by bacterial infection). Infarcts occur when small pieces of these growths (emboli) break off then lodge in a smaller artery in the kidney.

6. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

TIPM – 08-E-03 Page 4 of 4 – OBJECTIVE/OUTCOME (continued)

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

When **localized** lesions are detected in the abdominal viscera and there is no evidence of any adverse effects on the wholesomeness of the rest of the carcass **only the affected organ or tissue is condemned.**

Condemnation, of the carcass and all organs, is justified when liver lesions are accompanied by jaundice and kidney lesions are accompanied by uremia.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-E-01 PM Inspection - Elk & Bison - Head
- 08-E-02 PM Inspection - Elk & Bison - Thoracic Viscera
- 08-E-04 PM Inspection - Elk & Bison - Carcass

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Elk & Bison - Carcass	08-E-04
REGULATORY REFERENCES <u>M-9 RSA 200 <i>Meat Inspection Act</i> (Current to 4/29/2009)</u> Sections 5(c) & 6 <u>AR 42/2003 <i>Meat Inspection Regulation</i> (Consolidated to 112/2009)</u> Section 47	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. To ensure a thorough PM examination, Meat Inspection Branch (MIB) Inspectors use a systematic approach. In the following order they examine the: <ol style="list-style-type: none">1. Head2. Thoracic (chest) viscera (organs)3. Abdominal viscera4. Carcass The intent of this document is to outline the procedures that are followed for a proper PM examination of elk & bison carcasses .	
OBJECTIVE/OUTCOME All elk & bison carcasses will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the thoracic viscera has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Designated abattoir personnel will prepare elk and bison carcasses in a manner that makes it suitable for inspection. Note: Proper presentation includes: <ol style="list-style-type: none">a) removing the viscera (internal organs);b) splitting the carcass;c) presenting the carcass before final trimming and/or washing A system will be in place to ensure that the thoracic viscera can be identified with the carcass and other internal organs and edible carcass parts until such time as all PM inspections have been completed. Note: This is done to comply with the requirements of section 6 of the <i>Meat Inspection Act</i> which requires that every portion of a carcass that is unfit for food must be condemned.	

MIB Inspectors will:

1. Conduct a visual inspection of the entire carcass.

Note: This inspection includes the:

- a) joints;
- b) outer muscular surfaces;
- c) diaphragm;
- d) peritoneum;
- e) pleura;
- f) neck

2. Palpate and incise (if deemed necessary) any observed abnormalities.

Examples of conditions seen on the post-mortem examination of elk and bison carcasses include:

- a) Arthritis

Note: Arthritis is defined as inflammation of a joint. One or more joints, in one or more limbs may be affected. Affected joints will be swollen. Arthritis may be infectious or non-infectious. Infectious arthritis will cause inflammatory reactions in the lymph nodes of the affected limb. When there are changes in the lymph nodes the entire quarter will be condemned. If the condition is deemed to be non-infectious only the affected joint needs to be removed.

- b) Abscesses

Note: Abscesses are accumulations of pus enclosed in a fibrous tissue capsule. Pus can vary greatly in color, odor and consistency depending on the type of bacteria present and the age of the abscess. Abscesses and surrounding tissues must be removed from the carcass. The carcass, or individual quarters, may be condemned in the case of multiple, or severe, abscesses, or where there are inflammatory changes in the lymph nodes draining that area of the carcass.

- c) Cysticercosis

Note: Cysticerci detected in elk carcasses are of no concern for human health. They are the intermediate forms of tapeworms that affect carnivores such as dogs, wolves and coyotes.

- d) Contamination

Note: Contamination is the presence of foreign material on the surface of the carcass. Most visible contamination is due to poor dressing procedures. Contaminated areas of the carcass must be trimmed in accordance with the directions of a MIB Inspector then the remainder of the carcass must be thoroughly washed. The carcass, or portions of it, will be condemned if, in the judgment of the inspector, the contamination is so severe that it cannot be completely removed by trimming.

e) Adhesions

Note: Adhesions are accumulations of fibrous (scar) tissue that form in animals that have recovered from pleuritis, or peritonitis. In the carcass, adhesions will be seen on the peritoneum, or pleura, which line the abdominal and chest walls respectively.

f) Jaundice

Note: Jaundice (also called icterus) refers to a yellow discoloration of the carcass. Liver disease and failure is the main cause of jaundice.

Carcasses are condemned for jaundice if there is severe yellow discoloration, or if there are other systemic changes in any of the organs. Carcasses that are only mildly affected can be held for 24 hours. If the jaundice disappears, in that time, the carcass can be passed otherwise it is condemned.

g) Bruising

Note: Bruises develop following injuries that cause bleeding into the muscles. With time the blood pigment (hemoglobin) breaks down. As this occurs the color of the bruise will change from dark red, to green, to yellow. Bruises are not hazardous to human health but affected tissues don't appear good so they are trimmed out. Inspectors have the authority to condemn the entire carcass when bruising is severe and widespread.

h) Injection Sites

Note: The muscles of the rump and neck area should be closely examined for any evidence of injection site lesions. These will appear as small, or large, localized areas of necrosis and discoloration of muscle tissue. The severity of the lesion will vary with what was injected. Fresh injection sites usually have some hemorrhages in them.

The carcass must be held when fresh injection sites are sent to the laboratory for residue testing.

If there is any doubt about whether an injection site is fresh or not it should be handled as if it were a fresh lesion.

i) Emaciation (cachexia)

Note: Emaciation is the technical term for an extremely wasted body condition. Animals can be thin without being emaciated. It is important for the MIB Inspector to differentiate between emaciation and thinness. If there is any normal looking fat on the surface of the heart, or around the kidney, the animal is not emaciated. Emaciated animals are condemned, thin ones are not.

j) Edema

Note: Edema refers to the accumulation of clear watery fluid in the muscles of the carcass. Edema can be localized, or generalized. The most common cause of generalized edema is heart failure. Localized edema is usually due to local circulation problems (in the blood, or lymph) or secondary to an inflammatory reaction. Portions of the carcass affected with edema are condemned.

3. Keep **control** of all **carcasses**, or parts of carcasses, that are “**held**” for **whatever reason**, following the PM examination **until the final disposition has been determined**.
4. Identify all carcasses, or portions thereof, that are condemned so that they will be handled in a manner that ensures that contamination of equipment, meat, or meat products, from other carcasses, does not occur.

