

#### ***4. Ascites Syndrome and Right Ventricular Failure of Broiler Chickens.***

##### ***Definition:***

Ascites : accumulation of clear fluid in the abdomen. Ascites syndrome is a noninfectious, metabolic disease of broiler chickens characterized by pulmonary hypertension, right-sided heart failure and accumulation of excessive fluid in the abdomen. This is a form of congestive heart failure in chickens. Birds are predisposed to right-sided heart failure because of a muscular flap that forms .

##### ***Clinical Signs:***

1-Sudden death of previously healthy birds, usually at 3-5 weeks of age, in a flock with good rate of weight gain.

2-Live birds are smaller than normal, don't move, have respiratory distress and a distended abdomen.

3-Combs and wattles are cyanotic (pale to bluish).

##### ***Gross lesions:***

1-Cyanotic combs and wattles.

2-The abdomen is distended by abundant clear, yellow fluid.

3-Fibrin clots often surround the liver, which is small.

4-Lungs are dark red and wet (edema).

5-The pericardial sac can be filled with clear fluid (hydro pericardium).

6-The right ventricle is dilated with thin.



##### ***Predisposing factors:***

1- Broiler chickens that are bred for high feed efficiency with rapid rate of growth and muscle development .

2- Broiler chickens have lower ratio of total lung volume .

3- Continuous availability of high energy and high quality feeds typical of grower ration.

***Prevention:***

- 1- Decrease energy level in feed to slow down growth rate.
- 2- Try limiting feed during the grow-out or turning off house lights at night.
- 3- If mortality is >1-2% from ascites look for other complicating factors such as high sodium levels in feed or water, respiratory infection.

**Sodium and chloride :**

Sodium and chloride ions play a role in the maintenance of membrane potentials, and in fluid, ionic and acid-base balances.

**Deficiency**

Deficiencies in these ions produce disturbances in cellular function and water distribution, resulting in **stunted growth, dehydration, neuromuscular dysfunction and death**. **Chloride** deficiency also causes **nervous signs** in chicks.

In laying hens, sodium deficiency causes **drop in egg production, reduced egg size and cannibalism** .

**Toxicity**

Excess dietary salt can be toxic (lethal dose is approximately 4g/kg of body weight). Signs of salt intoxication include **intensive thirst, diarrhea, progressive muscular weakness, inability to stand, convulsions and death**. **Sodium** excess results in **ascites, hydropericardium, right ventricular hypertrophy and right ventricular failure in broiler chickens**. High levels of salt may also cause **a drop in egg production and the excretion** of diluted droppings producing wet litter.

