USDA Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Poultry Inspection

Food Inspector
Accelerated Promotion
Program

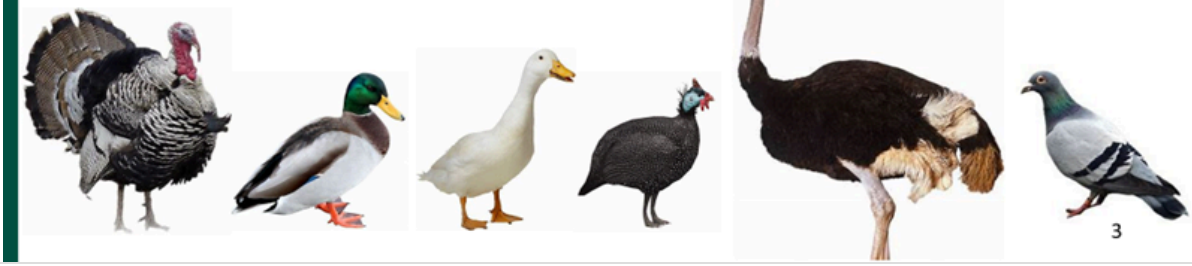
Key Points

- Poultry Anatomy
- Ante-mortem Inspection
- Good Commercial Practices
- Post-mortem Inspection

What is Poultry?

9 CFR 381.1 defines poultry as:

- Any domesticated bird, whether live or dead, including chickens, turkeys, ducks, geese, guineas, ratites, or squabs (young pigeons from one to about thirty days of age).



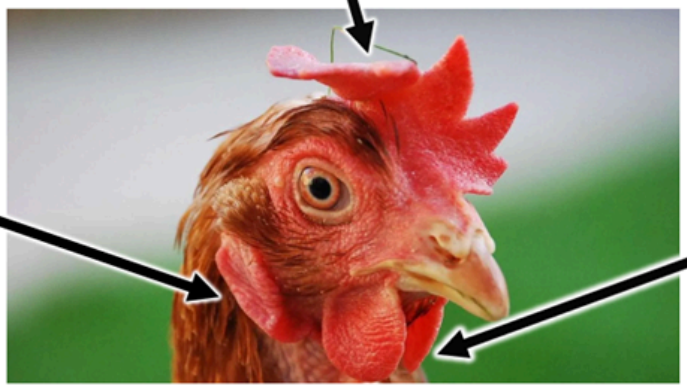
Poultry Anatomy

Poultry Anatomy

External Organs

Comb, Wattles, and Lobes

Comb- Fleshy growth on top of head



Ear Lobes

Fleshy flaps of skin on either side of the head, above the wattles and behind the eye

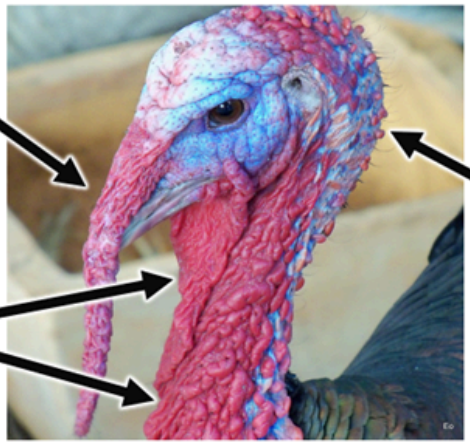
Wattles

Fleshy flaps of skin that hang on either side of the throat, starting just behind the beak

Snood, Wattles, and Caruncles

Snood

Long growth of skin, grows from base of beak and hangs down over beak



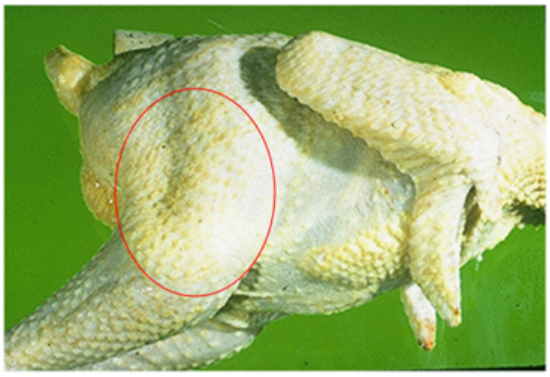
Caruncles

Bumpy growths on head and neck

Wattle

Reddish growth covering throat and neck

Feather Tracts & Follicles



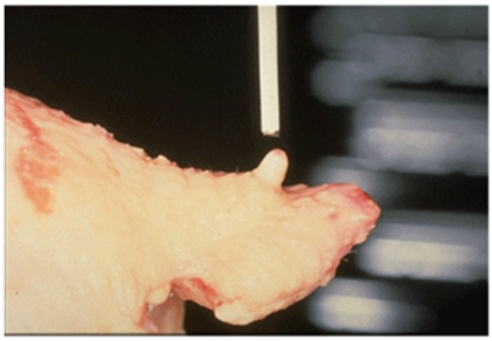
Feather Tracts

(Thigh tract circled)

Feather Follicles

Feathers arise from feather follicles.

Uropygial Gland (Preen Gland, Oil Gland, Oil Bag)

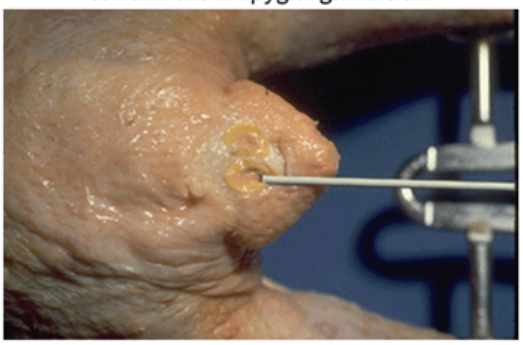


Intact Uropygial Gland

A tubular oil gland that lies beneath the skin at the base of the tail.

Partial Uropygial Gland

The external uropygial gland has been partially removed, exposing the sacs beneath that contain the uropygial gland's oil.



External Anatomy Summary

Poultry Anatomy

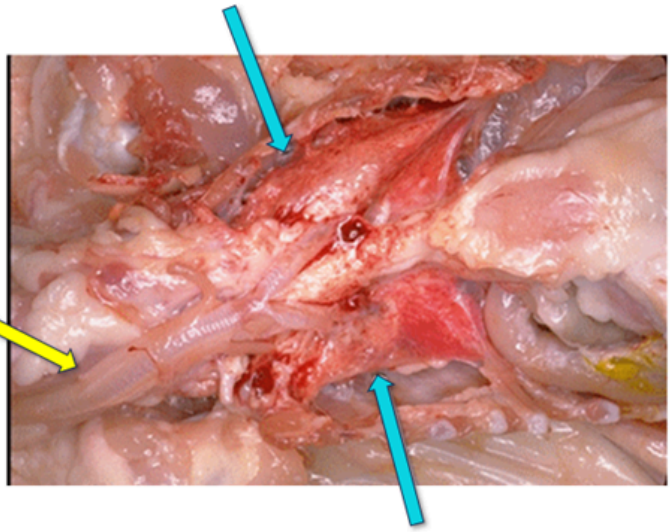
Respiratory System

Trachea & Lungs

Trachea

(yellow arrow)

Travels from the beak down to the lungs



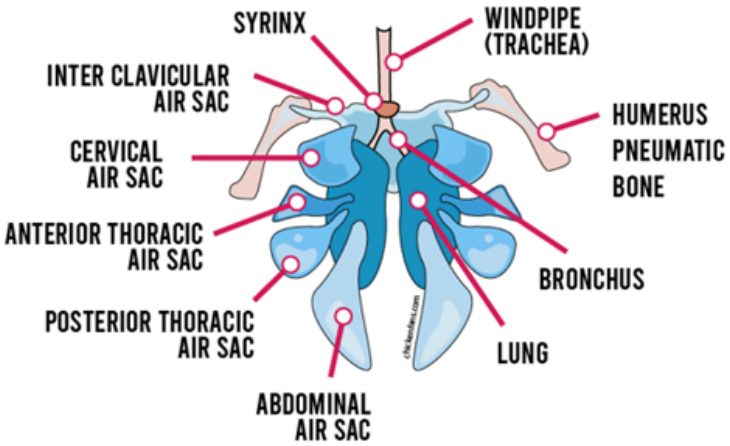
Lungs

(blue arrows)

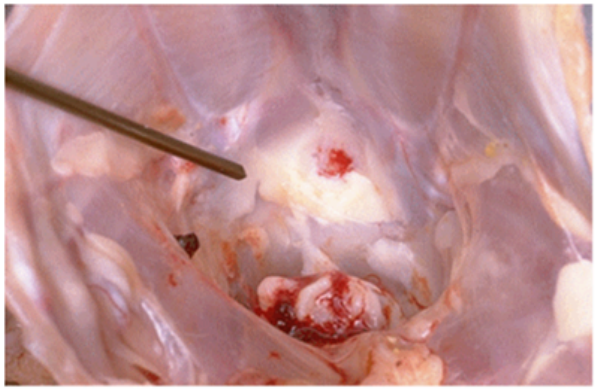
Shaped to fit around the ribs and spine

Air Sac Summary

9 Air Sacs

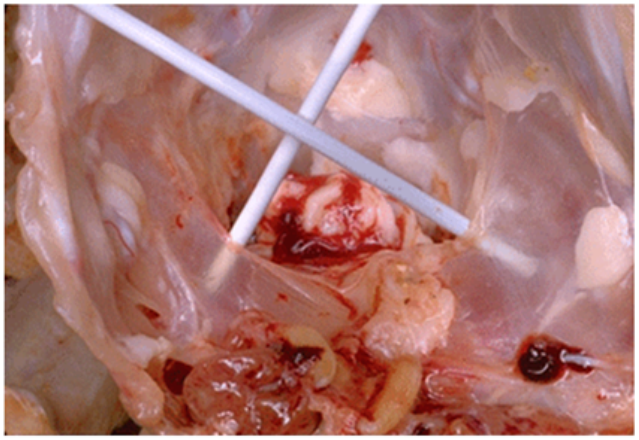


Interclavicular Air Sac



- Communicates with “pneumatic” humerus bone in wing
- Important to remember when discussing upcoming post-mortem slides

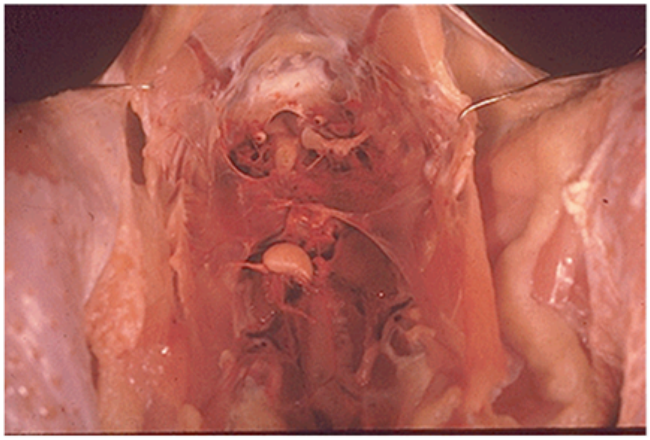
Thoracic Air Sacs



- Located in the area of the lungs
- Most likely to remain intact during processing

- ***NOTE**: normal, transparent appearing healthy membranes shown*

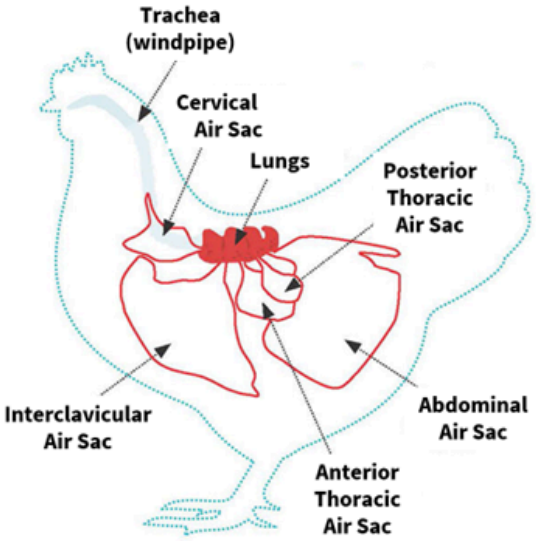
Abdominal Air Sacs



- Located in the abdominal part of the body cavity

Respiratory System Summary

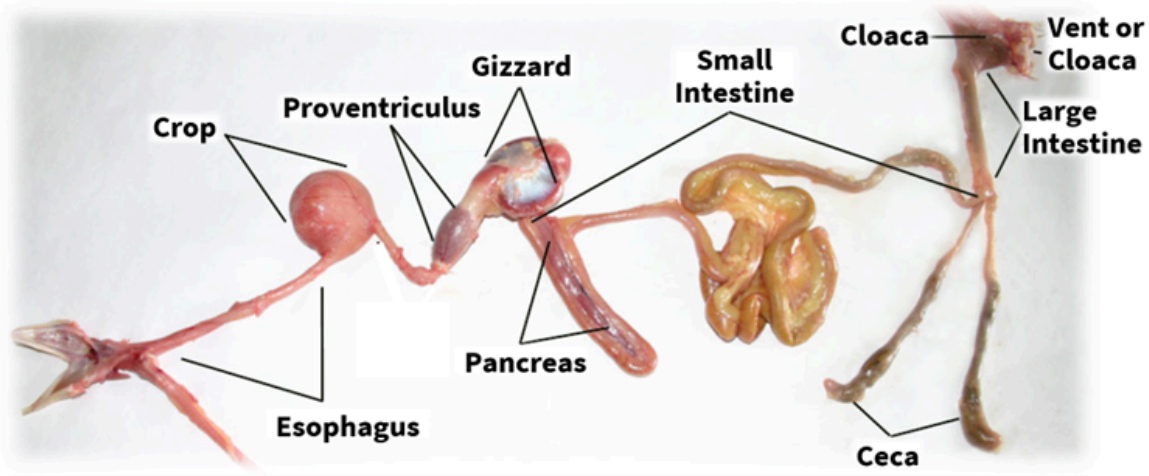
A chicken's respiratory system is very complex!



