

## **Abstract:**

Ascites syndrome is one of the serious problems of poultry in most parts of the world, including Iran and the economic losses it's in broiler chickens are increasing. Considering the relatively large damage that occurs every year from the ascites syndrome to the country's industry, the minds of the researchers are finding a suitable way to prevent and treat this syndrome. The purpose of this study, investigate the effect of lime powder (*Citrus X Limon*) in broilers suffering ascites. In this experimental study, 90 one-day-old broiler chicks were purchased and the chicks were kept in identical and controlled conditions for 6 days. On the 7th day, 80 chicks were selected, in dominant, a completely randomized plan were divided into 4 care group and 2 replicate with 10 chicks in per replicate. Then, on seventh day to create experimental ascites, a volume of 0.12 % sodium was added to drinking water in 3 groups of chicks. In order to initiate the treatment from the 14th day of breeding, the lime powder was added 1% to the diet of one group and 2% to the other group's diet, and a group was considered as the Ascites control group and the other group was control. On the 21st day, 2 chicks were selected from each replicate and autopsied and In terms of incidence of ascites, were examined. Then, the sodium content was increased to 0.18%. Thus, experimental groups include: 1) control 2)0.18% sodium in drinking water (Ascites control group) 3)0.18% sodium in drinking water + 1% of lime powder in diet 4)0.18% sodium in drinking water + 2% of lime powder in diet. In the 30th experiment period, 4 chicks were randomly selected from each replicate and after weighing, Blood samples were taken from the wings vein and to measure the hematocrit was placed in tubes containing anticoagulant. Immediately after taking blood, In order to measure the right ventricular volume (RV) and total ventricles (TV), chicks were killed and autopsied. Results of the sampling in days 21 and 30 were statistically analyzed by SPSS® software. The Hematocrit volume, RV/TV ratio and other factors in day 21 did not show significant differences among groups ( $p>0.05$ ). This result indicates that the rate of 0.12% of sodium in drinking water, had little impact on the incidence of ascites and higher levels of sodium are needed to induce ascites. But in the results of day 30, right ventricle weight in the group receiving sodium showed a significant difference compared to the control group ( $p<0.05$ ). The ratio of RV/TV in the Ascites control group showed a significant increase compared to the control group ( $p<0.05$ ). While the hematocrit volume in day 30 was not affected by our experimental diets ( $p>0.05$ ). But in numerical terms, hematocrit in group 3 compared to the Ascites control group improved. Also, in group 4, the numerical value of hematocrit is even lower than the control group. Due to the lack of mortality in the groups receiving lime powder and improvement of RV/TV ratio and hematocrit, it can be said that the use of this substance is effective in preventing ascites.

Key words: Lime powder, Ascites, Hematocrit, RV/TV, RV/BW



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**Study on the effects of lime powder (Citrus Limon)  
On the parameters of ascites syndrome and  
Histopathology survey in broilers**

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