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Water intake of broiler chicken as affected by dietary microbial phytase

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Water can reasonably be regarded as an essential nutrient for poultry though the precise requirements have not been set. Apart from environmental factors, several dietary factors such as the level of dietary protein, minerals, crude fibre, physical form and the pH influence the water intake. In order to increase the availability of dietary minerals, particularly of phosphorus, and amino acids, many commercial poultry diets are now supplemented with microbial phytase. The objective of the present study was to determine the effects of dietary microbial phytase on water consumption of broiler chicken. A 2*3 completely randomised design experiment was conducted. 21-days old broiler chicks (n=120) were allocated into six deep litter pens so that between cage weight variation is minimum. Birds in three pens were fed with control diet (without phytase) while the birds in other three pens were fed with a diet containing 1000 units of phytase (Natuphos)/kg diet. Diets were formulated to meet the NRC (1994) standards. Each pen had a feeder and a drinker. Feeding and watering was done twice a day. Feed and water were provided ad lib. Birds were weighed on day 34 and found no significant weight difference between treatments. Daily feed and water intakes were measured for five days from day 35-39. In general the growth performances were inferior. This may mainly be due to high dietary rice bran (RB) level (40%) used. Phytase supplementation did not change the weight on day 40 and the feed intake during day 35 and 39. Intake of water/day/bird was not significantly different between the treatments but was numerically higher in phytase given birds. Water:feed ratio was higher (p=0.08).for the birds given phytase supplemented diets compared to control. The water:feed ratio of the control diet fed birds was within the normal water:feed ratio. Contrary, the water:feed ratio of birds given phytase supplemented diets was higher than the normal values

reported for broilers in literature. Interestingly, the intake of water per unit of live weight was also higher significantly ($p<0.01$) when diet was supplemented with microbial phytase. The reason as to why and how dietary phytase increased the water intake per unit body weight and water:feed ratio are not clear, but may be related to the increased phytate hydrolysis due to phytase.

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