Note: No part of a condemned carcass can be used for human consumption.

5. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector’s Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

- 08-A-01 PM Inspection - Red Meat Animals - General
- 08-A-02 PM Inspection - Red Meat Animals - Methods
- 08-A-03 PM Inspection - Red Meat Animals - Findings - General
- 08-A-04 PM Disposition after PM Inspection - All Species
- 08-E-01 PM Inspection - Elk & Bison - Head
- 08-E-02 PM Inspection - Elk & Bison - Thoracic Viscera
- 08-E-03 PM Inspection - Elk & Bison - Abdominal Viscera

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection- Rabbits	08-F-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Section 47	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE Section 47 of AR 42/2003 and section 5(c) of the <i>Meat Inspection Act</i> requires a post-mortem (PM) inspection on all red meat animals slaughtered in a “Licensed Meat Facility” (abattoir). Note: The PM inspection is done to detect any lesions (changes) caused by disease conditions. Determining the presence, or absence, of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption. The intent of this document is to outline the procedures that are followed for a proper PM examination of rabbits .	
OBJECTIVE/OUTCOME Domestic rabbits will be inspected in the manner set out in this document. Note: The procedure for the PM examination of the carcass has been prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD). In addition to prescribing these methods the MIB is also responsible for ensuring that the individuals performing the post-mortem inspection have the necessary training, knowledge, skills and ability. Abattoir personnel will present the carcass and viscera in a manner that facilitates examination of all external and internal surfaces and the viscera. Note: To accomplish this the abattoir operator must: <ul style="list-style-type: none">a) ensure that plant personnel know how to properly present carcasses for inspection;b) provide adequate lighting;c) provide adequate space both for the presenter and the inspector. Examples of improper presentation include: <ul style="list-style-type: none">a) contaminated viscera requiring the inspector to continually wash his/her hands;b) viscera still attached to the carcass and not adequately separated from the abdominal cavity, or fat;c) missing viscera. MIB Inspectors will monitor the manner of presentation and take appropriate action when standards are not met. Actions will include communication of required corrective measures to the appropriate plant personnel.	

MIB Inspectors will:

1. Conduct a thorough visual examination of the entire carcass.

Note: This examination will include all exterior surfaces of the carcass, the inner surfaces of the abdomen and chest cavities and all of the viscera.

2. Manipulate viscera to facilitate visual examination of the heart, liver and spleen.

3. Palpate the following organs and parts of the carcass:

- a) liver;

- b) both kidneys;

Note: The ureters should also be observed visually.

- c) popliteal and iliac lymph nodes;

- d) lymph nodes of the neck;

- e) pelvic muscles and muscles of the flank.

Note: These are common sites for cysts, bruises and abscesses.

Common Abnormalities seen during the post-mortem inspection of rabbits include:

- a) Abscesses

Note: Abscesses are accumulations of pus enclosed in a fibrous tissue capsule. Pus can vary greatly in color, odor and consistency depending on the type of bacteria present and the age of the abscess.

Based on MIB Inspector's judgment, carcasses with small well defined superficial abscesses (or scratches with only slight infection) not affecting the underlying tissues, can be trimmed.

When there are deep carcass abscesses, or there are multiple abscesses in the internal cavities, or organs, a systemic infection will be deemed to exist and the carcass will be condemned.

- b) Bruises

Note: Bruises are caused by injuries that cause bleeding into the tissues. As the blood pigment (hemoglobin) breaks down, over time, the color of the bruise will change from dark red to green to yellow.

Bruising is not a food safety issue but affected areas should be trimmed out.

Due to their small size the entire carcass of rabbits is more likely to be condemned, for bruising than other red meat animals.

- c) Blood Clots

Note: Carcasses with a large number of blood clots, or muscle hemorrhages, due to excessive, or improper stunning will be condemned.

d) Contamination

Note: Contamination simply refers to contact between edible portions of the carcass and anything that is inherently dirty.

Sound dressing procedures are very important in reducing the chance of contamination.

Common sources of contamination in rabbits include:

- i) Fur;
- ii) Feces (manure from the lower gastro-intestinal tract);
- iii) Ingesta (stomach contents);
- iv) Extraneous materials including grease stains and other foreign material.

Contaminated tissues can be trimmed from the carcass providing they are not too extensive. Contaminated internal organs are condemned and discarded. Carcasses that are excessively contaminated will be condemned.

e) Cysts

Note: Cysts are defined as any closed cavity, or sac, containing fluid.

In rabbits cysts are common in the pelvic muscles, or flank. They may be trimmed providing a thorough examination of the viscera reveals no evidence of a systemic condition.

f) Emaciation

Note: Emaciation is the technical term for an extremely wasted body condition. Animals can be thin without being emaciated. It is important for the MIB Inspector to differentiate between emaciation and thinness. If there is any **normal** looking **fat** on the surface of the heart, or around the kidney, the animal is **not emaciated**. Emaciated animals are condemned, thin ones are not.

g) Hepatitis

Note: Hepatitis means inflammation of the liver. It is recognized by the presence of multiple white, or yellow, spots, of variable sizes and shapes. In some cases the only change will be the presence of multiple pinpoint red spots.

In rabbits, most cases are caused by a microscopic parasite called coccidia.

h) Septicemia or Toxemia

Note: These are generalized conditions which affect the entire body.

Signs consist of small pinpoint hemorrhages on body organs, or tissues.

Affected carcasses are condemned.

TIPM – 08-F-01 Page 4 of 4 – OBJECTIVE/OUTCOME (continued)

i) Miscellaneous Conditions

Note: Rabbits may be affected by any other condition that affects red meat animals including tumors.

The reader is referred to the Regulatory Services Division Meat Inspection Manual or to TIPM document 08-A-03 for information on other disease conditions that may occur.

4. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector.