Poultry Anatomy

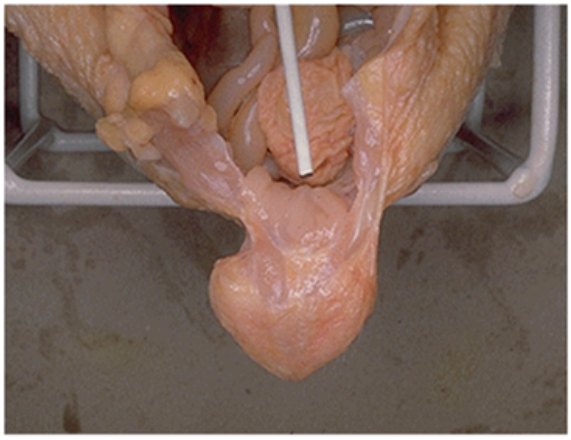
Digestive System

Digestive Tract

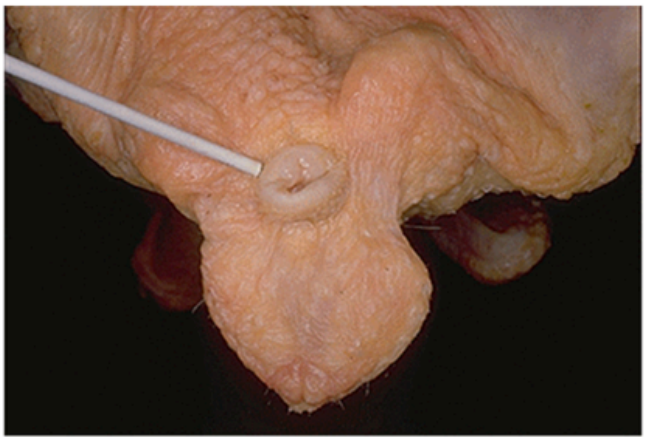


Bursa of Fabricius, Cloacal Bursa, Rosebud

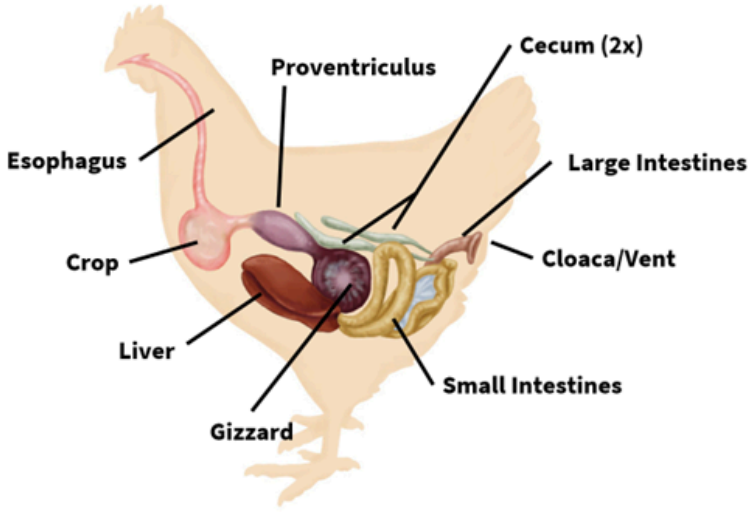
Note: left image=intact Bursa of Fabricius ; right image=opened Bursa of Fabricius



Vent, Anus, Cloaca

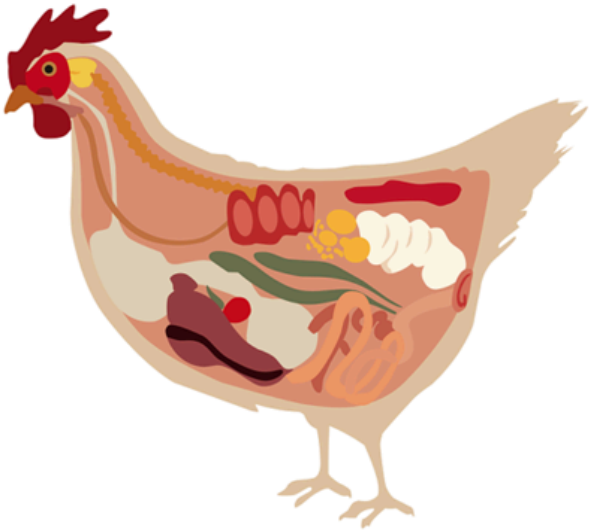


Digestive Tract Summary



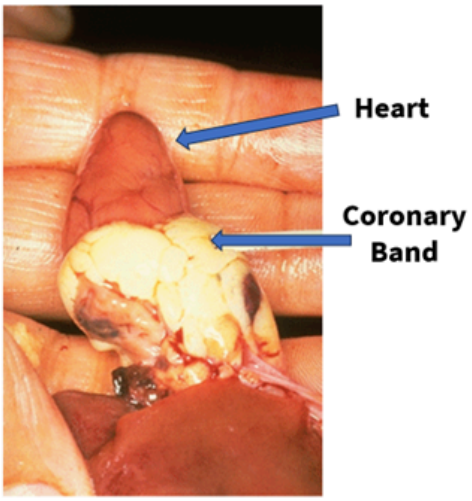
Poultry Anatomy

Major Internal Organs



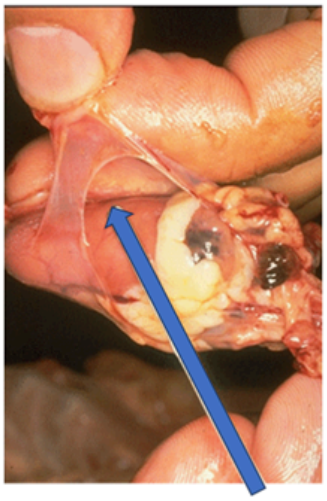
Heart & Coronary Band

- **Heart**
  - Should be fairly slender in shape, coming down to a rounded apex at the bottom.
  - May show changes in size, shape, and appearance when disease occurs.
- **Coronary Band**
  - A normal band of fat that wraps around the uppermost portion of the heart.
  - May show changes in quantity and appearance when a systemic disease occurs.



Pericardial Sac

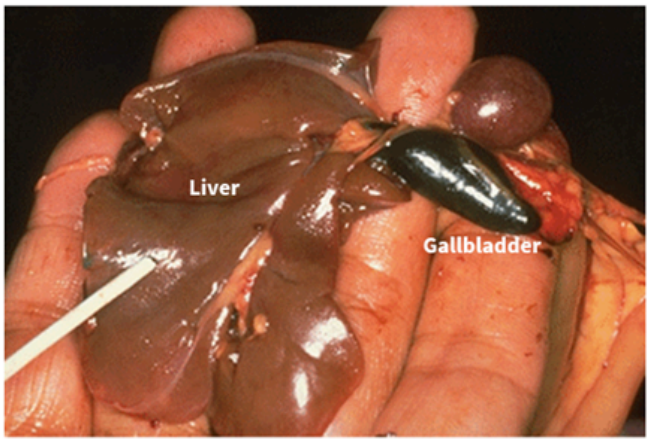
- The **pericardial sac** is the thin membrane that encloses the heart.
- A normal amount of clear, amber colored fluid is normally present within the pericardial sac.
- Both the pericardial sac and fluid may show changes in color and thickness when disease occurs.



Pericardial Sac

Liver & Gallbladder

- **Liver**
  - Single organ with two lobes
  - Color may vary, but typically a muddy red color
- **Gallbladder**
  - Small green sac attached to liver surface
  - Filled with green bile fluid

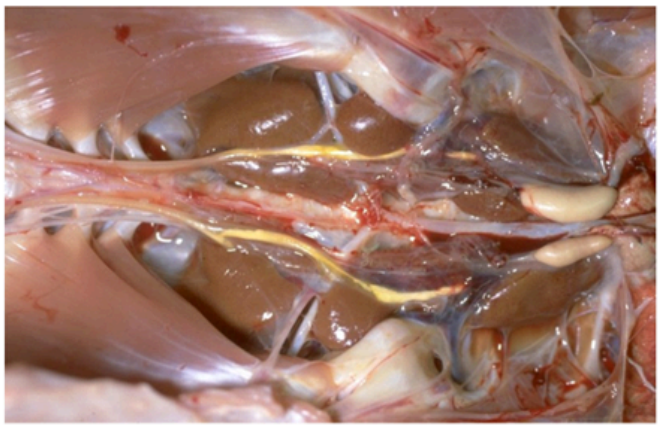


Spleen

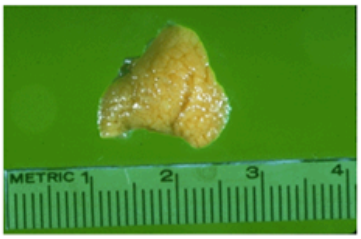
- The **spleen,** located near the ventriculus (gizzard) in the body cavity, is a small, round, soft organ similar in color to liver
- A normal spleen is about ¾ inch in diameter.

Kidneys

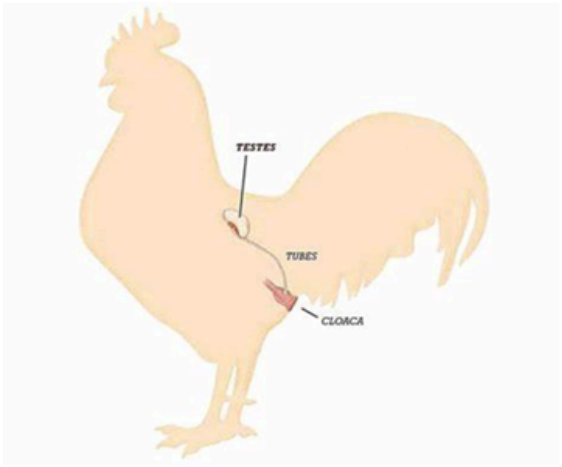
- Two tri-lobed **kidneys**, one on both sides of the vertebral column.
- Kidneys are embedded in deep bony crypts of the pelvic and lower back area of the carcass.
- Normal kidney color is brown.



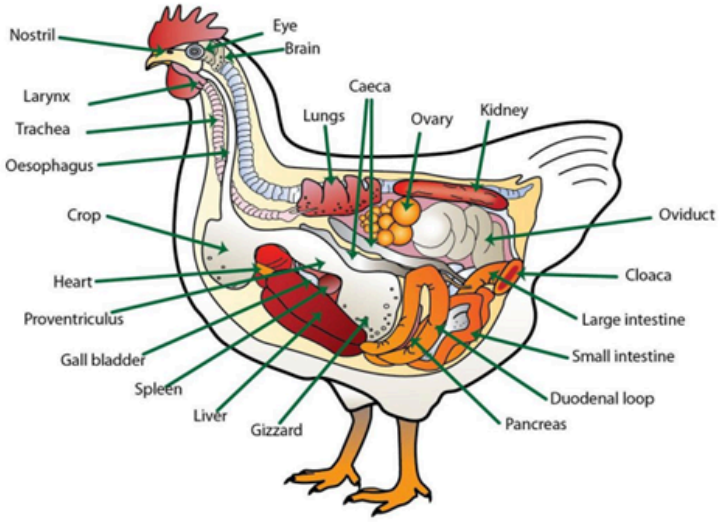
Ovaries



Testicles



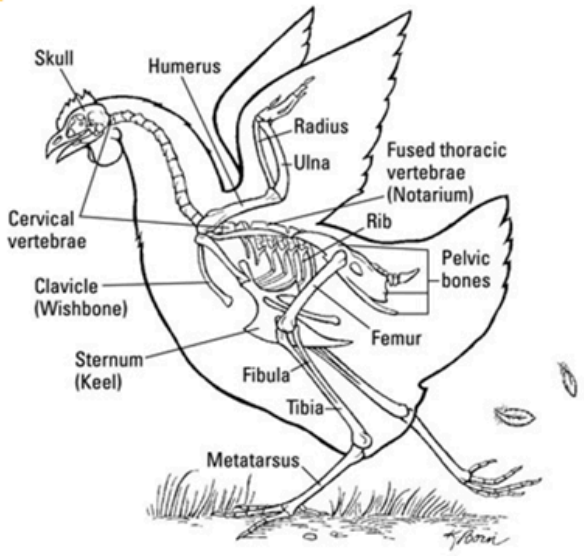
Internal Organs Summary



Poultry Anatomy

Skeletal System

Skeletal System Summary



Poultry Ante-mortem Inspection

Objectives

1. List the sources of authority for conducting poultry ante-mortem inspection.
2. Describe the proper procedure for conducting ante-mortem inspection on a poultry lot.
3. Identify plant management responsibilities.
4. List at least five symptoms of disease that might be observed on ante-mortem inspection.

