THE EFFECT OF DIFFERENT LEVELS OF VINASSE ON GUT DEVELOPMENT IN BROILER CHICKS

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Introduction

Vinasse, condensed molasses soluble, is a coproduct generated by the fermentation of molasses to obtain alcohol, citric acid, yeasts, and other substances in the sugar industry (Fernandez et al., 2009). Caro Rios et al. (2011) reported an increase in the weight of the digestive tract was observed in birds that consumed diet supplemented with vinasse. The aims of this study were to investigate the effect of different levels of vinasse on gut development in broilers.

Material and Methods

360 day-old broiler chicks (Ross 308) were used in a completely randomized design with 6 treatments and 5 replicates. The dietary treatments included: A: control, B: 1 percent of vinasse, C: 2, 3 and 4 percent of vinasse (in starter, grower and finisher respectively), D: 3, 4 and 5 percent of vinasse, E: 4,5 and 6 percent of vinasse and F: 5,6 and 7 percent of vinasse. The intestinal morphology (villus height, crypt depth and villus height to crypt depth ratio in jejunum and ileum) and digestive organs were weighted and measured at 30 and 42 d respectively.

Result and discussion

The result shown that jejenal and ileal villus height and crypt depth significantly affected by different levels of dietary vinasse. The highest ileal villus height to crypt depth ratio was in treatment F. The highest jejenal villus height to crypt depth was in control. Broilers fed the F diet had the highest jejenal length and ileum weight ($P< 0.05$). Vinasse significantly increased liver, pancreas weight, duodenum and ileum weight and length ($P< 0.05$).Improvement in intestinal morphology of broilers by vinasse may be due to betaine (Kettunen etal.,2001)and organic acids contents in vinasse.

Keywords: Broiler, Vinasse, Gut development

References

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