

undegraded plantain peels could be used as a replacement for wheat offal weight for weight in broiler production without adversely affecting performance characteristics, morphology, blood parameters, and carcass analysis.

Key Words: plantain peels, broilers, performance characteristics

1019 Effect of lysophospholipids supplementation in different energy diets on growth performance, nutrient digestibility, milk composition, litter performance, and fecal score in lactating sows.

P. Y. Zhao*, S. O. Jung, I. C. Hwang, B. R. Kim, J. W. Shin, M. K. Shim, D. K. Kang, J. Y. Kim, H. B. Kim, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, South Korea.*

Emulsifiers are substances that stabilize mixtures and prevent oil and water from separating, which is good for the digestion of lipids. This study was conducted to evaluate the effect of dietary emulsifier (lysophospholipids, LPL) supplementation with different energy diets in lactating sows. A total of 32 multiparous sows (Landrace × Yorkshire) were used in a 21-d experiment. On d 110 of gestation, sows were weighed and moved into the farrowing facility, randomly assigned in a 2 × 2 factorial arrangement with two levels of Lipidol (0 and 0.1%; Lipidol contains 3% LPL) and two level of metabolizable energy (3265 and 3165 kcal/kg) according to their BW. Individual sows were weighed and scanned for backfat thickness to determine weight and backfat loss. Chromium oxide (0.2%) was added to the diet as an indigestible marker to determine ATTD of DM, N, and GE. Milk crude fat (Method 960.39; AOAC, 2007) was measured according to the Association of Official Analytical Chemists. Lactose was assayed using an enzymatic method. Data were analyzed as a randomized complete block design with a 2 × 2 factorial arrangement using the GLM Procedure of SAS (SAS Inst. Inc., Cary, NC). A probability level of $P < 0.05$ was considered to be significant. Body weight loss (18.6 vs. 15.1 kg) and backfat thickness loss (2.4 vs. 1.9 mm) were decreased ($P < 0.05$) by LPL supplementation. Backfat thickness (17.0 vs. 14.5 mm) at weaning was higher ($P < 0.05$) in sows fed LPL supplementation diets. The ATTD of DM (84.4 vs. 83.2%), N (83.6 vs. 82.5%), GE (82.9 vs. 82.1%), and crude fat (80.1 vs. 79.2%) in sows fed LPL diets was increased ($P < 0.05$) compared with those fed non-LPL diets. Sows fed the high energy diets had higher ($P < 0.05$) milk fat (11.3 vs. 10.0%) on d 10 and milk lactose (4.6 vs. 3.9%) on d 20 than those fed the low energy

backfat thickness loss and improved nutrient digestibility and milk fat as well as milk lactose concentrations. Additionally, LPL and energy can interactively increase milk fat concentration in lactating sows.

Key Words: growth performance, lysophospholipids, sow

1020 Effect of crystalline silicon dioxide in piglet feed on growth performance with different levels of growth promoters. Y. Martel-Kennes^{*1}, J. Lévesque¹, and C. Decaux², ¹Centre de Recherche en Sciences Animales de Deschambault, Deschambault, QC, Canada, ²Ceresco Nutrition, Saint-Urbain-Premier, QC, Canada.

Silicon dioxide is a common mineral that can be found under different forms (crystalline or amorphous) and is also found in many clays and diatomaceous earth. The purpose of this trial was to assess, in a factorial 2×2 arrangement, the growth performance of piglets reared with a feeding program including, or not, a crystalline silica-based feed supplement (SI) with or without antibiotics as growth promoters (AGP; chlortetracycline and high levels of Cu and Zn in Phase 1 and chlortetracycline in Phase 2). All diets were formulated to be iso-caloric and iso-nitrogenous. An ANOVA was performed on zootechnical parameters with the pen as the experimental unit for all analyses. Effects of AGP, SI, block (based on sex and body weight), and interaction between AGP and SI were included in the statistical model. A total of 252 piglets with body weights of 7 kg were reared until 24 kg of body weight and allocated into 36 pens. According to these results, groups fed with AGP showed improved weight gain, feed intake, and feed conversion during Phase 1, while no significant effect was observed during Phase 2. Concerning the effect of SI, feed intake was improved by 4.13% during the overall nursery period, compared to groups without SI (729 versus 700 g/day; $P < 0.05$). In addition, groups fed SI showed an average daily gain of 3.26% higher than animals without SI during the same period (607 versus 588 g/day; $P < 0.05$). This effect leads to an improvement of 2.2% in piglet's weight at the end of the post-weaning phase (24.52 versus 23.99 kg; $P < 0.05$). It was concluded that under our trial conditions, adding crystalline silicon dioxide to piglet feed (0.02%) increase feed intake, growth rate, and piglet weight at the end of the nursery period. This mineral additive could offer potential economic benefits to swine producers.

Key Words: silicon, silica, piglet