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

RELATED SECTIONS OF TIPM

08-A-01 PM Inspection - Red Meat Animals - General

08-A-02 PM Inspection - Red Meat Animals - Methods

08-A-03 PM Inspection - Red Meat Animals - Findings - General

08-A-04 PM Disposition after PM Inspection - All Species

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM - Poultry - General	08-G-01
REGULATORY REFERENCE <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Sections 47, 66 & 67	Initial Release Sept 1, 2009 Page 1 of 4
RATIONALE <p>Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>The PM examination is intended to detect any lesions, in the carcass, or any of its parts.</p> <p>Examination to determine the presence or absence of disease is critical in ensuring that all parts of the bird are wholesome and fit for human consumption.</p> <p>Note: A proper ante-mortem (before death) inspection is critical in detecting birds affected with disease conditions that may not result in visible changes in the carcass or internal organs.</p> <p>The need for a PM inspection is mandated in both the Alberta <i>Meat Inspection Act</i> (MIA) and in the Alberta <i>Meat Inspection Regulation</i> (AR 42/2003).</p> <p>Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.</p> <p>Section 67 of AR 42/2003 requires a complete post-mortem inspection of poultry immediately after slaughter.</p> <p>The purpose of this document is to outline, in general terms, responsibilities of Meat Inspection Branch (MIB) Inspectors and abattoir personnel in relation to PM inspections in poultry and ratites (ostriches, rheas & emus).</p>	
OBJECTIVE/OUTCOME <p>PM inspections of all poultry, including ratites, will be conducted, by “duly appointed” inspectors, immediately following slaughter.</p> <p>Note: “Duly appointed” inspectors are defined as individuals appointed under section 2(1) of the <i>Meat Inspection Act</i> of Alberta.</p> <p>All PM inspections will be done in accordance with the methods prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p>	

TIPM – 08-G-01 Page 2 of 4 – OBJECTIVE/OUTCOME (continued)

Note: The MIB is responsible for ensuring that all MIB Inspectors have the necessary training, knowledge, skills and ability to conduct a proper PM inspection.

Poultry carcasses may harbor bacteria such as *E. coli*, *Campylobacter* and *Salmonella sp.* To minimize the chance of accidental infection it is very important for MIB Inspectors to be careful about their personal sanitary procedures (e.g. frequent hand washing). It is “Common Industry Practice” for them to wear plastic, or rubber, gloves providing that the gloves are thin enough to ensure sensitivity, of the fingers, during palpation.

The PM inspection will include all parts of the carcass, viscera and any other portions that are going to be used for human consumption.

The abattoir operator will provide suitable facilities and properly trained personnel to assist the MIB Inspector in the conduct of a proper PM examination.

Note: Suitable facilities include:

- a) Adequate lighting;
- b) Adequate space;
- c) The ability to physically separate and **detain** any **carcasses and their parts**, in which abnormalities are detected;
- d) Salvage racks, or lines;
- e) Personnel knowledgeable about proper presentation methods.

Trained abattoir personnel will assist the MIB Inspector in the conduct of the PM inspection by:

1. Cleaning the carcass and it's parts in a hygienic manner.
2. Presenting the carcass and its parts in a manner that allows effective and efficient PM inspection and which ensures that all viscera are associated with the appropriate carcass.

Note: Consistent presentation is essential in ensuring optimal inspection efficiency and effectiveness for all classes of poultry. All carcasses must be hung in a manner that facilitates the examination of the external surfaces of the carcass, the internal cavity of the carcass and all of the viscera.

Following are some examples of improper presentation:

- a) Carcasses arriving at the inspection station with any part of the carcass other than the back facing the inspector;
- b) Carcasses hung by one leg;
- c) Carcasses arriving with a swinging motion excessive enough to interfere with the inspection process;
- d) Lack of uniformity relating to the viscera including but not restricted to the following:

TIPM – 08-G-01 Page 3 of 4 – OBJECTIVE/OUTCOME (continued)

- i. Viscera on the opposite side of the carcass;
- ii. Viscera in the middle of the abdominal opening;
- iii. Contaminated viscera requiring the inspector to continually wash his/her hands;
- iv. Viscera not properly separated from the abdominal cavity, or abdominal fat;
- v. Viscera caught up in the shackle;
- vi. No viscera.

In abattoirs where automatic evisceration equipment separates the viscera from the carcass the viscera sets must be positioned so that they arrive at the inspection station with their respective carcasses.

- e) Internal carcass errors including but not restricted to the following:
 - i) Inadequate opening cuts examples of which include the anus, or cloaca, remaining in the carcass or the presence of cross strips of skin or any other obstacle to proper inspection. A cut to within 2 cm of the keel is considered to be adequate for chickens and 3 cm for turkeys;
 - ii) Carcasses arriving where the viscera does not properly reflect the abdominal flap;
 - iii) Carcasses arriving with one or more organs left inside;
 - iv) Contamination of inner surfaces;
 - v) Mutilations caused by venting, or evisceration, equipment

3. Maintaining an appropriate line speed.

Note: Evisceration line speed shall not exceed the ability of the MIB inspector to perform a proper PM inspection or the ability of facility personnel to adequately perform their duties.

4. Re-hanging of carcasses, as required, in accordance with the recommendations of the MIB Inspector.

Note: Carcasses that have not been opened (drawn) or that have two legs out of the shackle (i.e. hung by the neck or wing) can be re-hung for reprocessing. They must be re-hung as soon as possible and must be kept separate from other carcasses awaiting disposition, or salvage. They must not be allowed to accumulate to the point where deterioration occurs.

5. Removal of condemned carcasses.

Note: The removal of condemned carcasses, before or after evisceration, must be done, as directed by the MIB Inspector, by a designated helper that has been trained to remove and dispose of such carcasses in a manner that limits any contamination of on-line facility personnel and/or equipment.

MIB Inspectors will:

1. Monitor presentation compliance at the inspection station.
2. Take appropriate action when standards are not met.

Note: MIB Inspectors have the authority and responsibility to take immediate action if abattoir personnel don't provide appropriate assistance during PM inspection procedures.

Actions that may be taken include:

- a) slowing down the rate of slaughter;
 - b) temporary suspension of inspection services until the situation has been corrected
3. Record PM findings that result in condemnations on the MIF - 4 (Certificate of Condemnation) and on the MIF - 5 (Inspector's Daily Report).

Note: These are official MIB documents. They must be:

- a) completed in their entirety;
- b) completed in a legible manner;
- c) signed by the MIB Inspector

The MIF - 4 provides information, on the condemnation, that the abattoir operator can give to the owner of the animal.

