ASCITES IN BROILERS

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A CASE OF ASCITES IN BROILER BIRDS

- Case No A59/2014

- This case was reported on 3rd April 2014

- From ting’ang’a, Kiambu county.

- Number in the flock – 700; Affected – 60; dead – 60

- Age of the birds was 32 days

- 3 carcasses were submitted.
Clinical History

- Duration of outbreak was 3 days.
- Lack of appetite.
- Swollen abdomen.
- Panting.
- Ventral recumbency.
- Unable to walk.
Postmortem findings

- Externally, the carcasses were in good body condition
- Distended abdomen
- Breast muscles were congested
- Opening the abdominal cavity, there was amber or clear fluid (lymph) that resembles blood plasma.
- The heart was enlarged and there was fluid in the pericardium (the sac surrounding the heart).

- The liver edematous (swollen and congested) and covered by fibrin (blood clotting protein which is soluble in the blood) adhering to the surface.
Discussion

- It is a condition in which there is excess amount of ascitic fluid
- Causes death
- If the birds mature – the carcass would most often be condemned
Recent Trends

- In the World Broiler Ascites Survey (Maxwell and Robertson, 1996), information on 18 countries from four continents showed that ascites affects 4.7% of live broilers worldwide.

- Loss for ascites related mortality has been estimated to be in excess of $500 billion per year.
In Kenya

- Leading causes of broiler poultry condemnations at Tigoni abattoir from January to April 1995 were cadavers (51.5%), ascites (26.1%) and others (22.4%).

- For instance in 1994, the total market loss was estimated at Ksh 1,677,100 (Njue, S. W. et al, 1997)
Etiology

- Rapid growth rate requires a high basal metabolic rate.

- Sustaining a high metabolic rate requires oxygen.

- That the demand for oxygen may exceed the cardiopulmonary capacity to supply sufficient oxygen.
This ultimately leads to an oxygen deficit.

The heart responds by increasing its output of (deoxygenated) blood to the lungs for oxygenation.

The right ventricle (which pumps blood to the lung) responds to the increased demand for oxygen by increasing heart rate and blood volume.
Right ventricle dilates, the valves become increasingly inefficient and allow some blood to flow back into the atrium.

This leads to right ventricular failure.

The increase in back flow causes liver congestion (edema).

capillaries cannot exchange the fluid and the high pressure causes exudation of the plasma into the body cavity.
Rapid growth rate
High basal metabolic rate

Increased body demand for oxygen

Increased cardiac output

Increased pulmonary arterial pressure

Right ventricular hypertrophy

Valvular insufficiency
Right ventricular dilation
Right ventricular failure

Liver congestion and edema

Ascites
normal

ascites
Ascites at 4 – 5 weeks of age, although signs of ascites have been recorded in day-old birds

- Panting
- Dilated (enlarged) abdomen
- Increased respiration rate and reduced exercise tolerance
- Older birds which are mildly ascitic may show signs of cyanosis – combs and wattles
- Spontaneous death, especially when excited.
Reducing incidence of ascites

- Ensure adequate ventilation
- Maintain air quality – avoid contaminants e.g. high levels of carbon monoxide, carbon dioxide, dust etc. – reduce respiratory efficiency.
- Avoid periods of cold stress – increase metabolic rate
- Restrict feeds intakes especially 4–5 th weeks
Methods of feeds restriction

- Feed form (Mash v.s. Pellets)

- Composition of the feed (nutrient reduction programs) – lowering the energy content of the diet

- Limited access to feed (meal feeding)

- Skip a day feeding
Thank you