

INCIDENCE OF ASCITES IN BROILER BREEDERS

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Abstract: In Hosur region, from a environmentally controlled house of female broiler breeders, Ten dead birds in the age of 39 weeks were examined to know the reason of death during the rainy month of June 2022. The total flock size was 6000 and birds were in environmentally controlled battery cages from day one of age. The total mortality over a period of 24 weeks was 6.5percent. The birds appeared normal and cyanosis of comb, higher body weight, abdomen enlarged. Necropsy findings revealed abdominal cavity with excess amount fluid, Enlarged Liver and heart, congested lungs and intestines. Ascites was confirmed to be the cause of death.

Keywords: Broiler breeder, EC house, rain, high altitude, over body weight Ascites.

INTRODUCTION

Ascites is a cardiovascular metabolic disorder characterized by fluid accumulation in the abdominal cavity. It is a common cause of economic losses in poultry farms, due to mortality and downgrades in fast-growing Broiler Breeder strains. The incidence of Ascites is influenced by both environmental and genetic factors. There are several clinical signs associated with ascites syndrome in broiler chickens: pulmonary hypertension, right ventricular hypertrophy, central and portal venous congestion, hepatic damage, and transduction of fluid into the abdominal cavity (Riddell, 1991; Yersin et al., 1992; Julian, 1993; Wideman et al., 1995) There have been, however, some negative results of this genetic progress, one of which is pulmonary hypertension syndrome (PHS), or Ascites. Traditionally, Ascites has been associated with rearing birds at higher elevations or in colder rearing environments where partial pressures of oxygen is lower than normal. Ascites is a syndrome caused as a result of hepatic damage due to prolonged pulmonary hypertension, as liver damage releases fluid from portal vein into the body cavity. High-altitude impose several challenges to broiler chickens, including hypobaric hypoxia, dehydration and cold (Parr et al.,2019). Research has shown that HIF-1 α is associated with the development of Ascites syndrome in broiler chickens (Zhang et al., 2013).

It has been estimated that Ascites is the cause of economic losses annually; making it both a significant animal welfare and economic concern. The purpose of this study was therefore to

define the susceptibility of fast growing meat type chickens to ascites at high altitude in Denkanikottai, Hosur.

1. MATERIALS AND METHOD

10 dead birds from Environmentally controlled house broiler breeder of 39 weeks of age were examined to know the history of pale comb, high body weight, off feed and 2% percent loss in egg production with 6.5 percent mortality over the period of 24 weeks. The persistent mortality (0.7%) per week was recorded 37 to 38 weeks and increased 39 weeks from 0.7 to 1.5%. Body weight, temperature inside shed and mortality percentage were also recorded. After detailed examination conducted on dead birds, gross lesions were recorded.

2. RESULTS AND DISCUSSION

1. Broiler Breeder Body weight – weekly

Age	Actual Bodyweight(Grams)	Std Bodyweight(grams)	+/-
37	4526	4014	+512
38	4650	4032	+618
39	4694	4050	+644

2. House Inside shed Temperature and RH%— Night time

Age	Average shed Temperature – degree Celsius	Average Humidity %
37	20	65%
38	18	70%
39	17	75%

Low ambient temperature stimulates an increase in heat production, which increases the oxygen requirement of the body. Therefore, both low temperature and high humidity can increase the incidence of Ascites ([Huchzermeyer et al., 1988](#)). The housing environment, including factors such as temperature (cold or fluctuating temperatures) and air quality (dust concentration, carbon dioxide levels and oxygen levels) is known to influence the incidence of ascites in broiler chickens. The incidence of ascites greatly increases at altitudes greater than 1300 m above sea level, presumably because of the low oxygen partial pressure (Hernandez, 1987).

3. Weekly Mortality percentage

Age	Std mortality percentage/ week	Actual mortality percentage/ week
37	0.2%	0.7%
38	0.2%	0.9%
39	0.2%	1.5%

4. Hen Week Egg Production

Age	Actual Hen week Egg production percentage	Actual Hen week Egg production percentage	+/-
37	75.5%	73.8%	-1.7
38	74.9%	72.9%	-2.0
39	72.8%	70.8%	-2.0

5. Ascites Gross Lesions – Broiler Breeder Necropsy

1. Higher body weight with Distended Abdominal Enlargement



2. Abdominal cavity filled with Fluid**3. Liver and Heart Enlargement**

CONCLUSION

High altitude, cold temp, poor ventilation and Obesity significantly induce the Ascites in broiler breeder chickens. There are effective nutritional interventions and management practices that could be helpful to overcome the challenges such as

- Better ventilation
- Alkalinizing the ration by increasing Sodium bicarbonate and decreasing sodium chloride (common salt).
- Adding anti- oxidants such as Selenium, Vitamin C, Vitamin E and Zinc to the diet.
- Avoiding longer sheds

These Management strategies particularly during the rainy season and cold environments have been shown to be effective to overcome the situation.

Broilers are less susceptible from Genetic cause of Ascites. However it can also be controlled by proper selection of breeders.

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