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“Filling gaps and removing traps
for sustainable resource management”

Sodium Diformate and Alkaloids in the Starter Diet of Young Broilers Improve their Performance against Negative and Positive Controls

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Abstract

Nutrition plays a crucial role in broiler production, particularly during the post-hatch period, since healthy gut development affects later performance. However, although poultry production often suffers from losses due to contamination with pathogenic bacteria, overuse of antibiotics, the development of resistant bacteria and their ill effects on the human population, have led to the prophylactic use of antibiotics being banned in animal farming in many countries. Although this ban is well deserved, the bacterial challenges experienced in the poultry industry mean that, it is still imperative to have some kind of tool to control bacterial infections and improve the performance of the farmed animal. Organic acids and plant extracts have proved especially effective in maintaining growth performance. Previous studies on the antimicrobial impact of these additives have placed less emphasis on the starter period. The objective of this experiment was therefore to evaluate the impact of dietary sodium diformate and alkaloids (traded as Formi[®] Alpha, ADDCON; hereafter referred to as NDF-A) in broiler starter diets until day 21, against both a negative and a positive control containing an antibiotic growth promoter (AGP; trimethoprim/sulfadiazine). 180 one-day old male broilers (Ross 308) were randomly allocated to one of three treatment diets with six replicates of 10 birds each in floor pens on a research farm in Iran. Experimental treatments were: negative control (NC); AGP; and 2 kg tonne⁻¹ NDF-A. Broiler starter diets were provided as mash feed *ad libitum*. Body weight, feed intake and FCR were recorded after 21 days. Data were analysed and a confidence level of 95 % was defined. Growth performance results revealed a positive impact of the diformate-alkaloid additive. Dietary NDF-A improved body weight gain compared to both the NC and AGP diets (8.9 % and 2.6 %, respectively; $p < 0.01$). Feed intake of NDF-A differed only numerically (+6.1 % and +2.4 % against NC and AGP, respectively). FCR improved only numerically by NDF-A inclusion and varied between control (1.74) AGP (1.70) and NDF-A (1.69). Formi[®] Alpha improves growth performance in broilers during the crucial period of early growth, not only compared to a negative control but also compared to an AGP.

Keywords: Broiler performance, feed intake, poultry