Ante-mortem Inspection Authority

Poultry Products Inspection Act

- §455. Inspection in official establishments
- (a) Ante mortem inspection
  - *"For the purpose of preventing the entry into or flow or movement in commerce of, or the burdening of commerce by, any poultry product which is capable of use as human food and is adulterated, the Secretary shall, where and to the extent considered by him necessary, cause to be made by inspectors ante-mortem inspection of poultry in each official establishment processing poultry or poultry products for commerce or otherwise subject to inspection under this chapter."*

What are the Plant Responsibilities?

Establishments must provide:

- Adequate facilities and equipment
- Adequate supplies
- Sufficient lighting
- A safe working environment

Why is Ante-mortem Inspection Performed?

- The purpose of ante-mortem inspection is to prevent the entry of adulterated products into commerce
- Serves as the first lines of defense in identifying possible foreign animal diseases (FAD) and reportable animal diseases (RAD)

Ante-mortem - When, Where, and Who?

When do we perform ante-mortem inspection?

- On each shift on which slaughter occurs

Where do we perform ante-mortem inspection?

- From receiving to the pre-scald area

Who performs ante-mortem inspection?

- Food Inspectors
- Consumer Safety Inspectors
- Inspectors-in-Charge
- Public Health Veterinarians

First and Foremost - Safety First!!!

- Always be mindful of your surroundings.
- Look out for moving vehicles/objects.
- Carry a flashlight, especially at night.
- Wear Personal Protective Equipment (PPE).
- Follow establishment Good Manufacturing Practices (GMP) for wearing PPE.
- IPP requirements and options for PPE outlined in **Directive 4791.1**, "Basic Occupational Safety and Health Program"
- PPE used by FSIS employees must be provided or approved by the Agency

Personal Protective Equipment (PPE)

- **PPE recommendations based on Job Hazard Analysis (JHA) assessment of exposure to workplace hazards**
  - ➢ Required PPE for all IPP at FSIS inspected workplaces:
    - Hard hat ('bump' cap not approved for use).
    - Slip-resistant shoes.
    - Hearing protection (if exposed to loud noises).
    - Cut-resistant gloves (if working with knives in livestock slaughter).
  - ➢ Optional PPE:
    - Eye protection/face shield; respirator; disposable gloves; freezer coat; heat relief apparel; reflective vest

How Do You Perform Ante-mortem Inspection?

Make sure to observe the birds for signs of disease:

- In coops or batteries
- Before or after removal from the truck
- For ratites, each bird will be observed individually (similar to livestock)

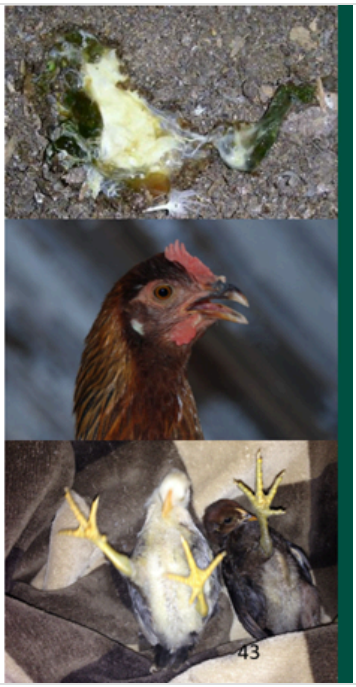
Why is it ok to observe groups of birds, rather than individually?

- Birds are young (6 to 8 weeks)
- Uniform genetics within a lot
- Uniform nutrition and health management

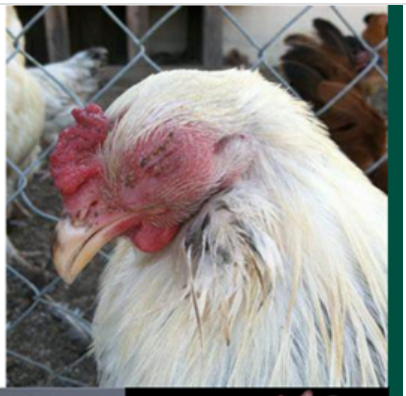
What Are You Looking For?

The overall condition of the birds

- Sneezing, wheezing, gasping
- Diarrhea
- Off-colored feces
- Abnormal numbers of sick or dead birds



What Are You Looking For?



Abnormalities in the head and eyes

- Swelling in combs, wattles, eyes
- Watery eyes
- Leukosis (gray eye)

What Are You Looking For?

Abnormalities in the legs and/or body of the bird

- Lameness
- Bone and joint enlargement
- Skin lesions (e.g., fowl pox lesions, gangrenous dermatitis)






What Are You Looking For?

Neurological Disorders

- Depression
- Muscular tremors
- Star-gazing
- Torticollis (involuntarily twisted or turned neck)
- Droopy wings
- Opisthotonos (arched head, neck, and spinal column)
- Circling
- Paralysis

What Are You Looking For?

Signs of a foreign animal disease (FAD) or reportable animal disease (RAD)

Foreign & Reportable Animal Diseases (FAD/RAD)

What is a FAD?

- An important transmissible livestock or poultry disease believed to be absent from the United States and its territories that has a potential significant public health or economic impact.

What is a RAD?

- A disease or other condition that is present within the United States and may pose a threat to the public health or economy.

Both FADs and RADs must be reported to the authorities!

Why FADs and Reportable Conditions are Important

- **The unchecked spread of FADs into agricultural environments will have a negative ripple effect on many segments of the U.S. economy:**
  - Disruption of livestock marketing and trade
  - Some diseases carry the potential to infect people (zoonotic diseases)
  - Cost of controlling the spread of FADs
    - Animal quarantine
    - Depopulation
    - Cleaning and disinfecting livestock environments
    - Mass disposal of animal carcasses

Foreign & Reportable Animal Diseases (FAD/RAD)

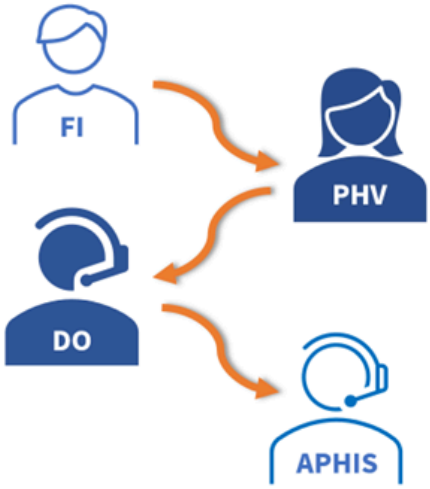
- **Who Investigates FAD and RAD conditions?**
  - The USDA's Animal and Plant Health Inspection Service (APHIS) has the primary responsibility to investigate suspect conditions.
  - If an FAD is detected, a chain of events is to occur at the state and national levels to mitigate the risk.

Signs of Possible FADs and RADs

- Neurological signs
- Bloody and/or off-colored feces
- Swollen and off colored combs and wattles
- Abnormal swellings
- Unusually high numbers of sick or dead birds

IPP Responsibilities with FADs and RADs

- If the FI identifies signs of a reportable disease, they must immediately contact the IIC.
- The VMO/IIC will immediately contact the District Office (DO) through supervisory channels.
- The VMO will take the flock history. (**Refer to Directive 6000.1**)
- The DO will contact APHIS, Veterinary Services.



Foreign & Reportable Animal Diseases (FAD/RAD)

- Remember that **<u>you are the first line of defense</u>** in food safety!
- You should inform the PHV of any symptoms seen on ante-mortem inspection or lesions seen on post-mortem inspection that are associated with a FAD or RAD condition.

Ante-mortem Inspection Summary - When To Notify the IIC?

- **When you suspect a live lot of poultry has a foreign or reportable disease**
- **When the establishment is not providing adequate lighting, facilities, or equipment for you to perform ante-mortem inspection**
- **When you observe the establishment not adhering to GCPs**
  - Intentional mistreatment
  - Birds dying by means other than slaughter
  - Not being completely bled out (still breathing) before entering the scalder
  - Unusually high number of injuries to birds such as broken legs, wings, but no evidence of intentional mistreatment

Poultry Ante-mortem Inspection Resources

- Directive 6100.3
- 9 CFR 381.70
- 9 CFR 381.71
- 9 CFR 391.72

UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD SAFETY AND INSPECTION SERVICE
WASHINGTON, DC

FSIS DIRECTIVE | 6100.3 Rev. 2 | 9/5/23

ANTE-MORTEM AND POST-MORTEM POULTRY INSPECTION

NOTE: DO NOT IMPLEMENT THIS DIRECTIVE UNTIL SEPTEMBER 18, 2023

I. PURPOSE

A. This directive instructs the Inspector-in-Charge (IIC) and offline and online inspection program personnel (IPP) on how to perform ante-mortem and post-mortem inspection of poultry and how to inspect the conditions under which the birds are processed. It also instructs IICs on how to make post-mortem dispositions for some poultry diseases and how to document these dispositions in the Public Health Information System (PHIS). This directive has been updated to clarify duties for the IIC, to update instructions on avian leukosis dispositions, and to remove previous instructions on worker safety hazards.

B. With the exception of instructions in Sections IV (Ante-mortem Inspection) and VI (Diseases and Conditions–Supplemental Information), which apply to IPP in all official poultry slaughter establishments, this directive is for IPP at establishments that do not operate under the New Poultry Inspection System (NPIS).

C. IPP in NPIS establishments are to also refer to FSIS Directive 6500.1, *New Poultry Inspection System: Post-mortem Inspection and Verification of Ready-to-Cook Requirement.*

KEY POINTS:

- *Describes the ante-mortem and post-mortem inspection procedures for poultry*
- *Provides supplemental information regarding diseases and conditions, including "Woody Breast" and "White Striping"*
- *Explains how IPP inspect airsacculitis salvage operations*
- *Sets out how IICs verify evisceration line speed process control and assess additional factors that may have an impact on the ability of IPP to perform proper inspection procedures*
- *Provides the documentation procedures for findings made during post-mortem poultry inspection, including the Animal Disposition Reporting (ADR) function in PHIS*
- *Provides updated instructions and regulations for avian leukosis dispositions*

DISTRIBUTION: Electronic | OPI: OPPD

Poultry Ante-mortem Inspection Summary

1. List the sources of authority for conducting poultry ante-mortem inspection.
2. Describe the proper procedure for conducting ante-mortem inspection on a poultry lot.
3. Identify plant management responsibilities.
4. List at least five symptoms of disease that might be observed on ante-mortem inspection.

Good Commercial Practices

Objectives

1. Discuss Good Commercial Practices (GCP) regulatory requirements for poultry
2. List steps in performing the Poultry GCP Verification task
3. Identify regulatory noncompliance with GCP or mistreatment of birds and actions to take in each case

GCP Resources

- **Directive 6110.1** - Verification of Poultry Good Commercial Practices
- **Directive 6100.3** - Ante-mortem and Post-mortem Poultry Inspection
- **9 CFR 381.65(b)** - Good Commercial Practices for Poultry Slaughter

What are Good Commercial Practices?

- **Good Commercial Practices (GCP)** are a set of guidelines that were established to ensure that the birds are treated humanely during the slaughter process.

- In poultry operations, following humane methods of handling and slaughter that are consistent with GCP **increases the likelihood of producing unadulterated product**.

GCP Verification and the Acts

- The **Poultry Products Inspection Act (PPIA)** (21 U.S.C. 453(g)(5)) and the regulations (**9 CFR 381.90**) provide that poultry carcasses showing evidence of having died from causes other than slaughter are considered adulterated and must be condemned.

