



Tropentag, September 11-13, 2024, hybrid conference

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## Growth performance and economic analysis of broiler chickens fed turmeric rhizome powder (*Curcuma longa*)

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### Abstract

This study was conducted at the University of Uyo Teaching and Research Farm to evaluate the impact of turmeric rhizome powder (TRP) as a growth promoter on growth performance of broiler chickens and cost efficiency of broiler production. A total of 120 Ross 308 strains of broiler chickens were divided into four treatment groups, which were further replicated three times with 10 birds each per replicate in a Completely Randomised Experimental Design. The experimental groups were made up of the birds on the control diet (T1), and three experimental groups that were fed diets with TRP supplementation at 200 g (T2), 400 g (T3), and 600 g (T4) per 100 kg of feed. The experiment lasted 8 weeks, during which data on weight gain, feed efficiency and cost efficiency were collected. Analysis of Variance (ANOVA) was adopted to detect significant differences between the treatment means while post hoc analysis using Duncan Multiple Range Test further differentiated the means. The results revealed that the birds on T3 diets (400 g TRP) exhibited the highest weight gain (1508.33g), demonstrating the potential of TRP supplementation at that level of supplementatoion to enhance broiler growth performance. Furthermore, the cost analysis reveals that the cost per kilogram weight gain was least in the treatment fed 400 g of TRP (N959.00). Equally, the revenue and the gross margin was also highest in the treatment fed 400 g of TRP (N1885.00, N439.00). In contrast, exceeding this level of 400 g supplementation, as observed in the T4 group (600 g TRP), led to an increase in production costs without any proportional improvement in weight gain.

**Keywords:** Additive, broiler, cost, growth promoter, profitability, turmeric