



Tikrit University  
College of Veterinary Medicine

# ***Metabolic and management diseases in broiler and layers***

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Lecturers link

## **Metabolic and poor management diseases that affected Layers and Broilers**

The chickens ( layers and broilers) affected by some of noninfectious disorders (Metabolic and mangemental diseases) which causes economic losses in poultry industry , these diseases are:

- 1-Calcium tetany
- 2-Fatty liver hemorrhagic syndrome (FLHS)
- 3-Ascites
- 4-Cannibalism
- 5- Ammonia exposure

### ***1- Calcium tetany***

#### **Definition:**

It is a medical condition resulting from a defect in calcium metabolism, which leads to a decrease in the level of calcium in the blood. As a result, the muscles contract severely and fail to relax, causing the body to stiffen and then die.

#### **Synonyms :**

Hypocalcaemia, Rickets.

#### **The factors which lead to hypocalcaemia:**

- 1) Genetics (highly production).
- 2) Early production (18 – 20 weeks age).
- 3) Heat stress.

#### **Clinical signs:**

- 1) Panting with Asphyxia
- 2) Cyanosis of combs and wattles .
- 3) Deformity in shell egg caused by deformity in the glands which responsible for egg shell secretion in the oviduct.
- 4) Mortality up to 1-2 % / week for 1-2 weeks.

### **P.M. lesions:**

- 1- Present the hemorrhage in the ovary.
- 2- Congested of the air sacs .
- 3-Bulked pectoral muscles.
- 4-Hydropericardium.
- 5-Enlargement of the left side of the heart.

### **Diagnosis:**

- 1-Clinical signs
- 2- Blood tests
- 3-Diet analysis

### **Treatment:**

- 1) Provide 5 gm of oyster shell per hen for 3 days
- 2) Vit. AD3 E and C in drinking water, in severe cases require 2- 3 weeks treatment.

### **Prevention:**

- 1-Good management .
- 2-Add the Vit. D3 with Vit. C in to drinking water.
- 3- Providing a balanced diet contain of Calcium such as limestone or crushed oyster shells to laying hens.

## ***2.Fatty liver hemorrhagic syndrome (FLHS) ( Fatty Liver Disease)***

### **Definition:**

It is a metabolic disorder characterized by a change in the consistency of the liver to a fatty consistency, accompanied by severe bleeding in the liver and appears in hot weather. Death may occur due to the presence of this bleeding.

**Causes:**

1. Excessive consumption of high-energy diets in birds.
2. High temperature.
3. Stress, toxins and high egg production.

**Clinical signs:**

1. Sudden drop in egg production.
2. Paleness with shrunken in combs and wattles.
3. Increased water consumption
4. Mortality varies from 2 to 10%.

**P.M. lesions :**

1. Dead birds have large blood clots in the abdomen partly cover the liver .
2. The liver is enlarged with pale orange, soft, friable and easily fractured because fatty texture.

**Diagnosis:**

Diagnosis is based on history, clinical signs and necropsy gross lesions.

**Treatment:**

Addition of Vitamin E, choline chloride, vitamin B 12 and instill in the feed has been shown to significantly improve the condition in some laying flocks.

**Control:**

1. Reduce energy intake.
2. Addition of choline to the feed.
3. Avoid use of Moldy feed or feed ingredients in the poultry diets.

### ***3.Ascites (Water Belly)***

#### **Definition:**

Ascites = accumulation of clear (serous transudate) fluid in the abdomen. It's a noninfectious, but metabolic disease of broilers and ducklings.

#### **Clinical Signs:**

- 1- Difficulty walking
- 2- Weakness and abdominal distension.
- 3- Combs and wattles are cyanotic (pale to bluish).
- 4- Difficulty breathing with panting

#### **Gross lesions:**

- 1- Abdominal bloating due to it containing yellow fluids with fibrin.
- 2- The presence of fibrin clots surrounding the liver, which leads to its smaller size.
- 3- Air sacs are dark red.
- 4- The pericardial sac can be filled with clear fluid (hydro pericardium).
- 5- The right ventricle is dilated with thin.

#### **Predisposing factors:**

- 1- Broiler chickens suffer from rapid rate of growth and muscle development.
- 2- Lower the ratio of air sacs volume / body weight
- 3- Feed on high energy diet.

#### **Prevention:**

- 1- Decrease energy level in feed to slow down growth rate.
- 2- Control environmental temperature, litter moisture, humidity and air quality.

## 4. Cannibalism

### Definition:

It is a vice acquired by chickens and turkeys raised in a crowded area. It results in tissue loss as a result of pecking and plucking of feathers from different parts of the body. Which may lead to death.

### Cause

- 1-Overcrowding
- 2-Insufficient feeders, waterier or nesting space.
- 3-Incorrect lighting (Bright lighting).
- 4-Prolapse the part of oviduct.
- 5-High environmental temperatures.
- 6-Changing the diet to a less-value food.

### Clinical signs and P. M. lesions:

- 1-Toe pecking in chicks.
- 2-Pecking the vent in older birds.
- 3 -Birds dying of cannibalism may show anemia.
- 4-Blood stained feathers in the affected body parts.

### Diagnosis:

Clinical signs and P.M. lesions, and showed the anemia which should be differentiated from bacterial dermatitis.

### Treatment:

- 1- Providing adequate diet and supplying mash diets rather than pelleted feed.
- 2- Rearing birds on floor litter rather than on cages
- 3- Reducing light intensity between 5 and 10 lux.
- 4- Avoiding overcrowding
- 5- Beak trimming .
- 6-Use an antibiotic wound spray on the oviduct prolapse part of hens.

## ***5. Ammonia exposure (Ammonia Toxicity) (Ammonia-burn) (Ammonia Blindness)***

### **Definition:**

An inflammatory condition affecting the eyes of chickens, resulting from prolonged or large exposure to ammonia fumes. Ammonia concentrations exceeding 25 parts per million are considered toxic to chickens.

### **Harmful Effects of Ammonia:**

- 1- Ammonia damages the respiratory system and thus predisposes to infections, such as E. coli infection and Infectious Coryza
- 2- Ammonia also reduces body.
- 3- Ammonia reduces feed consumption and growth rate.

### **Clinical sig**

- 1-The eyelids are swollen, redness and the eye sensitive to light
- 2-Gray cloudy-looking cornea with blindness.
- 3- Difficulty breathing.

### **Prevention:**

- 1 - Providing proper ventilation.
- 2-Provide a litter that absorbs moisture well.
- 3- Provide enough space for chickens and avoid crowding.