Authority to Perform GCP Verification

- While there is no statute requiring humane handling for poultry (including ratite birds, such as ostriches, emus, and rheas), there is a regulatory requirement that **poultry be slaughtered according to GCP.** 9 CFR 381.65(b).

- While GCPs are technically voluntary, by regulation, establishments still need to follow them to demonstrate control of their slaughter process.

What is Required in 9 CFR 381.65(b)?

- **Poultry must be slaughtered in a manner that:**
  - Conforms with good commercial practices.
  - Results in thorough bleeding.
  - Stops breathing prior to scald vat.
- **Blood from the killing operation must be confined to a relatively small area.**

Good Commercial Practices Verification Task

- Directive 6110.1 consolidates relevant poultry GCP verification information from FSIS Directive 6100.3
  - States that poultry carcasses showing evidence of having died from causes other than slaughter are considered adulterated and must be condemned
  - Addresses writing NRs for documenting regulatory noncompliance with poultry slaughter GCP
  - Provides instructions for composing meeting MOI documenting observation of mistreatment of live poultry before slaughter

GCP - When, Where, and Who?

- **When do you perform a GCP task?**
  - One Poultry GCP Verification task per shift
- **Where do you perform a GCP task?**
  - Observe activities in receiving through pre-scald areas
- **Who performs a GCP task?**
  - The Public Health Veterinarian (PHV), Inspector-in-Charge (IIC), or designee

How is the GCP Verification Task Performed?

- By observing operations and/or reviewing records
- Video surveillance can also be used by the establishment as a form of GCP record

GCP Noncompliance Issues

- Establishment employees mistreating birds, handling birds in a manner that causes injury, death, or prevents thorough bleeding
- Establishment employees breaking birds' legs when placing them in shackles
- Establishment employees driving over live birds with equipment or trucks in unloading or live hang area

Additional GCP Noncompliance Issues

- **Stunning equipment not functioning properly for poultry stunned prior to bleeding**
- **Bleeding equipment in bleeding area not functioning properly**
- **Birds dead from cold weather**
  - Example: birds frozen inside of or frozen to cages
- **Birds dead from heat exhaustion**
  - Example: heavy panting in poultry suffering from heat stress

When Do You Notify the IIC?

Anytime you observe any poultry carcasses showing evidence of mistreatment or having died from causes other than Good Commercial Practices!

Good Commercial Practices Summary

1. Discuss Good Commercial Practices (GCP) regulatory requirements for poultry
2. List steps in performing the Poultry GCP Verification task
3. Identify regulatory noncompliance with GCP or mistreatment of birds and actions to take in each case

Poultry Post-mortem Inspection

Objectives

1. Explain purpose of post-mortem inspection
2. List sources of regulatory authority used in post-mortem inspection
3. List six (6) inspection systems listed in 9 CFR 381.76
4. List four (4) establishment responsibilities to ensure production of safe and wholesome product
5. List five (5) facility requirements plant management must provide at post-mortem inspection station

Objectives (cont.)

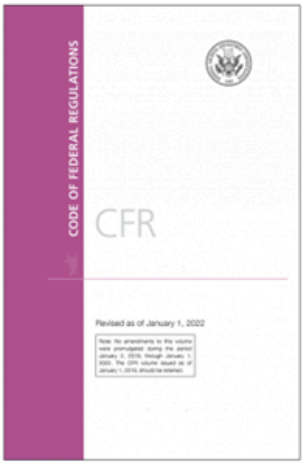
6. List four (4) duties required of "inspector's helper" or trimmer at post-mortem inspection station
7. List three (3) disposition options for carcasses at post-mortem
8. Identify two (2) conditions at post-mortem of public health significance
9. Explain procedure an on-line Inspector should take when encountering a cadaver bird or DOA at post-mortem inspection
10. List two (2) disposition actions a Food Inspector may take when a carcass is presented with no viscera

Post-mortem Inspection Authority

- **Poultry Products Inspection Act**
- §455. Inspection in official establishments
- (b) Post-mortem inspection; quarantine, segregation, and reinspection
  - *"The Secretary, whenever processing operations are being conducted, shall cause to be made by inspectors' post-mortem inspection of the carcass of each bird processed, and at any time such quarantine, segregation, and reinspection as he deems necessary of poultry and poultry products capable of use as human food in each official establishment processing such poultry or poultry products for commerce or otherwise subject to inspection under this chapter."*

Poultry Post-mortem Inspection Resources

- 9 CFR 381.76
- 9 CFR 381.77
- 9 CFR 381.78
- 9 CFR 381.79
- Directive 6100.3
- Directive 6170.1



UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD SAFETY AND INSPECTION SERVICE
WASHINGTON, DC

FSIS DIRECTIVE | 6100.3 Rev. 2 | 9/5/23

ANTE-MORTEM AND POST-MORTEM POULTRY INSPECTION

NOTE: DO NOT IMPLEMENT THIS DIRECTIVE UNTIL SEPTEMBER 18, 2023

I. PURPOSE

A. This directive instructs the Inspector-in-Charge (IIC) and offline and online inspection program personnel (IPP) on how to perform ante-mortem and post-mortem inspection of poultry and how to inspect the conditions under which the birds are processed. It also instructs IICs on how to make post-mortem dispositions for some poultry diseases and how to document these dispositions in the Public Health Information System (PHIS). This directive has been updated to clarify duties for the IIC, to update instructions on avian leukosis dispositions, and to remove previous instructions on worker safety hazards.

B. With the exception of instructions in Sections IV (Ante-mortem Inspection) and VI (Diseases and Conditions–Supplemental Information), which apply to IPP in all official poultry slaughter establishments, this directive is for IPP at establishments that do not operate under the New Poultry Inspection System (NPIS).

C. IPP in NPIS establishments are to also refer to FSIS Directive 6500.3, *New Poultry Inspection System: Post-mortem Inspection and Verification of Ready-to-Cook Requirement*.

KEY POINTS:

- *Describes the ante-mortem and post-mortem inspection procedures for poultry*
- *Provides supplemental information regarding diseases and conditions, including "Woody Breast" and "White Striping"*
- *Explains how IPP inspect airsacculitis salvage operations*
- *Sets out how IICs verify evisceration line speed process control and assess additional factors that may have an impact on the ability of IPP to perform proper inspection procedures*
- *Provides the documentation procedures for findings made during post-mortem poultry inspection, including the Animal Disposition Reporting (ADR) function in PHIS*
- *Provides updated instructions and regulations for avian leukosis dispositions*

DISTRIBUTION: Electronic | OPI: OPPD

Why Perform Post-mortem Inspection?

- **Post-mortem inspection enables IPP to make decisions about the wholesomeness of each inspected poultry carcass.**
  - Any carcass or parts found to be unwholesome or adulterated are unfit for human food will be condemned so they do not enter commerce.
  - Post-mortem inspections help meet the Agency's mission of ensuring that only carcasses and parts that enter commerce are wholesome, not adulterated, and properly marked, labeled, and packaged.

Good Commercial Practices Verification Task

- Directive 6110.1 consolidates relevant poultry GCP verification information from FSIS Directive 6100.3
  - States that poultry carcasses showing evidence of having died from causes other than slaughter are considered adulterated and must be condemned
  - Addresses writing NRs for documenting regulatory noncompliance with poultry slaughter GCP
  - Provides instructions for composing meeting MOI documenting observation of mistreatment of live poultry before slaughter

Post-mortem Inspection: When, Where, and Who?

When is post-mortem inspection performed?

- Occurs after the animal has been slaughtered.

Where is post-mortem inspection performed?

- As a FI, your primary post-mortem inspection responsibility occurs on the production line as an “on-line” inspector.

Who performs post-mortem inspection?

- Public Health Veterinarians, Inspectors-in-Charge, Consumer Safety Inspectors, and Food Inspectors

Plant Responsibilities - Facility Requirements

- **The establishment is also responsible for providing certain facility requirements at the inspection stations that meet regulatory requirements (381.76 and 381.36).**
  - Adequate space
  - Adequate lighting
  - Hand rinsing facilities
  - Condemned containers
  - Hang back racks
  - Start/stop Switches
- **The requirements may vary depending on the types of post-mortem inspection systems being used at the establishment.**

Plant Responsibilities - Facility Requirements

Inspection Stand:

- The amount of space required for the inspector and helper varies, depending upon the inspection method.
- Regulations require a minimum of 4’ x 2’ for each.
- An adjustable platform is required at each inspection station.
- The NELS, NTIS, and SIS inspection systems specify additional facility requirements in addition to those already mentioned.

Plant Responsibilities – Facility Requirements

- **Lighting**
  - OSHA Standard 1926.56 – Minimum 50 foot-candles
  - 9 CFR 416.2(c) - Lighting of good quality and sufficient intensity where food is processed, handled, stored, or examined; where equipment and utensils are cleaned; and in hand-washing areas, dressing and locker rooms, and toilets

Plant Responsibilities - Facility Requirements

Hand-rinsing facilities

- Water for hand washing with both hot and cold running water available, delivered through a suitable mixing device controlled by the inspector, or, alternatively, water at a minimum temperature of 65°F, must be available at the post-mortem inspection station.

Condemned containers

- These containers must be leak-proof and properly marked.

Plant Responsibilities - Facility Requirements

Hang back racks

- The primary purpose of the hang back rack is to retain questionable carcasses for further examination and disposition.

Start/stop switch

- A start/stop switch within easy reach of each inspector is required.

Plant Responsibilities - Proper Presentation

Proper presentation helps to ensure consistent and accurate inspection.

- You will learn the specifics about presentation at the establishment where you are assigned.

What is Proper Presentation?

Presentation Requirements - 381.76(b)(2), Directive 6100.3

- Carcasses must be opened to expose organs and body cavity for proper examination by the inspector.
- Viscera, or any part thereof, must remain with the carcass until postmortem inspection is complete.
- If a carcass is presented with some visceral parts present but the heart, liver, and spleen are missing, or viscera is missing entirely, and IPP are unable to make a disposition, retain the carcass for the PHV.

Post-mortem Inspection Systems

The six inspection systems recognized in 9 CFR 381.76 are:

- Streamlined Inspection System (SIS)
- New Line Speed Inspection System (NELS)
- New Turkey Inspection System (NTI)
- Traditional
- Ratite
- New Poultry Slaughter Inspection System (NPIS)

Inspection System Requirements

- **Traditional & Ratite Inspection Systems**
  - Establishments are not required to provide an "inspector's helper" at the inspection station under ratite or traditional inspection.
  - However, the establishment is responsible to adequately trim carcasses to the satisfaction of the inspector.
  - If an establishment does not provide a helper, there could be line stoppages or inspection delays until the bird is presented properly to the inspector.
- **New Poultry Slaughter Inspection System (NPIS)**
  - These requirements will be taught in a separate training curriculum.

Inspection System Responsibilities

- **SIS inspection system**
  - Each inspector shall be flanked by an establishment employee assigned to be the "inspector's helper." (381.76(b)(3)(iii)(b))
- **NELS inspection system**
  - Each inspector shall be flanked by two establishment employees - the presenter and the helper. (381.76(b)(4)(i)(a))
- **NTI inspection system**
  - Each inspector shall be flanked by an establishment employee assigned to be the "inspector's helper." (381.76(b)(5)(i)(a))

Plant Personnel Responsibilities

- **Presentation**
  - Bird must be properly eviscerated and presented for inspection.
- **Trimming**
  - The “Inspector’s Helper” under direction of the Inspector:
    - ➢ Marks all carcasses that require trimming.
    - ➢ Trims these carcasses if time permits.
    - ➢ Removes carcasses from the line.
    - ➢ Records USDA condemned birds on FSIS Form 6000-16.

Inspector Responsibilities

Personal Hygiene

- All inspection personnel should *always* maintain proper employee hygiene when conducting inspection procedures!

Inspector Responsibilities

Personal Hygiene

- Most establishment have a set of requirements, often referred to as Good Manufacturing Practices (GMP), for plant employees.
- Examples:
  - Hand washing
  - Hair and beard nets
  - Using foot washes when moving between edible and inedible areas of the establishment
- **IPP should strive to meet or exceed establishment hygiene policies!**

Sanitary Dressing - Plant Responsibilities

- **Sanitary dressing** - the practice of handling carcasses and parts by establishment employees and machinery, throughout the slaughter process, in a manner that produces a clean, safe, wholesome poultry product in a sanitary environment.

Sanitary Dressing - IPP Responsibilities

- **Online inspectors** communicate to offline personnel of any increase in carcass contamination.

- **Offline personnel** verify the establishment is performing sanitary dressing procedures in a manner that will prevent the creation of insanitary conditions and the adulteration of product.

How Do You Perform Post-mortem Inspection?

