



University of Zabol
Graduate school
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The Thesis Submitted for the Degree of DVM

**Study the effects of lime powder) citrus
Limon (on the electrolytes in broilers
with ascite syndrome**

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Abstract:

Ascites is defined as an accumulation of excessive amounts of serous fluid in the abdominal cavity and it is a metabolic disorder with multi-factorial predisposing factors. Electrolytes include sodium, potassium, chloride, etc that in the body of organisms are compounds that dissolve as positive and negative particles in solutions. Water and electrolytes in the body of living organisms are strictly controlled by several mechanisms. Therefore, the amount of electrolytes in the body of living organisms, especially poultry, has certain amounts. The purpose of this study, investigate the effect of lime powder on the electrolytes in broilers with ascites syndrome, their changes and their connection with RV/TV. In this study, 90 one-day-old broiler chicks were kept in identical and controlled conditions for 6 days. On the 7th day of age, 80 chicks were selected and divided randomly into 4 groups with 2 replicates and 10 chicks in each replicate. Then for the induction of experimental ascites, a volume of %0.12 sodium obtained from edible salt was added to the drinking water of 3 groups of chicks (groups 2,3 and 4) and the other group (group 1) was considered as the negative control. The lime powder was added with concentrations of 1 and 2 percent to the diets of groups 3 and 4 from the 14th day of age. On the 21 day of age, 2 chicks were selected from each replicate and necropsied in order to evaluate the factors related to ascites syndrome. The amount of sodium was then increased to 0/18 percent in the drinking water of group 2, 3 and 4 and the treatment with lime powder was continued in the groups 3 and 4. On 30th days of age, 4 chicks were randomly selected from each replicate and blood samples were taken from the wings vein and measure the electrolytes by spectrophotometry. In order to measure the weight of right ventricle (RV) and total of two ventricles (TV), chickens were slaughtered and necropsied. Serum electrolytes were evaluated in chickens with ascites syndrome. The data were analyzed using the SPSS and statistical software. The results showed that the sodium and potassium in the blood of ascites control chickens increased compared to healthy control chicken, which was significant for sodium. also blood calcium of ascites control chickens decreased compared to healthy control group, which was not statistically significant. The results showed that the amount of calcium and sodium after using lime powder is not statistically significant, but the amount of potassium increases with the consumption

of lemon powder ($P < 0/05$). The result of sampling on day 30 were statistically analyzed by SPSS software. At day 30 results, right ventricular weight in the sodium receiving group showed a significant difference compared to the control group ($P < 0/05$). RV/TV ratio in the ascetic control group compared to the control group showed a significant increase ($P < 0/05$). Due to the lack of losses in the groups receiving lemon powder and improving the RV/TV ratio, it can be said that the use of this substance is effective in preventing ascites. According to the results of our study, the use of sour lemon powder in heat stress and many other conditions in which broilers are deficient in electrolytes, especially potassium, can be included in the diet.

Key words: Lime Powder-Ascites Syndrome-Broilers-Electrolytes