

557 **Metabolizable energy of castor bean meal through broiler metabolism trial.** J. C. N. Santana¹, M. C. M. M. Ludke*¹, J. V. Ludke², A. S. Silva¹, C. B. V. Rabello¹, and G. R. Bertani³, ¹*Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brasil*, ²*Embrapa Suínos e Aves, Concórdia, Santa Catarina, Brasil*, ³*Universidade Federal de Pernambuco, Recife, Pernambuco, Brasil*.

Castor bean meal (CB) submitted to different processing methods resulted in 5 different CB types and were evaluated for metabolizable energy values using 210 broilers in a standard metabolism trial with 7 treatments (n = 5/treatment with 6 broilers per replicate). The trial lasted 10 d. The 5 CB types were: CBA obtained by mechanical oil extracting process and the other CB were generated from the same industrial process and additionally submitted to an ethanol bath followed by an alcohol recuperation either with 80°C during 20 min (CBB) and 6 min (CBD and CBE) or with 110°C during 15 min (CBF). Additionally CBD and CBE were neutralized with NaOH at 5% and submitted either for solar drying during 2 d (CBD) or submitted to pelletization (CBE). Metabolism trial were established using 20% substitution of a reference diet (a standard corn soybean meal diet). The 5 CB types (CBA, CBB, CBD, CBE and CBF), soybean meal and the reference diet were evaluated. Apparent metabolizable energy (AME, Kcal/kg as is) and AME corrected to nitrogen retention (AMEn, Kcal/kg as is) mean \pm standard deviation values were, respectively, for soybean meal (2,555 \pm 78 and 2,408 \pm 82), CBB (2,787 \pm 169 and 2,781 \pm 181), CBD (2,603 \pm 32 and 2,709 \pm 42), CBE (2,759 \pm 80 and 2,709 \pm 79) and CBF (2,849 \pm 64 and 2,739 \pm 71). CBA were toxic (lethal to 26.6% of broilers, no weight gain of survivors) and gave negative EMA and EMAn values. All other CB had higher EMAn values than soybean meal ($P \leq 0.05$) and were not different ($P \geq 0.05$) between each other. The nutritional characteristics of CB (respectively CBA, CBB, CBD, CBF and CBE) were: for crude protein (Nx6.25, % as is) 32.7; 28.2; 29.9; 31.0 and 29.8; for ether extract (% as is) 11.9; 10.9; 8.4; 9.2 and 9.1; for crude fiber (% as is) 24.2; 26.9; 29.7; 28.4 and 27.7; for acid detergent fiber (% as is) 30.4; 33.5; 31.0; 31.0 and 36.3; for Gross Energy (Kcal/kg as is) 4,884; 4,757; 4,680; 4,734 and 4,700. Considering the simplicity of industrial processing and metabolism trial results of CBF may need to undertake more research.

Key Words: alternative feedstuff, industrial by-product, alternative protein source, poultry nutrition