General methods of performing post-mortem inspection involve using your senses (organoleptic inspection):

- **Sight** – Observing a disease lesion (inflammatory process, airsacculitis, or tumor).
- **Feel** – Palpating (feeling an abnormal lump in tissues, feeling abnormal firmness in an organ).
- **Smell** – Smelling a decomposed carcass or burst abscess
- **Hearing** – Hearing a carcass fall from the line onto the floor

How To Perform Post-mortem Inspection

1. Observe the overall condition of the carcass
2. Observe the exposed hock joints
3. Reflect the flap (pulling the cut skin and muscle back from the opening cut) and observe the inner surfaces of the carcass
4. Examine the viscera
5. Observe the carcass exterior

Considerations of Normal

The appearance of normal poultry carcasses will vary due to:

- Age
- Breed
- Gender
- Feed
- Management practices
- Killing/scalding/picking practices

Work with your supervisor and other experienced inspectors to distinguish normal vs. abnormal

Post-mortem Dispositions

- When performing post-mortem inspection, you will make a decision about the wholesomeness of each poultry carcass inspected.
- One of the following decisions will be made:

PASS

RETAIN

CONDEMN

Normal Carcasses - Passed

- If the carcass is **wholesome and normal** without any localized disease condition, then no action is necessary, and it is **passed** and allowed to continue down the line.

Localized Conditions – Trim and Pass

- If the carcass has a **localized condition**, the affected tissues should be **trimmed** and condemned and the remainder of the carcass (which is now wholesome or free of disease) can be **passed** for human consumption.
- Removal of the affected tissues can be performed:
  - Online (by the "inspector's helper" or a trimmer further down the line), or
  - Offline (at a designated salvage and/or reprocessing station).

Nonspecific Conditions - Hang Back for PHV

- If no disease condition present on a “no viscera” carcass would prevent IPP from making a disposition on it, the IIC will direct IPP to continue with post-mortem inspection on that specific production.
- If a present condition influences the “no viscera” carcass disposition determination, the IIC will direct IPP to hang back the “no viscera” carcasses for final disposition by the IIC. IICs may also conduct a presentation check.
- The IIC reviews all such carcasses and makes a final disposition of whether to **pass**, **trim & pass**, or **condemn** the carcass.

Systemic Conditions - Condemned

- If there are **systemic** or **generalized signs** that indicate the carcass is unwholesome or diseased, then the entire carcass and all its associated parts are **condemned**.
- Associated parts include:
  - Other removed parts (if used for human consumption)
  - Viscera
  - Paws

Work with your supervisor and experienced inspectors to distinguish what is

Normal **vs.** **Abnormal**

Post-mortem Inspection Summary

- Explain purpose of post-mortem inspection
- List sources of regulatory authority used in post-mortem inspection
- List six (6) inspection systems listed in 9 CFR 381.76
- List four (4) establishment responsibilities to ensure production of safe and wholesome product
- List five (5) facility requirements plant management must provide at post-mortem inspection station

Post-mortem Inspection Summary

- List four (4) duties required of "inspector's helper" or trimmer at post-mortem inspection station
- List three (3) disposition options for carcasses at post-mortem
- Identify two (2) conditions at post-mortem of public health significance
- Explain procedure an on-line inspector should take when encountering a cadaver bird or DOA at post-mortem inspection
- List two (2) disposition actions a Food Inspector may take when a carcass is presented with no viscera

Poultry Diseases and Conditions

1. Observe Overall Condition of Carcass

- When observing a carcass, determine its overall condition. Be alert for conditions and signs of systemic disease.
  - **Septicemia-toxemia (sep/tox)** - 9 CFR 381.83
    - Septicemia/toxemia (called sep/tox) is manifested by a group of clinical signs, with not all indications present in a single carcass.
    - Sep/tox is the main cause for carcass condemnation in broiler processing plants in the U.S.

2. Observe Exposed Hock Joints

- Conditions to look for in exposed hock joints:
  - **Synovitis** - 9 CFR 381.86
    - Synovitis can affect chickens and turkeys. It may become a chronic, systemic disease that affects membranes in the joints and tendons.

3. Observe Inner Surfaces of Carcass

- Conditions to look for:
  - Swollen, reddened, congested kidneys that could indicate infection or **sep/tox -** 9 CFR 381.83
  - **Airsacculitis** - 9 CFR 381.84
  - **Inflammatory Process (IP)** - 9 CFR 381.86
    - Also found on the exterior of the carcass (e.g., around joints, under the skin, etc.)
  - **Tumors** - 9 CFR 381.87

4. Examine Viscera

- Conditions to look for:
  - **Sep/Tox** - 9 CFR 381.83
  - **Airsacculitis** - 9 CFR 381.84

5. Examine Carcass Exterior

- **Conditions to look for:**
  - Skin lesions, such as **keratoacanthomas**
  - **Sep/Tox** - 9 CFR 381.83
  - **Inflammatory process (IP) -** 9 CFR 381.86
  - **Cadaver** - 9 CFR 381.90
  - **Overscald - 9 CFR 381.92**

Keratoacanthoma

When Abnormalities are Found

When abnormal or diseases carcasses are seen:

- Instruct "inspector's helper" on disposition (e.g., hang back, trim, salvage, reprocessing, condemn)

When further correlation with the IIC is necessary:

- Instruct "inspector's helper" to hang back carcasses with associated viscera at designated inspection stand location

Poultry Diseases & Conditions of Public Health Significance

Food Safety Conditions

- Septicemia/Toxemia
- Fecal Contamination

Septicemia/Toxemia

- **Septicemia** – systemic effects of pathogenic bacteria in the bloodstream
- **Toxemia** – systemic effects of circulating toxins produced by pathogenic bacteria
- Signs are similar
- May exist simultaneously

Post-mortem Signs of Sep/Tox

- Petechial hemorrhages (pinpoint-sized purple, red, or brown spots under skin or mucous membranes due to broken capillaries) on heart, liver, kidneys, muscles, and serous membranes (thin membrane that encloses internal body cavities and lines organs)
- Blood-tinged or secretions (i.e., exudate) in body cavity
- Liver, spleen, and kidneys swollen, hyperemic (excessive accumulation of blood or other bodily fluid)
- Skin hyperemic or cyanotic (bluish discoloration from inadequate oxygen in blood)
- Muscle wasting

Observe the Overall Condition for Sep/Tox

What to look for:

- Evidence of systemic or generalized changes that would indicate **septicemia/toxemia (sep/tox)**. This includes:
  - Unusual dark red, pale, or blue skin or meat color
  - Drying out of the skin due to dehydration
  - Shrunken appearance indicates muscle wasting
  - Prominent keel bone that sticks out from beneath the skin between breast muscles

Normal Abnormal

Observe the Carcass Exterior for Sep/Tox

Observe the carcass exterior looking for indications of sep/tox:

- Emaciation (wasted condition)
- Prominent keel bone
- Dark skin and muscle

Possible Dispositions:

- **Condemn** – these findings are evidence of systemic changes; record as “Septicemia and Toxemia” on lot tally sheet

Observe Inner Surfaces for Sep/Tox

What to look for:

- Swollen, reddened, congested kidneys that could indicate infection or sep/tox - 9 CFR 381.83

Possible Dispositions:

- **Condemn** – if this finding and any previously mentioned signs of sep/tox occurs

Examine the Viscera for Sep/Tox

What to look for:

- Hemorrhage, congestion, and swelling of the viscera, including the intestines if available, that may indicate sep/tox.

Distinguishing Sep/Tox from Dehydration

- Carcasses hanging on a hang back rack will dry out quickly and appear to have developed a systemic change.
- Make sure to look for additional signs of sep/tox.

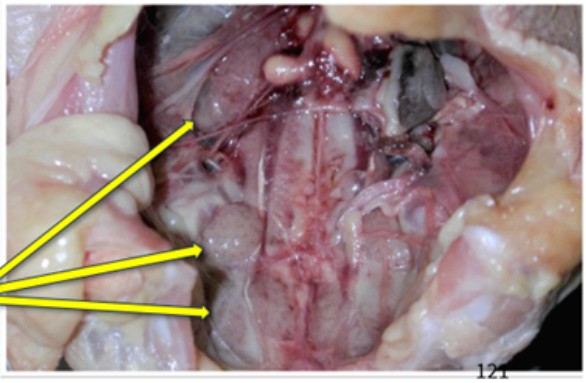
The left carcass in the lower image is a normal carcass. Carcasses in the upper image and lower image on the right are dehydrated. Note the darker color (yellow arrow).

Post-mortem Signs of Sep/Tox

Dehydrated sep/tox carcasses displaying swollen hocks (blue arrows), congested viscera (green arrows), prominent keel bones (yellow arrows), and dark meat (not shown).

Post-mortem Signs of Sep/Tox

May see organ degeneration or in this case swelling/ petechial hemorrhages (red spots)/white foci (white spots) in the liver.



May see swollen kidneys, with or without Inflammatory tissue in the kidney crypts surrounding kidney lobes.

Disposition of Sep/Tox

9 CFR 381.83

- Carcasses of poultry showing evidence of any septicemic or toxemic disease, or showing evidence of an abnormal physiologic state, shall be condemned.

Possible Dispositions:

- **Condemn Always**

Sep/Tox Scenarios

If the Inspector observes abnormalities only affecting a single organ and the rest of the carcass is within normal limits, what should the Inspector's disposition be?

Trim and Pass

Sep/Tox Scenarios

If a carcass demonstrates a systemic change, e.g., the entire carcass is cyanotic (darker meat), anemic (paler meat), hyperemic (dark red meat), or dehydrated (dried out appearance), what should the disposition be?

Condemn

Sep/Tox Scenarios

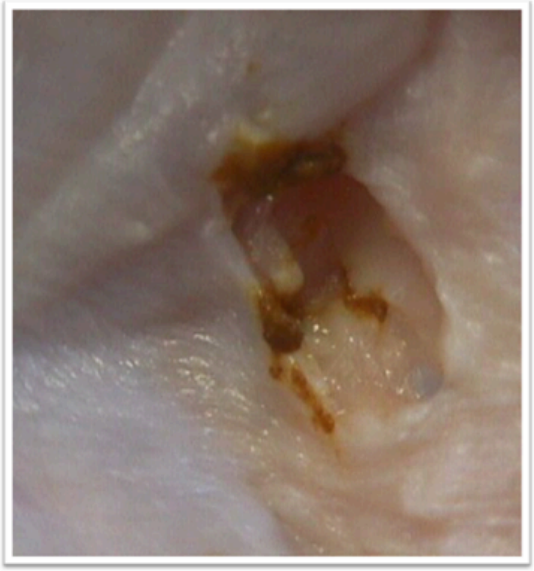
If IPP observe only dark skin or meat, small carcasses, or slight dehydration, and the rest of the carcass, including the viscera appears normal, what would the disposition be?

The entire carcass would be passed.

Remember: retain the carcass and parts for IIC disposition if you are ever unsure!

Fecal Contamination

- Regulation **381.65(f)** states that poultry carcasses contaminated with visible fecal material shall be prevented from entering the chill tank.
- Consequently, there is a **"zero tolerance"** for the presence of feces on carcasses before they enter the chill system.



How to Identify Feces in Poultry

- **The proper identification of feces is based on 3 characteristics:**
  - The **color** of feces ranges from varying shades of yellow to green, brown, and white.
    - The color of ingesta varies with the diet.
  - The **consistency** of feces is characteristically semi-solid to a paste.
    - The consistency of ingesta is characteristically solid or granular; digestive fluids sometimes are present.
  - The **composition** of feces may or may not include plant material. Inspection program personnel must take care to distinguish feces from ingesta.
    - The composition of ingesta is identifiable plant material.

Disposition of Fecal Contamination

- **Reprocessing carcasses**
  - Trimming
  - Washing
  - Antimicrobial interventions
  - Off-line vs. on-line reprocessing
- **Condemn carcass**
  - If Inspector cannot inspect carcass
  - If carcass cannot be made wholesome
  - Record as “Contamination” on the lot tally sheet

Poultry Diseases & Conditions Not of Public Health Significance

Non-Food Safety Conditions

Synovitis-Tendonitis

What is synovitis?

- Acute or chronic inflammation of the synovial membrane or inflammation of tendons.
- Characterized by a fluctuating swelling
- Synovitis-tendonitis is a clinical symptom, NOT a specific disease.

