388P Effect of soybean meals of different origins on apparent ileal digestibility of amino acids in 22-day-old broilers. Lourdes Cámara, Mohammad V. Kimiaeitalab, Pilar Guzmán, Beatrix Saldaña, Husham A. Mandalawi, and Gonzalo G. Mateos*, *Departamento de Producción Agraria, Universidad Politécnica de Madrid, Madrid, Spain.*

We studied the effect of soybean meals (SBM) from USA, Brazil (BRA), and Argentina (ARG) on the apparent ileal digestibility (AID) of the amino acids (AA). In total, 500 one-day-old, straight run Ross 308 broilers were used. Nine SBM samples from 3 different origins, USA (n = 3), Brazil (BRA; n = 3), and Argentina (ARG; n = 3) were used in the study. The samples used were collected by trained personnel at the discharge of the cargos from the different countries. Each treatment was replicated 10 times and the experimental unit was a cage with 5 broilers. Birds were fed a commercial corn-soybean meal diet from 1 to 18 d of age in pellet form and then, their corresponding experimental diets in mash form. These diets that resulted from the combination of 42.6% SBM and 57.4% of a nitrogen free diet to 22 d of age. The nitrogen free diet was based on corn starch, dextrose, soybean oil, minerals, and solka-floc, and did not contain any protein source. Data were analyzed as a nested design using the MIXED procedure of SAS. The main effect of the model was the country of origin of the SBM and the nested effects were the SBM samples within origin and the cage within the SBM. When the model was significant, the Tukey test was used to make pairwise comparisons between treatment means. Although all SBM, regardless of origin, were similar to each other, in general, the AID of DM, CP, and of most AA (Lys, Met, and Thr) was higher for the USA meals than for the South American meals, although the differences were not significant.

Key Words: amino acid, apparent ileal digestibility, broiler, soybean meal origin

389P Effect of dietary inclusion of treated rice straw on growth performance and heat increment of broiler chicks. Medhat Adly Michael*, *Ministry of Agriculture, Cairo, Egypt.*

This study was conducted to evaluate the performance, nutrient digestibility, and heat increment of broilers fed diets supplemented with rice straw treated by effective microorganisms (EM) after thermo-mechanical grinding for improving the nutritive value. The chemical composition of treated rice straw (TRS), based on dry matter was as follows: ME, 1,750 kcal/kg; CP, 11%; NDF, 49.3%; ADF, 10.2%; hemicellulose, 38.8%. The experimental diets were iso-energetic containing TRS at different upgraded levels 0 (control); 5; 10; 15; 20 or 25%. A total of one hundred eight day-old Cobb 500 broiler chicks were evaluated in this study, distributed in a completely randomized design with 6 treatments and 3 replicates, 10 chicks each. Data were analyzed as a one-way ANOVA, and significant means were separated using Duncan's multiple range test ($P \leq 0.05$). Weight gain (WG), feed intake (FI), feed conversion rate (FCR), nutrient digestibility were recorded up to 7 wk of age, while heat increment was measured from d 21 to 49 in broilers kept in thermoneutral (23 ± 1°C) controlled temperature chambers. No significant differences were found in WG among broilers fed the control diets and those fed diets containing 5 or 10% TRS. Feeding broilers on diets containing 5% TRS was significantly ($P < 0.05$) improved in FCR compared with those fed with 15 or 20% TRS and insignificant improvement with those fed the control diet or diets containing 10% TRS. Total digestibilities nutrients of broilers fed the control diets were significantly ($P < 0.05$) improved than those fed with 15, 20, or 25% TRS, and insignificant with the broilers fed diets containing 5% or 10% TRS. Heat increment was significant ($P < 0.05$) reduce in broilers fed diets containing 5, 10 or 15% compared with those fed with 20 or 25% TRS. In conclusion, treated rice straw is a potential substitute for common ingredients used as energy and protein sources in broiler diets with reducing the feed cost while maintaining performance.

Key Words: treated rice straw, heat increment, digestibility, broiler performance.

390P Performance, carcass yield and excretion of broilers fed diets supplemented with different calcium and fat sources. Medhat Adly Michael*, *Ministry of Agriculture, Cairo, Egypt.*

The experiment was conducted to investigate the effect of interaction between different calcium and fat sources in broiler diets and its effects on improving the performance, intestinal digestion, total-tract retention of calcium and excreted fat as soap formation in broiler chicks. A total of 240 Hubbard broiler chicks (1-d-old) were allotted randomized into 8 treatments in a 2 × 3 + 2 factorial design with 3 replicates and 10 chicks each. The experimental diets containing 2 calcium sources, calcium lactate (CL) or calcium carbonate (CC), at NRC calcium requirement in the presence of 3 fat sources, soybean oil (SBO), sunflower oil (SFO), or palm oil (PO), were included in the diets at level 5%, and 2 control diets, negative control (NC) containing CC or positive control (PC), containing CL. Data were analyzed by 2-way ANOVA and the means were compared using Tukey test at 5% probability. Weight gain (WG), feed intake (FI), feed conversion rate (FCR), nutrient digestibility and excreta soap formation were recorded up to 6 wk of age. The WG of broilers fed diets containing CL plus SBO fortified diet were insignificantly higher than those fed with CL plus SFO. A significant ($P < 0.05$) improvement in FCR was observed with broiler fed diets containing of CL plus SBO. Treatments with CC plus PO showed worst values of FCR. Feeding broilers on diets contained CL plus SBO improved ($P < 0.05$) significantly the digestibility of total nutrients than those fed the NC or PC. Excreted fat as soap formation and abdominal fat were improved with broilers fed diets contained CL than those fed with CC plus experimental fat sources. The nitrogen and calcium retained, as percentage of intake, were improved ($P < 0.05$) with broilers fed the PC or diets contained CL plus either SBO, SFO or PO than those fed the other experimental diets. In conclusion, dietary inclusion calcium lactate improved the calcium retention, bone calcium and depress excreted fat as soap formation with improving the broilers' performance.

Key Words: calcium lactate, soybean oil, soap formation, broiler performance.

391P Nutritional density of diets effect on performance of W-36 pullets from 1 to 6 weeks of age. Fernando Guilherme PerazzoCosta*[1], Lavosier E. Cavalcante[1], Sarah Gomes Pinheiro[1], Fernanda A. S. Parizio[1], Danilo T. Cavalcante[1], Leonilson Silva Dantas[1], José G. V. Junior[1], G. F. L. Cruz[1], Eduardo Terra Nogueira[2], Gabriel B. S. Pessoa[2], Vitor Arantes[3], and Matheus Ramalho de Lima[4], *[1]Federal University of Paraiba, Areia, Paraiba, Brazil, [2]Ajinomoto do Brazil, Sao Paulo, Brazil, [3]Hy Line, Sao Paulo, Brazil, [4]Federal University of South of Bahia, Teixeira de Freitas, Bahia, Brazil.*

The aim was to evaluate the effect of varying the nutritional density, ME, CP, amino acids and minerals on the pullets W-36 on performance from 1 to 6 weeks of age. The treatments consisted of diets varying in nutrient density, with increases and decreases of 5 and 10% considering a basal diet (100%), totaling 5 treatments with 7 replicates with 13 pullets each. It assessed the body weight (BW, g/pullet), body weight