

Metabolizable energy of alternative feedstuffs for broilers

Maria C. M. M. Ludke*¹, Jorge V. Ludke², Juliana C. N. S. Silva¹, Julia S. Barros¹, Anderson C. F. Costa¹, Priscila S. Pereira¹, Bárbara S. Almeida¹

¹Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brasil;

²Embrapa Suínos e Aves, Concórdia, Santa Catarina, Brasil;

*¹mohauptmariadocarmo@gmail.com

Some states of the Brazilian northeast region has continuous deficit of ingredients for feeding broilers. Four potential and, locally available, minor alternative feedstuffs for broilers were evaluated. Two products that were no more fit for human consumption and delivered from reverse logistic at retailer level were researched: 1) mix of noodles and spaghetti (MNS) and 2) mix of cookie and cracker (MCC). The third alternative was sun dehydrated mango residue (DMR) composed by whole kernel, fibers and skin, a by-product generated at levels up to 500 g kg⁻¹ (as is) by the juice industry. And the fourth alternative was autoclaved castor meal (ACM) where castor meal was mixed with CaO at 60 g kg⁻¹, evenly hydrated (50:50 by weight), autoclaved during 90 minutes at 1.23 kgf cm⁻² and 104°C and sun dried. Four metabolism trials were run and the methodology applied was standardized. In each trial 84 broilers, Ross 500, male, uniform by weight and one day old, were lodged in metabolism crates and raised under ad libitum feed and water consumption. At ten days a new selection for uniformity was done and thereon five uniform broilers were maintained per replicate. Two treatments each with six replications containing five broilers per crate were established in completely randomized design. Treatments were a reference diet (RD) corn and soybean meal based and one test diet (TD) containing 300 g kg⁻¹ of test feedstuff plus 700 g kg⁻¹ of RD, except for ACM where proportions of ACM to RD were 200:800. Experimental diets were provided during eight days from 14 to 22 days. Total excreta collection method was adopted with use of iron oxide (10 g kg⁻¹) as marker of diets and droppings with red color in aim to establish beginning and end of excreta collection which lasted four days. Laboratory analyses for DM, CP, EE, CF and GE of feedstuffs under evaluation, diets and excreta were performed. The Apparent Metabolizable Energy (AME) and AME corrected for nitrogen retention (AMEn) were calculated. Results of analysis (as is, g kg⁻¹) were, respectively, for MNS, MCC, DMR and ACM: DM (888.7, 921.1, 853, 903), CP (115.5, 89, 72, 258), EE (9.2, 132.9, 33, 96.8), CF (13, 72.3, 232, 302.6). GE (as is, kcal kg⁻¹) values were for MNS (3,882), MCC (4,333), DMR (3,641) and ACM (4299). AME and AMEn values (as is, kcal kg⁻¹) were, respectively, 3812 ± 29 and 3616 ± 35 for MNS, 3959 ± 46 and 3480 ± 40 for MCC, 2444 ± 40 and 2234 ± 43 for DMR and 2377 ± 21 and 2110 ± 20 for ACM.

Keywords: autoclaved castor meal, cookie and cracker, dehydrated mango residue, noodles and spaghetti, poultry

Acknowledgments: To CAPES and CNPq