Causes

- Viruses, *Mycoplasma*, other bacteria
- Injury and nutritional deficiencies may contribute

Synovitis-Tendonitis Post-mortem Lesions

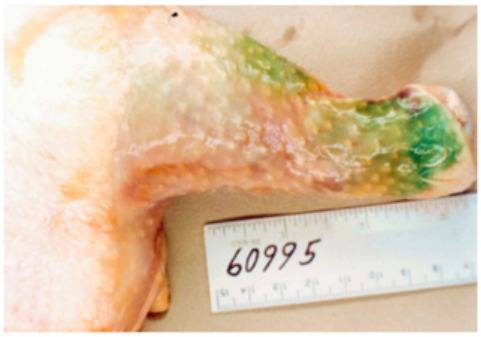
What to look for:

- Inflammation, exudate, or swelling that indicates **synovitis** (inflammation of the hock joint)
- Swollen joints, with exudate variable in appearance (fluid can vary from clear, pus-like, or caseous)
- Possible liver involvement (green from bile stasis, esp. with Staph)
- Kidneys and spleen may be swollen
- Lesions vary depending on whether systemic changes have occurred

Synovitis-Tendonitis Post-mortem Lesions

Inflammatory and caseous exudate within the thickened synovial membranes observed in both images.

Synovitis-Tendonitis Post-mortem Lesions



Note: Image above is a common presentation of synovitis. The color of inflammation may vary.

Note: Image above is of "green liver" due to a build up of bile acids in the liver.

Disposition of Synovitis-Tendonitis

9 CFR 381.86

- Any organ or other part of a carcass which is affected by an inflammatory process shall be condemned and if there is evidence of general systemic disturbance, the whole carcass shall be condemned.

Possible Dispositions:

- **Trim** the affected tissue **& Pass** the remaining carcass.
- **Condemn** - ONLY if there is ALSO evidence of systemic changes such as septicemia/toxemia and record as “Synovitis” on the lot tally sheet.

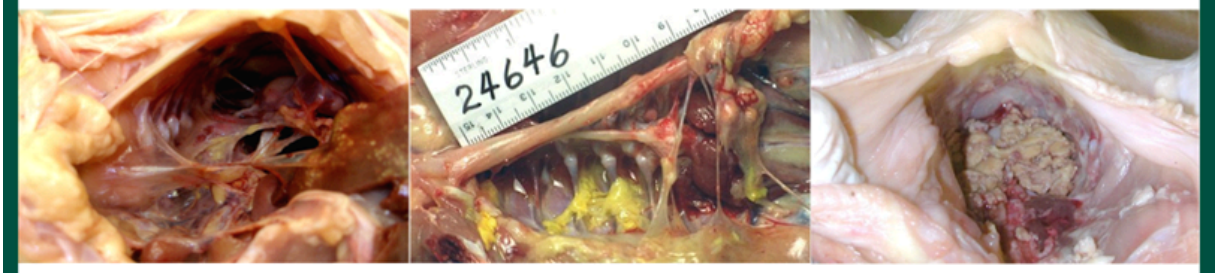
Airsacculitis (9 CFR 381.84)

What is airsacculitis?

- Acute or chronic inflammation of air sac membranes
- Characterized by exudate, often soft and caseous (i.e., cheese-like), on air sac membranes and viscera

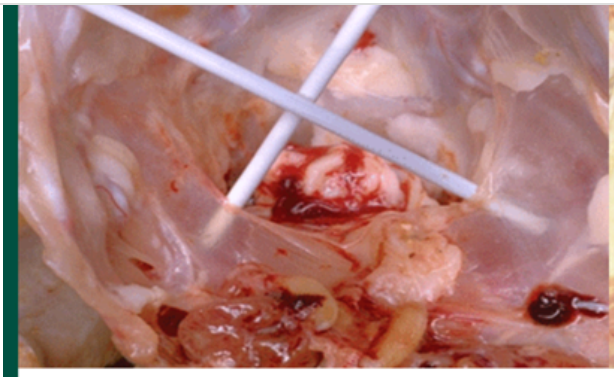
Causes

- Vaccination
- Other diseases/ bacterial or viral infection
- Poor nutrition
- Insanitary conditions
- Extended removal of feed/water

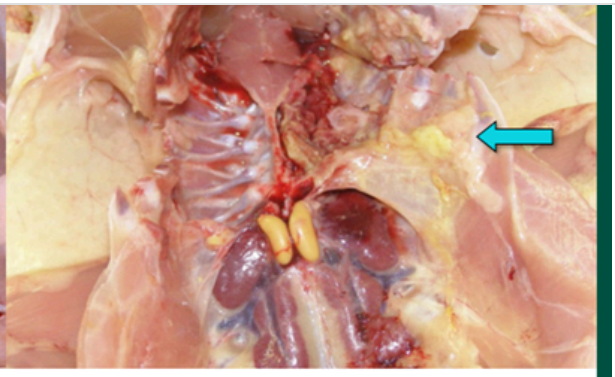


Airsacculitis - Inner Cavity Presentation

- Lesions may be acute or chronic (similar to livestock).
- Slight clouding and small amounts of watery exudate may be present.
- Thickened, opaque membranes or large amounts of thick, white-to-cream colored and/or cheesy exudates.



NORMAL



ABNORMAL

Observe the Inner Surfaces for Airsacculitis

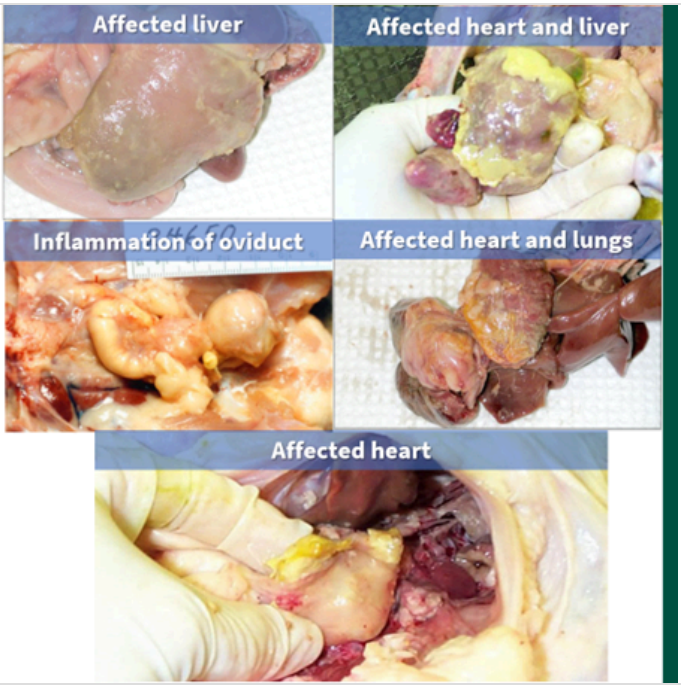
What to look for:

- Exudate in, or cloudiness of, the air sacs that could indicate **Airsacculitis** (blue arrow)
- The appearance may vary from opaque (no longer see through) to yellow

Examine the Viscera for Airsacculitis

What to look for:

- Yellow or pale exudate on the heart, liver, and lungs that may indicate airsacculitis



Regulatory Requirements for Airsacculitis

9 CFR 381.84

- Carcasses of poultry with evidence of extensive involvement of the air sacs with airsacculitis along with systemic changes shall be condemned. Less affected carcasses may be passed for food after complete removal and condemnation of all affected tissues including the exudate.

Airsacculitis Salvage

Establishments may have an airsacculitis salvage procedure if:

- They can remove all affected tissues, kidneys, and exudates when airsacculitis is identified
- Carcasses are available for reinspection 9 CFR 381.76(b)
- Establishment maintains product flow

Disposition of Airsacculitis

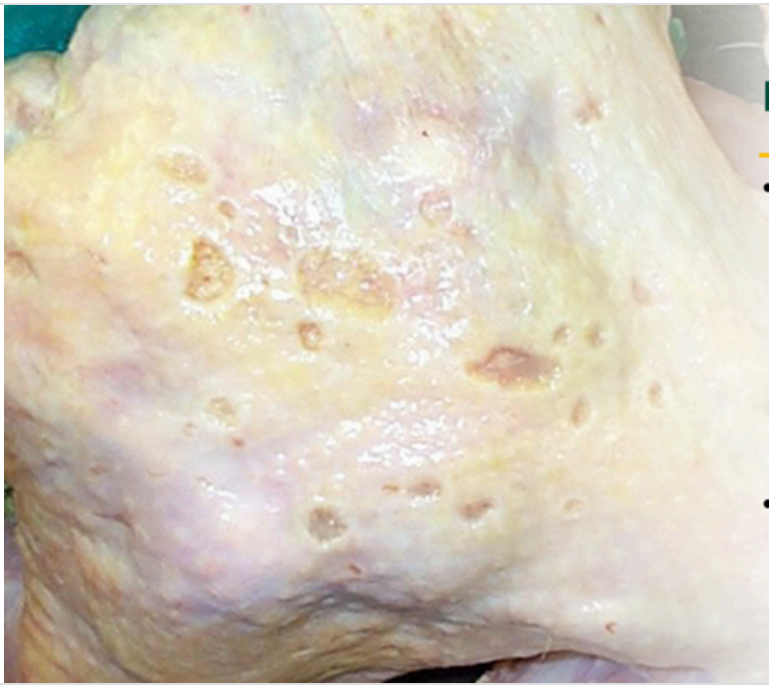
Possible Dispositions

- Send the carcass to air sac salvage (if the establishment has such a program) so that the affected tissue can be **Trimmed &** the remaining carcass **Passed**.

- Carcasses are **Condemned** if:
  - Airsacculitis is extensive/systemic
  - The establishment does not have an airsacculitis salvage program
  - The establishment elects to suspend air sac salvage program for the entire specific production.
  - The establishment records condemned carcasses under "Airsacculitis" on the lot tally sheet, even if it does not have a salvage program or if there is a salvage program but airsacculitis is so extensive it warrants condemnation of the entire carcass.
  - If the establishment suspend airsacculitis salvage, the condemned carcasses are marked as "plant rejects."

Disposition of Leukosis

On August 17, 2023, FSIS published the final rule that became effective on September 18, 2023, and rescinded 9 CFR 381.82, which required condemnation of poultry carcasses affected with one or more of the forms of the avian leukosis.



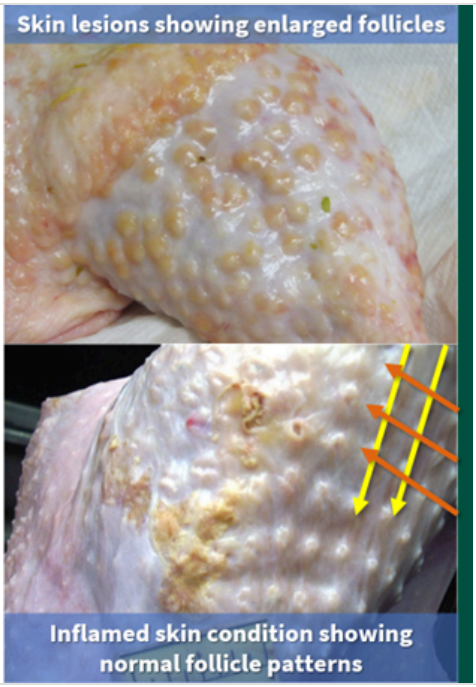
Keratoacanthoma

- **What is Keratoacanthoma?**
  - Previously known as “dermal squamous cell carcinomas,”
  - Lesions found in the skin of young chickens that arise from the feather follicle epithelium.
- **What to look for?**
  - At slaughter, the lesions may present as concave (curved surface), pitted areas up to ~2 cm in width.

Observe Carcass Exterior for Avian Keratoacanthomas

What to look for:

- Enlarged feather follicles with distortion and disruption of the normal symmetry of the follicular tract (top photograph).
- This disruption in pattern helps distinguish keratoacanthomas from dermatitis/folliculitis. Note the normal continuation of the feather follicle patterns (yellow and orange arrows in lower photograph)



Skin lesions showing enlarged follicles

Inflamed skin condition showing normal follicle patterns

Keratoacanthoma Disposition Examples

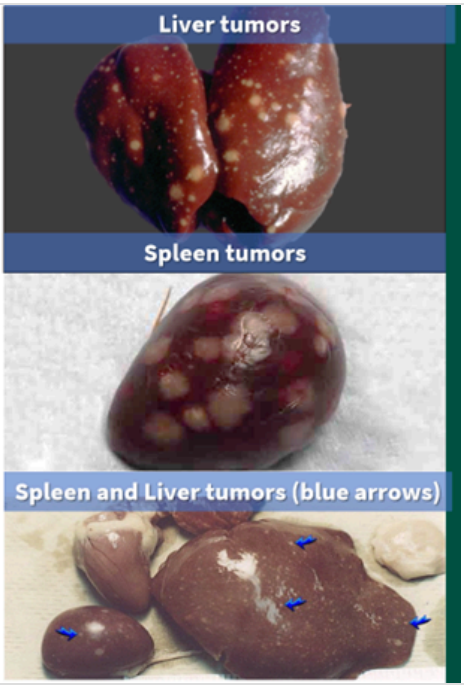
Trim & Pass vs. Condemn

Disposition of Keratoacanthoma

- **Possible Dispositions:**
  - Carcasses with localized or a few small lesions →**Trim** the affected tissue **& Pass** the remaining carcass
  - **Condemn** carcasses with:
    - Generalized lesions (affecting the entire carcass)
    - Large coalescing lesions (when several small lesions join together to form a large lesion)
    - Multiple large tumors
    - Record as “Tumors” on the lot tally sheet.

