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## Energy Metabolisability and Ileal Digesta Viscosity of Broilers Fed Diets Containing Fungi Biodegraded and Enzyme Supplemented Malted Sorghum Sprouts

ADEKOYA OSOFOWORA<sup>1</sup>, OLUSEYI ODUGUWA<sup>1</sup>, FLORENCE OKE<sup>2</sup>, VINCENT JEGEDE<sup>1</sup>, S.O. KAREEM<sup>3</sup>, ADEBOYE FAFIOLU<sup>1</sup>, VASIL PIRGOZLIEV<sup>4</sup>, KARL-HEINZ SÜDEKUM<sup>5</sup>

<sup>1</sup>Federal University of Agriculture, Abeokuta, Dept. of Animal Nutrition, Nigeria

<sup>2</sup>Federal University, Jigawa, Dept. of Animal Sciences, Nigeria

<sup>3</sup>Federal University of Agriculture, Abeokuta, Dept. of Microbiology, Nigeria

<sup>4</sup>Haper Adams University, The National Institute of Poultry Husbandry, United Kingdom

<sup>5</sup>University of Bonn, Inst. of Animal Science, Germany

### Abstract

Two hundred (200) day-old broiler chickens (Marshall strain) were allotted (40 per treatment, four replicates of ten birds each) to five diets – diet 1 (Control), diet 2 [malted sorghum sprouts (MSP) + *Aspergillus niger* (An)], diet 3 [MSP + *Trichoderma viride* (Tv)], diet 4 MSP + (An + Tv) and diet 5 (MSP + commercial enzyme containing amylase (EC 3.2.1.1), beta- glucanase (EC 3.2.1.6), cellulase (EC 3.2.1.4), pectinase (EC 3.2.1.15), protease (EC 3.4.21) and xylanase (EC 3.2.1.8) added at the rate of 20 g /100 kg diet). At day 28 and 58, apparent metabolisable energy (AME), AME corrected for nitrogen retention (AMEn), true metabolisable energy (TME), TME corrected for nitrogen retention (TMEn) were determined. At day 58, ileal digesta viscosity (four birds per replicate, 40 birds in all) were also determined using Brookfield DV-E viscometer. Data were analysed using ANOVA. Significant means were separated using Duncans multiple range test. Highest ( $p < 0.05$ ) values of AME and AMEn were obtained for diet 4 and diet 3 respectively. TME was highest ( $p < 0.05$ ) in birds fed diet 4 at the starter phase but the highest value for this measurement at the finisher phase was for diet 3. TMEn was not significantly different ( $p > 0.05$ ) at the finisher phase. Ileal digesta viscosity did not follow a particular pattern at 60 rpm and 100 rpm but for 50 rpm, highest value was obtained for birds fed diet 4 ( $p < 0.05$ ), while diets that contained MSP + commercial enzyme (diet 5) elicited the greatest reduction in ileal digesta viscosity.

It is therefore recommended that when birds are of tender age (0-4 weeks) inclusion of MSP degraded with combinations of An + Tv (diet 4) will produce the best result, while at finisher phase (5-8weeks) degradation of MSP with only Tv in their diets (diet 3) will be sufficient for optimum performance.

**Keywords:** *Aspergillus niger*, broilers, energy metabolisability, Ileal digesta viscosity, malted sorghum sprouts, *Trichoderma viride*