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THE EFFECT OF FOUR BETAINE PRODUCTS ON REPLACING METHIONINE AND CHOLINE SUPPLEMENTATION ON GROWTH PERFORMANCE IN BROILER CHICKENS FROM 10 TO 28 DAYS OF AGE

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INTRODUCTION AND OBJECTIVES

Betaine (BET) acts as a methyl donor to convert homocysteine into methionine (MET), sparing both choline (CHOL) and MET. In the last years, synthetic MET and CHOL became a key concern in feed formulation as their prices have increased and hence BET can be an economic alternative. Objective: to test the bio-equivalency of 4 commercial BET products (3 anhydrous and one hydrochloride) in broiler grower diets low in MET and CHOL.

MATERIALS AND METHODS

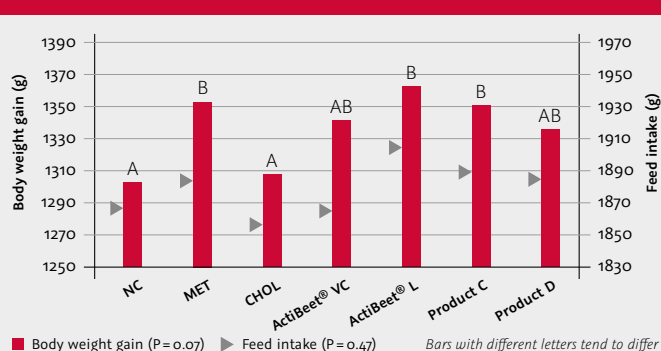
- 840 day old males and females Ross 308 broilers were housed separately in 42 pens (2.2 m²).
- Experimental diets were fed to broilers from 10–28 days of age.
- 7 dietary treatments with 6 replicates (20 birds / pen) as follows:
 - T1)** Low CHOL, no added MET and a ratio d.M+C/d.Lys of -10% of standard (0.63).
d. Lys = 10.5 g/kg feed.
 - T2)** T1 + 0.7 g/kg MET from DL-MET with d.M+C/d.Lys ratio at standard (0.70),
 - T3)** T1 + 0.7 g/kg CHOL from choline chloride,
 - T4)** T1 + 0.7 g/kg BET as ActiBeet[®] VC,
 - T5)** T1 + 0.7 g/kg BET as ActiBeet[®] L,
 - T6)** T1 + 0.7 g/kg BET as Product C,
 - T7)** T1 + 0.7 g/kg BET as Product D.
- Response parameters:
 - Body weight gain,
 - Feed intake,
 - Feed conversion ratio.
- Data analysed with ANOVA (Genstat).

RESULTS

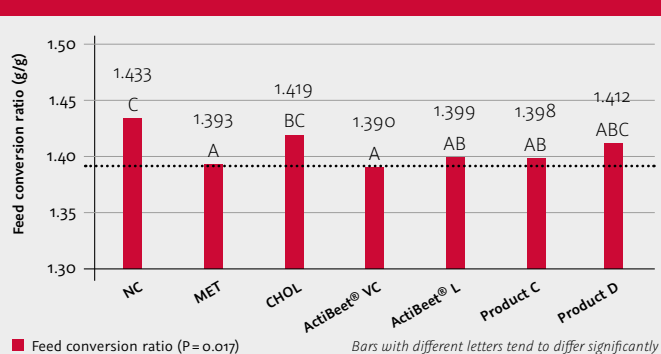
No interaction “Treatment x Sex” was observed in any trait (P > 0.10).

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Results for body weight gain and feed intake from day 10–28.



Results for feed conversion ratio from day 10–28.



CONCLUSION

Addition of 0.7 g/kg BET (on equimolar basis) from ActiBeet[®] VC, ActiBeet[®] L and Product C were able to fully replace the equal amount of added MET and CHOL in broiler grower diets when d. M+C/d.Lys ratio decreased from 70 to 63%.

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