The MIF – 5 provides a summary of all condemnations and the code (reason) for the condemnation.

4. Provide the abattoir operator a copy of the “**Poultry Postmortem Cards**” when applicable.

Note: The use of this card is at the discretion of the MIB Inspector, thus this requirement is not always applicable.

Written procedures will be on file stipulating the processing steps for contaminated viscera that is salvaged for other purposes.

Note: Specific, approved procedures are required to ensure that salvaged viscera won't end up with, or in, products intended for human consumption.

RELATED SECTIONS OF TIPM

08-A-04 PM Disposition after PM Inspection - All Species

08-G-02 PM Inspection - Poultry - Methods

08-G-03 PM Inspection - Poultry - Findings - General

08-H-01 PM Inspection - Ratites

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Poultry - Methods	08-G-02
REGULATORY REFERENCE <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Sections 47, 66 & 67	Initial Release Sept 1, 2009 Page 1 of 3
RATIONALE <p>Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass, or any of its parts, regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>PM examinations are intended to detect lesions, in the carcass, or any of its parts.</p> <p>Note: Ensuring that a proper PM examination is conducted requires attention to detail including the use of recognized examination techniques.</p> <p>The need for a PM inspection is mandated in both the Alberta <i>Meat Inspection Act</i> (MIA) and in the Alberta <i>Meat Inspection Regulation</i> (AR 42/2003).</p> <p>Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.</p> <p>Examination to determine the presence or absence of disease is critical in ensuring that all parts of the bird are wholesome and fit for human consumption.</p> <p>Note: A proper ante-mortem (before death) inspection is critical in detecting birds affected with disease conditions that may not result in visible changes in the carcass or internal organs.</p> <p>The need for a PM inspection is also mandated in both the <i>Meat Inspection Act</i> and in AR 42/2003.</p> <p>Note: Section 5(c), of the Alberta <i>Meat Inspection Act</i> requires a post-mortem inspection before a carcass or any of its parts can be sold or offered for sale.</p> <p>Section 67 of AR 42/2003 requires a complete post-mortem inspection of poultry immediately after slaughter.</p> <p>The purpose of this document is to outline PM examination techniques that apply, in principle to all poultry including ratites (ostriches, rheas & emus).</p>	
OBJECTIVE/OUTCOME <p>Meat Inspection Branch (MIB) Inspectors will follow a routine that ensures that a thorough PM examination is conducted.</p> <p>Note: The PM inspection of poultry, with the exception of ratites, is primarily visual but palpation (feeling) and/or incision (cutting) may be required in certain instances.</p>	

TIPM – 08-G-02 Page 2 of 3 – OBJECTIVE/OUTCOME (continued)

Proper positioning of the carcass and viscera, by abattoir personnel is very important in ensuring that nothing is missed.

MIB Inspectors will visually inspect the:

1. Exterior of the carcass.

Note: Common findings include signs of fractures, bruises, blisters, tumors, skin conditions, etc.

2. Head and feet.

Note: Generally this isn't done if they are removed, from the carcass, prior to evisceration.

3. Abdominal cavity

Note: Common findings in the abdomen include contamination, tumors, generalized infections, etc.

4. Viscera

Note: Common findings include evidence of peritonitis, organ tumors, etc.

To properly visualize all of the viscera, particularly the heart, liver and spleen the inspector may need to grasp it.

Palpation will be conducted as required.

Note: In most instances palpation is not a major part of the PM examination of poultry but it is important under certain conditions. It is an important tool whenever the MIB Inspector suspects the presence of lesions that may not be readily apparent visually.

Palpation should be a routine practice on all lots of fowl and mature turkeys due the greater incidence of neoplasms and other conditions in these birds.

While not listed as specific post-mortem inspection techniques MIB Inspectors have two other tools at their disposal:

1. Sense of smell;

Note: The first indication of an abnormality may be an abnormal smell.

2. Digital cameras for consultation purposes.

Note: Regardless of how much experience a MIB Inspector has, there will always be things that are not clear cut.

In these instances it is highly recommended that they consult with their Regional Supervisor, Area Manager and/or the Division Veterinarian.

Pictures taken with a digital camera are valuable tools for consultation purposes.

Competent abattoir personnel, one (1), or more, will be positioned next to the MIB so they can assist with the PM inspection.

TIPM – 08-G-01 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

In accordance with the directions of the MIB Inspector the assistant will:

1. **Remove** obviously condemnable **carcasses** **before** **evisceration**.

Note: Instances where large numbers of birds are affected with generalized disease would be an example where birds may be condemned and removed before evisceration.

2. Remove condemned carcasses and viscera from the evisceration line following the PM inspection.
3. Trim defects, on line, or remove the carcass to a reconditioning rack, or line.

Note: Items such as breast blisters, bruises, fractures, minor contamination, etc. may be efficiently removed on line. Processing defects including contamination of the abdominal cavity with feces, bile or crop contents, over scalding, mutilation, etc. may take too much time for on line trimming.

Whenever there is insufficient time to do the job properly the affected bird must be discarded or placed on a reconditioning rack or line or removed and disposed of if one is available.

The following tables categorize the different types of common defects that require the removal of the broiler chicken, fowl or turkey carcass from the evisceration line.

Note: In these tables the term NTOL means “Not Trimmable on the Line”. The intent is to allow, in some instances, salvage by reconditioning at a different location (e.g. on a salvage rack). A number of conditions too extensive for removal on the line will result in condemnation of the entire carcass and viscera.