Other Tumors

- **Post-mortem inspectors do not identify and diagnose tumors but are expected to recognize specific types of tumors and know their proper disposition.**
- Many other neoplasms occur in poultry, usually at low frequency.
- The following types of tumors are not known to have any public health significance:
  - ➢ Keratoacanthoma
  - ➢ Hemangioma
  - ➢ Adenocarcinoma
  - ➢ Fibroma
  - ➢ Melanoma
  - ➢ Teratoma



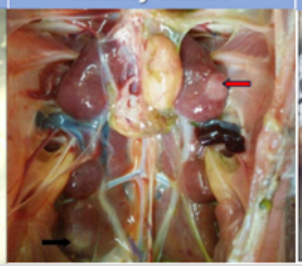
Observe the Inner Surfaces for Tumors

What to look for:

- Tissue masses or abnormal appearing tissue that could indicate tumors (9 CFR 381.87)

Hemangioma

Kidney Tumor



Fibroma

Teratoma

Hemangioma

Melanoma (dark spots)

Disposition of Other Tumors

9 CFR 381.87

- Any organ or other part of a carcass which is affected by a tumor shall be condemned and when there is evidence of metastasis or that the general condition of the bird has been affected by the size, position, or nature of the tumor, the whole carcass shall be condemned.

Possible Dispositions (Directive 6100.3):

- **Trim** any organ or other carcass part affected with tumors **and pass** the unaffected parts of the carcass.
- **Condemn** any organ or other part of a carcass affected by a tumor where there is evidence of metastasis, or when the general condition of the carcass has been affected by the size, position, or nature of the tumor, and record as “Tumor” on the lot tally sheet.

Inflammatory Process (IP)

What to look for:

- Yellow scabbed areas on and between the skin and subcutaneous tissue
- These yellow scabbed areas may be associated with reddening of the tissues and musculature beneath the yellow lesion.

Inflammation and reddening beneath the skin

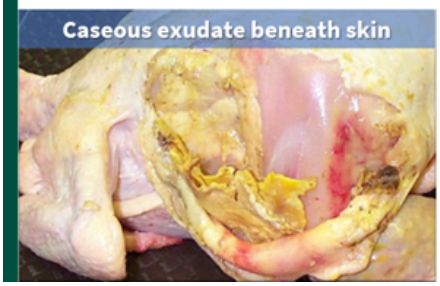
Yellow scabbed area on skin

Yellow exudate beneath the skin

Yellow scabbed area on skin

Yellow, thickened area of skin

Images of Inflammatory Processes



Caseous exudate beneath skin

Caseous exudate beneath skin

Disposition of Inflammatory Processes

9 CFR 381.86

- Any organ or other part of a carcass which is affected by an inflammatory process shall be condemned and if there is evidence of general systemic disturbance, the whole carcass shall be condemned.

Possible Dispositions:

- **Trim** the affected tissue **& Pass** the remaining carcass.
- **Condemn** - ONLY if there is ALSO evidence of systemic changes such as septicemia/toxemia and record under the "Other" category on the lot tally sheet.

Ascites

Look inside the carcass for evidence of clear to amber fluid:

- Around the heart
- Inside the thoracic and/or abdominal cavity
- The liver may also present with a ground-glass appearance

Disposition of Ascites

Possible Dispositions:

- **Trim** the affected tissue **& Pass** the remaining carcass, if the carcass doesn't meet any of the criteria below.
- **Condemn if the carcass:**
  1. Has **signs of sep/tox** or other disease conditions, including inflammatory lesions, tumors, or other degenerative conditions.
  2. Has any amount of ascitic fluid present in the body cavity that **prevents visualization of the interclavicular space**.

- In non-NPIS establishments, instruct the "inspector's helper" to record condemned birds under the "Other" category on the lot tally sheet.

Occult Vaccination Lesions

- Vaccines are typically administered in the muscle tissue of the breast, leg, wing, or tail, or subcutaneously in the dermis of the inguinal fold, neck, or wing web.
- Hidden “occult” lesions from injections are typically found in mature birds.
- Observe the carcass exterior for:
  - Reddened or inflamed area around the injection site.
  - More severe lesion extending into the surrounding tissue.

Disposition of Vaccination Lesions

These areas of inflammation are treated like a lesion of IP.

9 CFR 381.86

- Any organ or other part of a carcass which is affected by an inflammatory process shall be condemned and if there is evidence of general systemic disturbance, the whole carcass shall be condemned.

Possible Dispositions:

- **Trim** the affected tissue **& Pass** the remaining carcass.
- **Condemn** - ONLY if there is ALSO evidence of systemic changes such as septicemia/toxemia and record as “Other” on the lot tally sheet.

Avian Tuberculosis

What is Avian Tuberculosis?

- Definition: Chronic, granulomatous infection of birds, including poultry, game birds, and migratory birds

Causes:

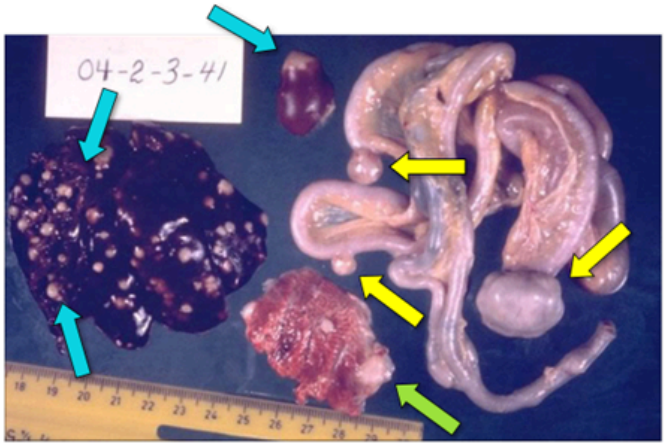
- *Mycobacterium avium*

Note: Avian TB is seldom seen today in poultry species.

Avian Tuberculosis Post-mortem Lesions

What to look for:

- Gray to yellow nodules (tubercles) along periphery of the intestine (yellow arrow)
- Discrete granulomas present in the liver and spleen (blue arrows)
- Tubercles in bone marrow (advanced cases)
- Often few or no gross lesions in lungs (green arrow)



Avian Tuberculosis Liver & Spleen Lesions

Affected liver on left; Normal on right

Affected spleen on left; Normal on right

Disposition of Avian Tuberculosis

9 CFR 381.81

- Carcasses of poultry affected with tuberculosis shall be condemned.

Possible Dispositions:

- **Condemn** and record as "Tuberculosis" on the lot tally sheet

Note: Very rare in commercial flocks.

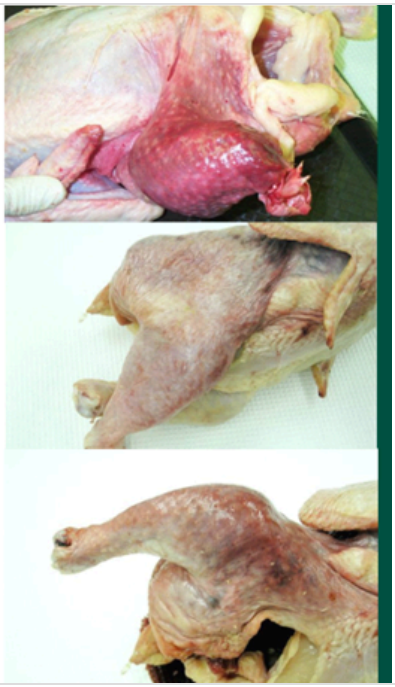
Disposition of Bruises

9 CFR 381.89

- Any part of a carcass which is badly bruised shall be condemned and if the whole carcass is affected as a result of the bruise, the whole carcass shall be condemned. Parts of a carcass which show only slight reddening from a bruise may be passed for food.

Possible Dispositions:

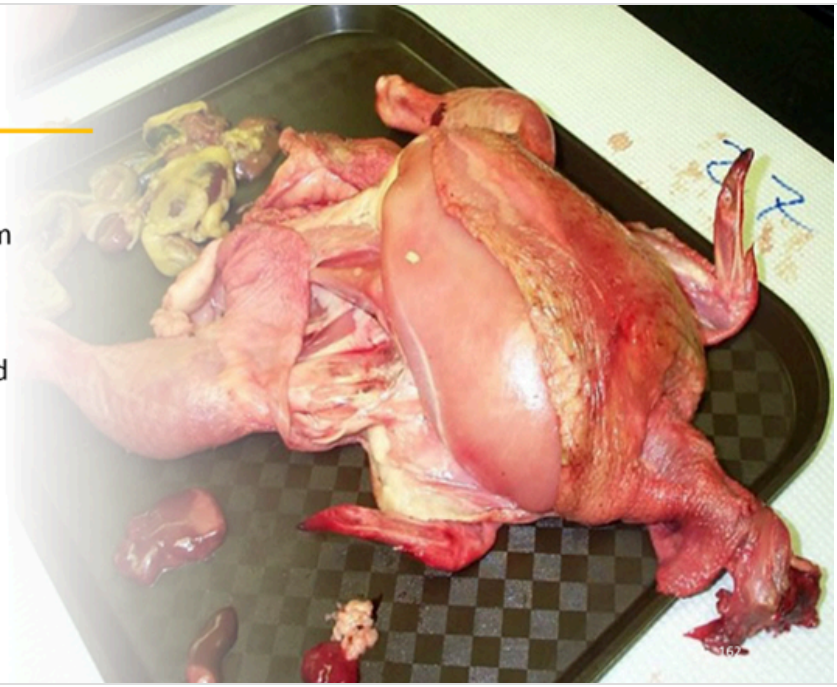
- **Trim** the affected organ or part **& Pass** the remaining carcass.
- **Condemn** - ONLY if the bruise is generalized and record under “Bruises” on the lot tally sheet



Cadavers

What is a cadaver?

- Poultry that die from causes other than slaughter; or
- Poultry that are not physiologically dead because due to ineffective slaughter, they entered the scald vat and drowned.



Hyperemia (reddening) of the skin

A normal carcass flanked by cadavers on both sides

Hyperemia of the skin around the neck

Cadavers

What to look for?

- The skin of the carcass or neck is cherry red to purple. (9 CFR 381.90)
- Prominent and congested vessels in the viscera.

Disposition of Cadavers

9 CFR 381.90

- Carcasses of poultry showing evidence of having died from causes other than slaughter shall be condemned

- **Possible Dispositions:**
  - **Condemn** and mark as a “Cadaver” on the lot tally sheet.

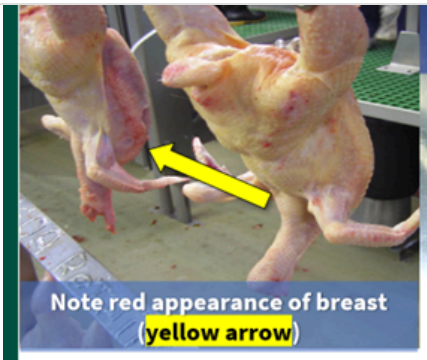
Dead on Arrival (DOA)

What is a DOA?

- A DOA carcass is a bird that is dead other than by slaughter.

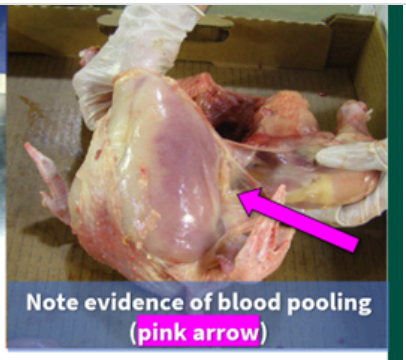
What to look for?

- May see signs of blood pooling (both dark and light areas of meat).
- Will typically be purplish in color.
- The viscera will be dark and congested.
- May exhibit signs of decomposition.
  - Friable visceral organs (soft and tears easily)
  - Carcass discoloration
  - Off-condition odor



Note red appearance of breast (yellow arrow)

Note purplish color of carcass and congested viscera (green arrow)



Note evidence of blood pooling (pink arrow)

Dead on Arrival (DOA)

If the carcass is questionable, seek supporting evidence by examining the viscera (liver, heart, lungs and mesentery) for evidence of congestion.

- If still unsure, hang the carcass back for IIC disposition.

Disposition of DOAs

9 CFR 381.90

- Carcasses of poultry showing evidence of having died from causes other than slaughter shall be condemned.

