

Effects of yeast culture on apparent nutrient digestibility, changes of the intestinal micro flora and growth performance in broiler chicks

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A live yeast culture supplement containing *Saccharomyces cerevisiae* live yeast cells has received increasing attention as feed additives in poultry to increase their productivity. Yeast culture may alter the intestinal microbial population by stimulating the proliferation of beneficial bacteria such as *Lactobacilli* and *Bifidobacteria*. In ruminants, it appeared to change morphological populations of ruminal bacteria and increase numbers of ruminal protozoa (1). Supplementing the diet with yeast culture to layer breeders appeared an increase in hatchability (2). Recently, Kumar and Dingle (3) have shown that although there is no statistically significant differences between treatments, yeast culture inclusion to the diets slightly increased in body weight of broiler chicks. However, information on the effect of various levels of yeast culture addition on broiler chicks is limited. Thus, this study was conducted to determine the effect of supplemental yeast culture on growth performance, apparent nutrient digestibility, nitrogen retention and changes of intestinal microflora in broiler chicks.

Four hundred and thirty-two, one day-old broiler chicks of Maniker strain (216 males and 216 females) were divided into 36 pens of 12 chicks each. Each pen was assigned to one of the 6 treatments with 6 replications (3 pens of males and 3 pens of females) according to a 2 x 3 factorial arrangement, consisting of the 0 %, 1 % and 2 % of YC. The two levels of nutrition diets were the high nutrition (3200 Kcal ME/kg, Starter 23 % CP, Finisher 20 % CP), and low nutrition (2800 Kcal ME/kg, Starter 20 % CP, Finisher 17 % CP), respectively. A metabolism trial was conducted and the intestinal flora evaluated.

Weight gain and feed conversion rate were significantly ($P < 0.01$) improved when fed the high nutrition diet than when fed the low nutrition diet. Male birds showed better growth performance than females. Although there were no statistically significant between treatments, supplementation of YC tended to increase the total number of intestinal flora, *Lactobacillus*, but decrease the number of *E. coli* and *Streptococci*. However, the addition of YC had not affected the growth performance, apparent nutrient digestibility and nitrogen retention. These results indicate that supplemental YC did not affect the growth performance in broiler chicks.

1. Putnam DE and Schwab CG. Mode of action of yeast culture. J Anim Sci 1994;72(Suppl. 2):124.
2. McDaniel GR and Sefton T. Effect of yeast culture (Yeastacc¹⁰²⁶) supplementation of broiler breeders. Poultry Science 1991;70:(Suppl. 1):172.
3. Kumar A and Dingle JG. Effect of brewer's yeast on broiler performance. In: Proceedings of the Nutrition Society of Australia 1995;19:198.