RELATED SECTIONS OF TIPM

08-A-04 PM Disposition after PM Inspection - All Species

08-G-01 PM Inspection - Poultry - General

08-G-03 PM Inspection - Poultry - Findings - General

08-H-01 PM Inspection - Ratites

Attachment - TIPM Document 08-G-02

Carcass Defects	Chicken	Turkey	Fowl
Ascities/Peritonitis	X	X	X
Cellulitis (NTOL) and Peri-Cloacal Cellulitis	X	X	X
Dark Colored Carcasses	X	X	X
Emaciation (extreme thinness)	X	X	X
Inadequate Bleeding (bright red carcass)	X	X	X
Keel Abscess/ Infected Breast Blister (NTOL)	X	X	X
Pendulous Crop (with emaciation)	X	X	X
Septicemia / Toxemia	X	X	X
Xanthomatosis			X
Avian Keratoacanthoma (NTOL)	X		X
Extensive Bruising (NTOL)	X	X	X
Extensive Dermatitis (NTOL)	X	X	X
Extensive Mutilation (NTOL)	X	X	X
Marek's Disease (cutaneous form, NTOL)	X	X	X

Viscera Defects	Chicken	Turkey	Fowl
Adenocarcinoma		X	
Airsacculitis	X		X
Ascities	X	X	
Contamination: (Fecal, bile, Ingesta, Extraneous Material, Intestine/Cloaca)	X	X	X
Hepatitis	X	X	X
Lymphoid Leukosis		X	
Visceral Marek's	X		
Salpingitis/Peritonitis	X	X	X
Septicemia/Toxemia	X	X	X
Other Conditions, e.g., Osteomyelitis, Tumors	X	X	X

Internal cavity defects	Chicken	Turkey	Fowl
Adenocarcinoma			X
Airsacculitis			X
Contamination (Fecal, Bile, Ingesta, Extraneous material)	X	X	X
Pericloacal Cellulitis	X	X	X
Salpingitis/Peritonitis	X	X	X
Other conditions i.e., Odor, Emaciation, Tumors	X	X	X

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection - Poultry - Findings - General	08-G-03
REGULATORY REFERENCE <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c)	Initial Release Sept 1, 2009
<u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Sections 47, 66 & 67	Page 1 of 9

RATIONALE

Most disease conditions cause visible changes (lesions) in the carcass of affected birds therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.

Note: Lesions are defined as any visible abnormality in a carcass, or any of its parts, regardless of cause. They may be caused by disease, or other factors such as physical injury.

The **PM examination** is intended to **detect** any **lesions**, in the **carcass**, or any of its parts.

Examination to determine the presence or absence of disease is critical in ensuring that all parts of the bird are wholesome and fit for human consumption.

Note: A proper ante-mortem (before death) inspection is critical in detecting birds affected with disease conditions that may not result in visible changes in the carcass, or internal organs.

The need for a PM inspection is mandated in both the Alberta *Meat Inspection Act* (MIA) and in the Alberta *Meat Inspection Regulation* (AR 42/2003).

Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.

Section 67 of AR 42/2003 requires a complete post-mortem inspection of poultry immediately after slaughter.

The **purpose** of this document is to **outline**, in general terms, **common abnormalities** encountered, by Meat Inspection Branch (MIB) Inspectors, in **poultry**.

OBJECTIVE/OUTCOME

Poultry carcasses and viscera will be closely examined for lesions (abnormalities).

Following is a list of abnormalities, in poultry, commonly seen by MIB Inspectors:

Note: **This listing is not intended to be comprehensive** nor is it intended to provide sufficient information for the reader to perform a PM examination. It is simply intended to provide the reader with some basic understanding about what inspectors are looking for.

For more information the reader is referred to module 6 of the Regulatory Services Division Meat Inspection Manual (MIM). All MIB Inspectors have a complete copy of the MIM and there should be copies of module 6, in the meat inspector's office, at every abattoir.

1. Adenocarcinoma

Adenocarcinomas are the **most common** type of **tumor** (cancer) seen in **fowl**.

Affected birds will be thin. Numerous whitish to yellow nodules may be seen throughout the intestines and the mesentery (tissue that suspends the intestine from the upper abdominal wall). These nodules which are usually 3 mm to 5 mm in size are often present on the duodenum (first part of the small intestine) Palpation (feeling) may reveal smaller nodules that feel like grains of sand.

Carcasses are condemned when there are multiple tumors or, if metastasis (spread) to other organs has occurred, or there is any indication of emaciation, or other systemic change.

2. Airsacculitis

Airsacculitis refers to infection and/or inflammation of the air sacs which are located in the body cavity of all birds. Normal air sacs are very thin and transparent.

This condition causes variable degrees of thickening and cloudiness to these membranes. In the earliest stages there is only mild thickening and cloudiness. In later stages there will be accumulations of yellow cheesy material on the air sacs.

Disposition of the carcass depends on the severity of the lesion. In mild cases the carcass can be approved after removal of the air sacs providing no other tissues are affected. The entire carcass will be condemned when there are other changes including peritonitis, emaciation, cyanosis, etc.

3. Arthritis

Arthritis is defined as inflammation of a joint. One or more joints in one, or both, legs, or wings, may be affected.

Note: It is possible to have inflammation without infection.

Arthritis can be caused by infection, or injury. The final disposition depends on the inspector's judgment of whether infection is present or not.

Note: When infection is present the joint fluid is usually cloudy due to the presence of pus. In non-infectious arthritis (caused by injury or degenerative joint disease) there will be increased joint fluid but it will have a normal clear appearance or, at worst, it will only contain some blood.

Birds with arthritis that show systemic changes (e.g. emaciation) will be condemned. In milder cases only the affected leg is removed and condemned.

In the case of non- infectious arthritis simply removing the affected joint may be all that is required.

4. Ascites

Ascites is a condition in which there is an accumulation of watery fluid in the abdomen. This condition is particularly common in broiler chickens. The basic cause is heart failure precipitated by rapid growth. Affected birds will have swollen abdomens due to the accumulation of watery fluid.

TIPM – 08-G-03 Page 3 of 9 – OBJECTIVE/OUTCOME (continued)

Disposition of the carcass depends on the severity of the condition and whether there are any other systemic effects. Birds are condemned if there are signs of systemic effects including cyanosis, emaciation and generalized edema (accumulation of fluid in the tissues) affecting the muscle tissues or under the skin.

5. Bruising

Bruises are areas of discoloration caused by the breakdown of blood pigments (hemoglobin). Bruises will develop wherever a significant amount of bleeding has occurred. The color of a bruise will vary from dark red, to green, to yellow, depending on the stage of hemoglobin breakdown.

Mild bruises can be trimmed out. If the bruising is extensive the entire carcass may be condemned.

6. Cellulitis

Cellulitis is an infectious process that results in the accumulation of cheesy pus like material in the tissues of birds.