Possible Dispositions:

- **Condemn** and mark as a **"**Cadaver**"** on the lot tally sheet.

Note: BOTH Cadavers and DOAs recorded under cadavers on the lot tally sheet

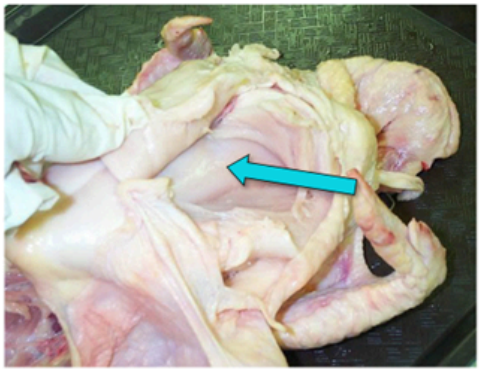
Overscald

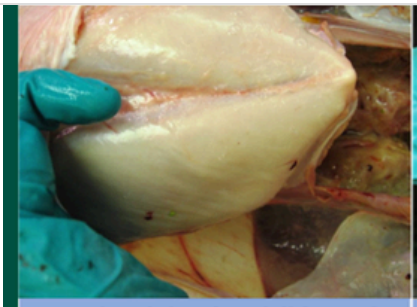
What is an overscald carcass?

- To be considered an overscald, a bird's **deep pectoral muscle** or **tender** must have a cooked appearance (blue arrow).

Observe the carcass exterior looking for:

- Breast muscle having a white or cooked appearance indicative of overscald.
- The breast meat of several (2-3) birds may need to be incised to view the deep pectoral muscle.
- Mutilation of the carcass is also a common finding.





Note the pink color visible on the exterior of the breast muscle

Note breast muscle is white and mutilated, but interior is pink

Note the pink color in the interior of the incised breast muscle

Hardscald

The inspector must also take care to differentiate "Hardscald" from "Overscald."

What is a hardscald carcass?

- Cooking of the most superficial surface of the superficial pectoral (breast) muscle occurs in a hardscald carcass and produces only a whitening of that surface.

Mutilation vs. Overscald

- Mutilation (381.91(a)) and overscald (381.92) are NOT the same condition.
- Mutilation is a common finding on overscalded carcasses due to excessive temperature or scalding time.
- Mutilated carcasses (in the absence of overscald) are recorded under contamination on the lot tally sheet and condemned.

Disposition of Overscald

9 CFR 381.92

- Carcasses of poultry which have been overscalded, resulting in a cooked appearance of the flesh, shall be condemned.

Possible Dispositions:

- Overscald → **Condemn** and record as "Overscald" on the lot tally sheet.
- Hardscald → **Trim** the cooked tissue **& Pass** the remaining carcass.

Causes of Liver Condemnation

- Petechial hemorrhages
- Fatty degeneration
- Inflammation and necrosis
- Cysts or cirrhosis
- Discoloration
- Contamination

Localized pathology of the liver or spleen does not require simultaneous condemnation of the kidneys unless the kidneys are also affected by visible pathological changes.

Liver vs. Kidney Disposition

Localized pathology of the liver or spleen does not require simultaneous condemnation of the kidneys unless the kidneys are also affected by visible pathological changes.

Liver Condemnation - Petechial Hemorrhages

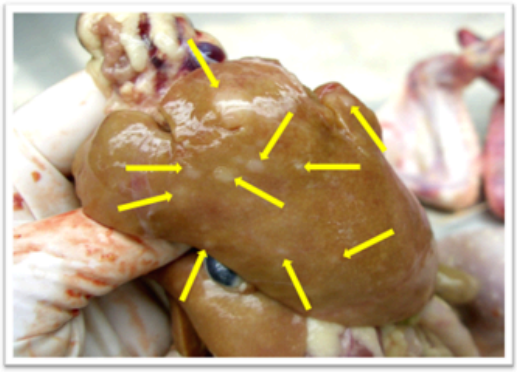
Hemorrhages

- Excessive blood loss into the liver from the blood vessels
- May appear as large blood clots or extensive petechiae (small perfectly round purplish-red spots)

Liver Condemnation - Fatty Degeneration

Fatty degeneration

- Characterized by visible, well defined light spots (yellow arrows)



Note: If the liver has a yellow color throughout or in two or more places, resulting from excessive fat deposits, (fatty infiltration, **NOT** degeneration), then the liver should be considered as wholesome. Fat birds, especially fowl and occasionally fryers, commonly have the uniform yellow colored (fatty) liver.

Liver Condemnation - Green Liver

Green Liver

- Discoloration caused by gall bladder or bile duct abnormalities or post-mortem changes

Kidney Condemnation

Condemn kidneys (381.78(a)) if:

- Renal (kidney) pathology, including tumors, are present.
- Airsacculitis is present specifically in the abdominal air sac membranes, making kidneys an affected tissue, and the posterior (back) part of the carcass is salvaged for airsacculitis per 9 CFR 381.84.
- Localized pathology of the liver or spleen indicates the kidneys were are also affected by visible pathological changes.

Kidney Dispositions

How to condemn kidneys:

- Online IPP instruct the “inspector’s helper” to mark birds for kidney removal.
- Offline IPP are to verify removal of the kidneys by the establishment.
- The posterior (back) part of the carcass is salvaged for airsacculitis so that the kidneys can be removed.

Carcasses With No Viscera or Missing Visceral Parts

- IPP should be able to make a disposition with a least one major organ presented for inspection (heart, liver, or spleen)
- If no viscera are presented and IPP cannot make disposition, they should retain the carcass for the IIC
- If no viscera are presented and there is a disease condition affecting the lot, then IPP should notify IIC for assessment of the specific production lot.

Plant Rejects

- When should the “inspector’s helper” mark a carcass as a “Plant Reject” on the Lot Tally Sheet?
  - If the establishment chooses to condemn a carcass(es) prior to them receiving inspection
  - If the establishment rejects carcasses at salvage or chooses to suspend salvage operations
  - If the establishment disposes of any carcass as inedible.

Fractures - with and without Bruising

Fractures - 381.91

- A fracture with no associated hemorrhage/bruising is passed.
- A fracture with hemorrhage/ bruising in the affected part is trimmed and the remainder of the carcass is passed.
- A compound fracture (the bone goes through skin) is always trimmed whether or not there is hemorrhage present.

Fractures

If the fracture is not compound and there is no hemorrhage, then the entire part is **PASSED** and not trimmed.

Luxations

Luxation

- Simple disjointment of the bone without breaking the skin and without hemorrhage.
- Does not have to be trimmed.
- If hemorrhage is present but does not extend into the musculature, instruct the “inspector’s helper” to trim or slit/wash out the hemorrhage.

Contamination (Other Than Feces)

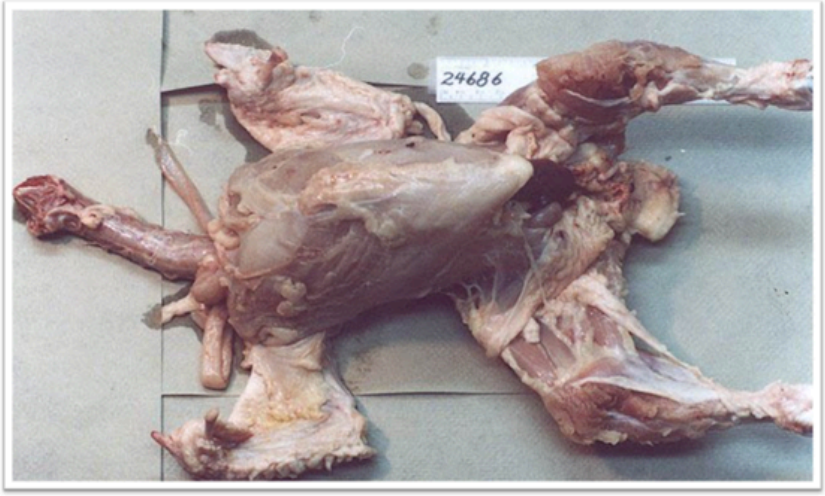
9 CFR 381.91(b)(1) and (2)

- Carcasses contaminated with digestive contents shall not be condemned if properly and promptly reprocessed either online or offline using an approved antimicrobial intervention system.

Note: Image of ingesta inside carcass on kidney area.

Contamination (Other Than Feces)

Carcass that are mutilated by the pickers should be condemned for contamination.



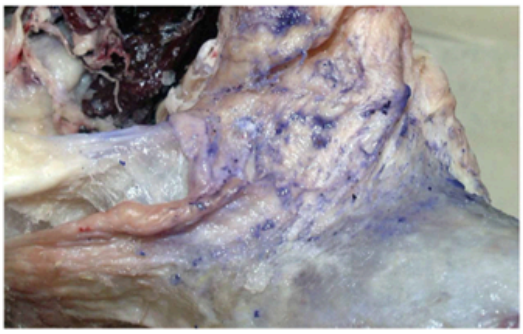
Contamination (Other Than Feces)

9 CFR 381.91(a)

Carcasses contaminated by volatile oils, paints, poisons, gases, scald vat water in air sacs, shall be condemned. Mutilated whole carcasses, organs, or other parts shall be condemned.

Possible Dispositions:

- Condemn if contaminated with any substances listed above.
- If contamination on a liver or spleen localized is localized, simultaneous condemnation of the kidneys is not required unless the kidneys are also affected by visible pathological changes.



Oil contamination on poultry carcass

Online and Offline Reprocessing

The term reprocessing refers to the actions the establishment takes to wash away any contaminants using an approved antimicrobial intervention.

- Involves the removal of digestive tract contents
- Apply an approved antimicrobial solution
- Product is subject to reinspection
- Can occur both online and offline

Salvage

The term salvage refers to the actions the establishment takes to trim away any unwholesome or diseased portion of a carcass that is localized.

- Conducted under sanitary conditions
- Adequate product flow maintained
- May be a separate procedure for each type
- Subject to reinspection

Reprocessing/Salvage Criteria

- The establishment may have a separate procedure for each type of salvage (ex. IP, air sac, online and offline fecal removal, etc.).
- Sanitary conditions
- Adequate facilities and personnel
- Continuous product flow

Condemned and Inedible Products

- **Condemned** – Inspected and found to be diseased or otherwise adulterated
- **Inedible** – Product that is adulterated, not inspected, or not intended for use as human food

Control of Condemned Materials

- **Edible product may have a similar appearance to condemned product and some inedible product.**
- **Inspectors must maintain control over condemned products. There are three ways to do this:**
  - Sight
  - Lock or Seal
  - Denaturing
- This is the primary responsibility of offline personnel, but you can discuss any concerns with the IIC.

Line Speeds

FSIS may require the establishment to adjust line speed to a slower rate than the maximum for the following reasons:

- Class/size
- Presentation
- Disease
- Contamination
- Facilities

Post-mortem Inspection Documentation

Online Inspector Responsibilities:

- Provide Lot Tally Sheet to the inspector's helper at the beginning of each shift
- Direct establishment employee to mark appropriate disposition
- Provide Lot Tally Sheet to offline IPP after a lot change or at the end of shift

POULTRY INSPECTION - LOT TALLY SHEET

DATE INSPECTED | PLANT NO. | LOT NO.

CLASS OF POULTRY

☐ Young Chickens (01) ☐ Fryer-Roaster Turkeys (03) ☐ Ducks (06) ☐ Other (Guineas, Squabs, Pigeons, etc.) (09) ☐ Heavy Fowl (12)

☐ Light Fowl (02) ☐ Young Turkeys (04) ☐ Geese (07) ☐ Capons (11) ☐ Young Breeder Turkeys (14)

☐ Old Breeder Turkeys (05) ☐ Rabbits (08)

POST-MORTEM INSPECTION

CONDEMNED ON POST-MORTEM INSPECTION

CARCASSES (WW) Lb. | PARTS Lb.

CONDEMNATION CAUSE	10	20	30	40	50	60	70	80	90	100	TOTAL
Tuberculosis											
Leukosis											
Septicaemia and Toxemia											
Synovitis											
Tumors											
Bruises											
Cadaver											
Contamination											
Overscald											
Airsacculitis											
OTHER Inflamatory Process (IP)											
No Viscera (NV)											
Plant Reject (PR)											
SPECIAL SURVEYS CODES											

REMARKS

NAME OF INSPECTOR

FSIS FORM 8000-16 (5/99) REPLACES FSIS FORM 8000-16 (5/99), WHICH MAY BE USED UNTIL EXHAUSTED USDA - FSIS

Poultry Slaughter Procedures Video

This video briefly covers the poultry slaughter process.

Key Points Summary

- Poultry Anatomy
- Ante-mortem Inspection
- Good Commercial Practices
- Post-mortem Inspection

USDA Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Science | Policy | Food Safety

This concludes the Microbiology training module.