Note: Birds do not produce significant amounts of fibrous (scar) tissue in response to infections thus they do not form abscesses.

Any species of bacteria that gain access to the body, through the skin, is capable of causing cellulitis. Access occurs through puncture wounds or scratches therefore cellulitis can occur anywhere in the body.

Note: The two most common areas for cellulitis, in poultry, is around the cloacal opening (vent) and the breast. Cellulitis around the vent is more common in broilers while cellulitis of the breast is more common in turkeys where it is often secondary to a breast blisters.

A common sign of cellulitis, in unopened carcasses, is thickened, yellow colored, skin along with a honeycombed appearance. The thick underlying cheesy material, of cellulitis, is readily apparent once the skin is opened.

Disposition of the carcass depends on the severity of the condition. Carcasses with only slight thickening and yellowing of the skin and no apparent affect in the underlying tissues can be trimmed on-line.

Note: Birds with evidence of cellulitis around the cloaca should be removed from the line for closer examination to determine the severity.

Chicken carcasses with skin lesions smaller than 2 cm x 2cm, including lesions on the legs and the wings, of any dimension, may be passed if the handling of these carcasses is included in the abattoirs HACCP system.

Note: The MIB Inspector will determine, on a case by case basis, the criteria for the size of lesions that may be trimmed on-line for turkeys. As a guideline lesions larger than 3 to 4 cm at their greatest width are considered to be too extensive for trimming.

7. Contamination

There are many potential sources of contamination for the carcass, or viscera. Examples include feces (manure), ingesta (stomach contents), bile and external material such as grease. Most forms of contamination are obvious to the naked eye. Bile will cause discoloration of any tissue that it comes into contact with.

Note: Improper adjustment of automatic evisceration machines may result in a portion of the intestines remaining with the giblet pack. This is also considered to be a form of contamination.

Depending on the extent of contamination the carcass may be trimmed, or condemned in its entirety.

Note: Contaminated viscera should always be discarded.

In plants where viscera is being harvested the MIB Inspector will evaluate viscera harvesting operations to ensure that they are adequate and conducted in accordance with the facility's written program.

Note: Handling of condemned viscera is not considered to be a significant problem providing the abattoir is not harvesting edible viscera or if an effective program is included within a **written program**, which ensures that contaminated viscera are not harvested as edible.

8. Cyanosis (Dark Colored Carcasses)

Cyanosis is caused by a lack of oxygen.

Note: Birds that are under stress from transportation, crowding, lack of ventilation, severe climatic conditions, etc. may be short of oxygen at the time of death.

Cyanosis is characterized by darkening of affected carcasses.

Note: The degree of darkening will vary.

Severely affected carcasses (those in which the breast muscle is as dark as the leg muscles) will be condemned. If there is only slight discoloration of the breast muscle the carcass can be passed providing it is in good body condition.

9. Emaciation

Emaciation is the technical term for a carcass that is in an extremely wasted (thin) or poor condition.

Note: Emaciated carcasses will not have any normal fat. Remaining fat have a water jelly like appearance. This condition is called serous atrophy of fat. There will also be pronounced wasting of muscle tissues (most evident in the breast) and the muscles will be dark.

Emaciated carcasses are condemned.

Note: It is important for the MIB Inspector to differentiate between carcasses that are thin and those that are emaciated. The condition of the fat is the main differentiating feature.

10. Hepatitis

Hepatitis is the technical term for inflammation of the liver. Many different infectious agents including viruses, bacteria and parasites can cause hepatitis in birds.

Depending on the cause the lesions of hepatitis will vary greatly. In most cases there will be evidence of necrosis (death of tissue) within the liver. Areas of necrosis appear as variable sized pale areas. In some cases the liver will be swollen and discolored. Pinpoint (petechial) or blotchy (ecchymotic) hemorrhages may be present.

TIPM – 08-G-03 Page 5 of 9 – OBJECTIVE/OUTCOME (continued)

In all cases of hepatitis the liver is condemned. The carcass is not condemned unless there is evidence of emaciation, or other systemic changes.

Note: As a guideline the carcass and remaining viscera will be passed if the liver has a normal size, sharp edges, regardless of its color.

It is important for the MIB Inspector to differentiate between hepatitis and a condition called fatty liver. Fatty livers will be light brown, to yellow and will have a greasy texture on their cut surface. Fatty livers may actually float if the condition is advanced. Fatty livers are caused by metabolic imbalances and have no affect on the suitability of the carcass for human consumption.

11. Keratoacanthoma

This is a skin tumor of birds.

Note: This tumor used to be called a “Squamous Cell Carcinoma”.

Classical signs, of this tumor, consist of deep craters, or ulcers, in the skin. They have raised edges.

Note: These ulcers can occur anywhere on the body and in some cases will spread (metastasize) to internal organs.

The entire carcass is condemned when the skin lesions are too extensive for trimming, or if the tumor has spread to the internal organs, or the bird is showing evidence of emaciation. When the lesions are few in number and the bird is in good condition only the affected areas are trimmed.

12. Leiomyoma and Leiomyosarcoma

These are muscle tumors. The leiomyoma is benign (non life threatening) and the leiomyosarcoma is malignant (life threatening because they will spread).

Leiomyomas will range from pea to golf ball size. They are usually firm and encapsulated. The cut surface has a smooth, white, shiny appearance. They often develop in the muscles in the wall of the oviduct.

Leiomyosarcomas tend to originate in the intestinal tract. While similar in appearance they are not as well encapsulated as the leiomyoma.

Note: It is not uncommon to see secondary tumors in the liver, or lungs.

The carcass is always condemned if there is evidence of metastasis to the liver, or lungs, or if there is evidence of emaciation, or other systemic changes.

13. Leukosis Sarcoma Group

The Avian Leukosis Sarcoma Group includes many different types of tumors that occur in chickens. Lymphoid Leukosis is the type that occurs most frequently. It also goes by the names of “Big Liver Disease”, “Visceral Lymphoma” and “Lymphomatosis”.

Note: Tumors in the Leukosis group do not occur in birds under 6 weeks of age thus they are **not seen in broilers**.

The tumors vary in size from pinpoint to large nodules. They occur with greatest frequency in the spleen and liver but may also occur in the intestines, mesentery, peritoneum, ovaries, testicles, heart and kidneys.

Affected carcasses are condemned.

14. Marek's Disease

Marek's Disease is a tumor of chickens caused by a Herpes virus. There are three distinct forms of Marek's disease namely the nervous, cutaneous and visceral forms.

Note: The nervous form will only be detected on the ante-mortem (before death) inspection.

The cutaneous form is characterized by the formation of nodules in the feather follicles.

Note: Most tumors only fill the feather follicle but, in some cases, they may be up to several cm in diameter.

Lesions in the visceral form are very similar to those in the Leukosis Sarcoma Group.

Note: Marek's Disease will affect young birds thus may be seen in broilers. The development of a vaccine has greatly reduced the frequency of Marek's Disease.

Birds with the nervous, or visceral form, are condemned. Skin lesions may be trimmed if not too severe.

15. Mutilation

Mutilation refers to conditions such as PM (after death) fractures, torn skin and muscle, crushing, etc.

Note: Faulty adjustment of automatic dressing equipment is the primary cause of mutilation.

The carcass is condemned when lesions are so extensive that trimming is not an option. When the damage is minor, or localized, the affected portions are trimmed and condemned.

16. Overscald

Overscald occurs when carcasses are left in the scalding tank too long or the water is too hot.

In this condition the superficial muscle layers, particularly of the breast, will have a cooked appearance.

Note: Carcasses that have been over scalded will often have torn skin. The scalding softens the skin making it more susceptible to tearing. The primary concern with this condition is contamination of the carcass by materials that gain entry through the torn skin.

Carcasses are condemned when there is noticeable cooking of the breast muscles, tears in the skin and mutilation of the carcass.

Note: When there is only mild cooking and the tears in the skin are localized (e.g. wings only) the carcass can be passed following removal of the affected area(s).

When the skin has not been broken and there is moderate, or deep, cooking the carcass can be used following manual, or mechanical, deboning. The carcass is passed, intact, if the skin is not broken and there is only slight white discoloration of the superficial layers of the breast muscle.

17. Pendulous Crop

This condition occurs in both chickens and turkeys. The crop will be severely distended and the contents are usually liquid and often have a sour smell.

Note: The excessive size of the crop increases the chance of contaminating the carcass from spilled contents from rupture of the crop as it is being removed.

The carcass is condemned if there is evidence of emaciation or if a sour odor remains with the carcass, after the crop has been removed.

18. Peritonitis

Peritonitis refers to inflammation of the peritoneum.

Note: The peritoneum is the smooth, shiny, thin tissue that covers the viscera and inner wall of the abdomen.

Peritonitis is seen most often in fowl.

Note: Any species of bacteria that enters the abdomen is capable of causing peritonitis. In fowl, peritonitis is usually due to an extension of salpingitis (see below).

Yolk sac infections are a common cause of peritonitis in broilers but affected birds seldom survive to get to slaughter.

Peritonitis shows up as an accumulation of whitish, to yellow, opaque, cheesy material in the abdomen. In many cases there is also an odor as well.

Affected carcasses are condemned.

19. Salpingitis

Salpingitis is the term for inflammation of the oviduct. The oviduct is the tubular organ in which the egg develops.

Note: Most cases, in broiler pullets and hens, are caused by infection with a bacterium called *E. coli*.

In laying hens the oviduct will be filled with cheesy material that often has a foul smell. Peritonitis may also be present and many birds will be thin or emaciated.

In pullets the lesion may be the size of a single egg or may fill the entire organ.

Note: Pullets often have air sacculitis along with salpingitis.

Carcasses are condemned if there is evidence of peritonitis and/or air sacculitis, emaciation or other systemic changes.

When the lesions are confined to the oviduct and there is no evidence of emaciation, the carcass can be passed.

20. Septicemia and Toxemia

Septicemia means the presence of disease causing organisms (bacteria, or viruses) in the blood. Toxemia refers to the presence of toxins (poisons) in the blood.

Note: There will be some degree of toxemia in cases of septicemia from the toxins produced by the infectious agent but it is possible to have poisons in the blood without any infectious agents being present. For example toxins could be absorbed from an area of cellulitis, or an area of necrosis (dead tissues). Liver and kidney failure will also cause toxemia.

It is very difficult to differentiate between these two conditions as their symptoms are relatively non specific.

Ante-mortem symptoms consist of listlessness and depression. Affected birds may have a bluish tinge to the skin.

Note: A fever is a differentiating feature. There is usually a fever with a septicemia but not in a toxemia.

Symptoms, on the PM inspection, consist of darkened muscles and the presence of hemorrhages.

Note: Hemorrhages usually indicate septicemia rather than toxemia. Also septicemia is often accompanied by any one, or more, of the following conditions: air sacculitis, perihepatitis, pericarditis and/or enlargement of the spleen.

Carcasses affected with septicemia, or toxemia, are condemned.

21. Squamous Cell Carcinoma

See above under Keratoacanthoma.

22. Synovitis

Synovitis refers to inflammation of the synovial membranes. Synovial membranes are present in joints and tendon sheaths. A number of different infectious agents can cause synovitis.

Note: In broilers and turkeys a specific condition called “Infectious Synovitis” is caused by infection with a micro-organism called “Mycoplasma synoviae”. There are also viruses that cause synovitis.

In cases of infectious synovitis, other lesions consist of an enlarged liver and spleen and greenish discoloration of the internal organs. The hock joint is often swollen due to the accumulation of fluid. Other joints can also be affected.

Another type of synovitis (caused by a reovirus) results in inflammation of the Achilles tendon. In this condition it is not uncommon for the Achilles tendon to rupture resulting in bleeding and eventual bruise formation.

Carcasses are condemned for synovitis when there is evidence of emaciation, or other systemic changes.

23. Xanthomatosis

This is a rare skin condition of fowl. Generally it doesn't have any effect on the overall health of the bird.

Nodular swelling of the wattles is common in this condition.

Note: In addition there may also be swellings in the breast, abdomen and legs.

In early cases the nodular swellings are soft and contain small amounts of honey colored liquid. Older lesions are firm and have a chalky appearance on the cut surface.

The carcass is condemned when the lesions are extensive, or there is evidence of emaciation, or other systemic changes.

RELATED SECTIONS OF TIPM

08-A-04 PM Disposition after PM Inspection - All Species

08-G-01 PM Inspection - Poultry - General

08-G-02 PM Inspection - Poultry - Methods

08-H-01 PM Inspection - Ratites

TECHNICAL INTERPRETATION POLICY MANUAL (TIPM)

SUBJECT: PM Inspection- Ratites	08-H-01
REGULATORY REFERENCES <u>M-9 RSA 200 Meat Inspection Act</u> (Current to 4/29/2009) Section 5(c) <u>AR 42/2003 Meat Inspection Regulation</u> (Consolidated to 112/2009) Sections 47, 66 & 67	Initial Release Sept 1, 2009
	Page 1 of 3
RATIONALE <p>Most disease conditions cause visible changes (lesions) in the carcass of the affected animal therefore, the post-mortem (PM) examination is considered to be the focal point of meat inspection.</p> <p>Note: Lesions are defined as any visible abnormality in a carcass or any of its parts regardless of cause. They may be caused by disease, or other factors such as physical injury.</p> <p>The PM examination is intended to detect any lesions, in the carcass, or any of its parts.</p> <p>Examination to determine the presence or absence of disease is critical in ensuring that all parts of the animal are wholesome and fit for human consumption.</p> <p>Note: A proper ante-mortem (before death) inspection is critical in detecting animals affected with disease conditions that may not result in visible changes in the carcass or internal organs.</p> <p>The need for a PM inspection is mandated in both the Alberta <i>Meat Inspection Act</i> (MIA) and in the Alberta <i>Meat Inspection Regulation</i> (AR 42/2003).</p> <p>Note: Section 5(c), of the MIA states that PM inspection must be performed before a carcass, or any of its parts, can be sold, or offered for sale.</p> <p>Sections 66 & 67 of AR 42/2003 state the requirements for the PM inspection of poultry following slaughter. Ratites (ostriches, emus, rheas, etc.) are covered by these sections.</p> <p>The purpose of this document to outline PM techniques, which apply, in principle, to the inspection of ratites.</p>	
OBJECTIVE/OUTCOME <p>PM inspections will be conducted, by “duly appointed” inspectors, on all ratites, immediately following their slaughter.</p> <p>Note: “Duly appointed” inspectors are defined as individuals appointed under section 2(1) of the MIA.</p> <p>The term ratite applies to a number of large flightless birds including ostriches, emus and rheas. These birds are susceptible to the same disease conditions as poultry. The principles in the TIPM documents, for poultry, that are referenced at the end of this document also apply to ratites.</p> <p>All PM inspections will be done in accordance with the methods prescribed by the Meat Inspection Branch (MIB) of the Regulatory Services Division (RSD) of Alberta Agriculture and Rural Development (ARD).</p>	

Note: The MIB is responsible for ensuring that all MIB Inspectors have the necessary training, knowledge, skills and ability to conduct a proper PM inspection.

MIB Inspectors will:

1. Use the techniques of visual examination, palpation and incision while conducting a routine post-mortem examination of ratites.

Visual Examination

All parts of the carcass and internal organs will be observed visually. This simply means that the inspector looks at everything.

Note: The inspector needs to follow a set pattern, or sequence, to ensure that everything is looked at. Proper positioning of the internal organs, by abattoir personnel is also very important in ensuring that nothing is missed.

Palpation

Internal organs intended for human consumption will be palpated.

Note: Palpation is defined as physically feeling, or touching, an object.

Palpation will be sufficiently firm to detect deep-seated lesions.

Note: When there are no abnormalities palpation makes it unnecessary to incise the organ. Incision will often affect the sale value of the organ.

Incision

Certain organs will be incised routinely and others will be incised at the discretion of the MIB Inspector.

Note: Incision is often the only way to tell what is causing a swelling. Inspectors must exercise caution to ensure that incision doesn't cause contamination of the carcass or other edible organs.

2. The following structures will be inspected visually.

- a) Head and feet

Note: This is only done when the head and feet are not removed from the carcass before evisceration. MIB Inspectors should pay particular attention to the eyes and sinuses for any evidence of infection.

- b) Exterior of the carcass

Note: Common findings include signs of bruises, blisters, tumors, skin conditions, etc.

- c) Interior of the carcass before removal of the viscera

Note: This is done so that the abdominal and the thoracic air sacs can be observed while they are still in position.

The kidneys should also be observed while they are still in the carcass then removed for closer examination.

The interior should also be observed following removal of the viscera.

TIPM – 08-H-01 Page 3 of 3 – OBJECTIVE/OUTCOME (continued)

3. The viscera will be observed and the following organs will be palpated and incised if deemed necessary:

- a) Heart
- b) Lungs
- c) Liver
- d) Spleen
- e) Kidneys
- f) Esophagus
- g) Gizzard
- h) Intestines

Note: The heart must be incised through the intra-ventricular septum to expose the inner surfaces for observation.

The liver, spleen and kidneys should be palpated routinely.

The neck, heart, gizzard and liver may be salvaged as edible if handled and processed in a sanitary manner.

Kidneys cannot be salvaged for human consumption unless the producer provides data indicating that heavy metals (primarily Cadmium) are within a range acceptable to Health Canada.

While not listed as specific post-mortem inspection techniques, MIB Inspectors have three other tools at their disposal:

1. Sense of smell;

Note: Often the first indication of an abnormality may be an abnormal smell.

2. Digital cameras for consultation purposes;

Note: Regardless of how much experience an inspector has things will come up that are unclear. In these instances it is highly recommended that the inspector consult with their Regional Supervisor, Area Manager and/or the Division Veterinarian. Pictures taken with a digital camera are valuable tools for consultation purposes.

3. Laboratory Examination.

Note: It is not always possible to determine the cause of a lesion. Laboratory examination can help with this determination. For example tissue samples could be submitted for microscopic examination. Another example would be the submission of an injection site lesion to determine whether antibiotics are present.

Determination of the cause is important in determining whether the condition requires condemnation or not. The carcass and its portions have to be detained, under a held tag, until laboratory test results come back.

RELATED SECTIONS OF TIPM

08-A-04 PM Disposition after PM Inspection - All Species

08-G-01 PM Inspection - Poultry - General

08-G-03 PM Inspection - Poultry - Findings - General