



WPC2016

THE XXV WORLD'S POULTRY CONGRESS

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The Proceedings of XXV World's Poultry Congress 2016 — Abstracts



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nal bacterial count and morphology and immune response of broilers, in comparison with antibiotic growth promoter	206
<i>Milad Manafi, Ali Esapour, Saeed Khalaji, Mahdi Hedayati</i>	206
S1-0471 Effect of dietary trace mineral concentration and source (inorganic vs. organic) on production performance, eggshell quality and hatching performance in broiler breeders	206
<i>Zhang Bo, Sun Defa, Lv Qifeng</i>	206
S1-0472 Hematology and serum lipid profile of local toms fed four strains of <i>Lactobacillus</i> spp based probiotics	206
<i>Emmanuel Dim, Anselm Onyimonyi</i>	207
S1-0473 Effects of coated benzoic acid and xylanase on growth performance, nutrients retention and plasma biochemical parameters of broilers fed wheat containing diets	207
<i>Zhang Bo, Sun Defa, Song Zhigang</i>	207
S1-0474 Effects of <i>Eimeria</i> coccidial vaccination and dietary antibiotic alternative additives on the growth and carcass traits of male broilers	208
<i>Xi Wang, E. David Peebles, Aaron S. Kiess, Kelley G. S. Wamsley, Wei Zhai</i>	208
S1-0475 Effect of protected sodium butyrate and nutrients' concentration on broilers gut health	208
<i>Mónica Puyalto, Pilar Honrubia, Cinta Sol, María Jesús Villamide, Juan José Mallo</i>	208
S1-0476 Effect of product bioprocess shrimp waste as nutrient concentrate in the ration on characteristic carcass native chicken starter period	209
<i>Tuti Widjastuti, Abun Abun, Lovita Adriani, Kiki Haetani</i>	209
S1-0477 Selenium supplementation improves broiler growth under tropical conditions	209
<i>Mickael Briens, Sachin Ingewar, Kevin Liu, Fugui Yin, Yves Mercier</i>	209
S1-0478 Vitamin E and selenium source or level effect on broiler breeders antioxidant status and performances	209
<i>Mickael Briens, Rama Rao Savaram Venkata, Sachin Ingewar, Kevin Liu, Fugui Yin, Yves Mercier</i>	210
S1-0479 Selsaf, a source of selenium improving zootechnical performance	210
<i>Dana Kumprechtova, Ruth Raspoet, Miroslava Fasiangova, Gabriela Borilova, Josef Illek, Hana Kozeluhova, Eric Auclair</i>	210
S1-0481 Content and bioavailability of carotenoids in corn distillers solubles oil for skin pigmentation and plasma concentration in broilers	211
<i>Marta Viguer, Kimberly Livingston, Ramon Malheiros, Peter Ferkey</i>	211
S1-0482 Effects of quercetin on blood antioxidant parameters and liver protection of broiler chicks induced oxidative stress by tert-BHP	211
<i>Morvarid Rezvani, Mohammad Chamani, Parvin Shawrang, Ali Asghar Sadeghi, Amir Barmazayr</i>	211
S1-0483 Evaluation of the efficacy of xylanase and arabinofuranosidase enrichment of a multi-enzyme complex on metabolisable energy value of corn-soybean meal- and wheat-soybean meal-based diets	212
<i>Pierre Cozannet, Maxime Trainau, Estelle Devillard, Roberto Montanhini Neto, Alex Wu, Fugui Yin, Aurélie Preynat</i>	212
S1-0484 Replacement value of maize with different levels of sundried cocoyam (<i>Xanthosoma Sagitifolium</i>) as energy source on the performance of broiler finisher	212
<i>Dozie Onunkwo, Chima Anyaegbu</i>	212
S1-0485 Application of chicken egg yolk immunoglobulins in land and aquatic animal diseases control	213
<i>Xiaoyu Li, Lili Wang, Yuhong Zhen, Yanan Lu, Kailin Jing, Le Xu, Yongping Xu</i>	213
S1-0486 Passive immunization of turbot (<i>Scophthalmus maximus</i>) with chicken egg yolk immunoglobulins (IgY) against <i>Edwardsiella tarda</i> infection	213
<i>Yuan Li, Cangcang Jia, Yongping Xu, Kailing Jing, Meixia Zhang, Xiaoyu Li</i>	213
S1-0487 Effects of dietary methionine on performance, egg quality and glutathione redox system in egg-laying ducks	214
<i>Ahmed Mohamed Fouad</i>	214
S1-0488 Utilization of DL-methionine hydroxy analogue calcium salt, DL-methionine and L-methionine in grower broilers	214
<i>Jialong Peng, Shiping Bai, Jianping Wang, Xuemei Ding, Qifeng Zeng, Jun Gao, Keying Zhang</i>	214
S1-0489 Cytokine gene expression in chicken related to barrier functions of the intestinal mucosa following with microencapsulated <i>E. faecalis</i> and the extract of <i>Camellia oleifera</i> seed	215
<i>Wang Y.W, Dong Z.L, Song D, Hou Y.J, Wang W.W, Li A.K</i>	215
S1-0490 Recent advances in sunflower seed meal as an alternate source of protein in broilers: An overview	215
<i>Yasir Allah Ditta, Annie King</i>	215
S1-0491 The nutritional evaluation and utilization of hatchery waste egg meal for laying hen	216
<i>Wen-Zan Chiu, Yu-Hsuan Ting, Hen-Wei Wei</i>	216
S1-0492 Partial or total replacement of soybean oil by black soldier pupae fat in broiler diets. Part 1: Effect on growth and slaughtering performances	216
<i>Michele De Marco, Sihem Dabbou, Luca Rotolo, Attawit Kovitvadhi, Manuela Renna, Francesco Gai, Marco Cullere, Antonella Dalle Zotte, Laura Gasco, Achille Schiavone</i>	216
S1-0493 Effects of supplementing broiler diets low in crude protein with lysine	217
<i>N.G.A Mulyantini</i>	217
S1-0494 Eggs may reduce vitamin D deficiencies in the human population	217
<i>Linda Browning</i>	217

S1-0474 Effects of Eimeria coccidial vaccination and dietary antibiotic alternative additives on the growth and carcass traits of male broilers

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The effects of commercial live Eimeria coccidial vaccination and dietary antibiotic alternatives on the growth and meat yield of commercial broilers were evaluated. A total of 1,120 Ross × Ross 708 male broilers were randomly allocated 80 floor pens (10 treatments, 8 replication pens/treatment, and 14 chicks/pen). A 2 × 5 factorial arrangement of treatments was used to determine the main and interactive effects of coccidial vaccination (with or without vaccination at hatch) and dietary additives [1. corn and soybean-meal basal diet, 2. basal diet + commercial antibiotics (bacitracin and salinomycin), 3. basal diet + probiotics (*Bacillus subtilis*), 4. basal diet + prebiotics (mannan- oligosaccharides and β-glucans), and 5. basal diet + probiotics + prebiotics]. On Day 15, all chicks were gavage with a 20 dose of coccidial vaccine (live *Eimeria* oocysts) to simulate the coccidiosis challenge on commercial broiler production. Coccidial vaccination at hatch decreased Day 0-14 and Day 29-42 body weight gain (BWG) but did not affect Day 0-56 BWG. As compared to all other dietary treatments, antibiotic treatment decreased Day 0-14 and Day 15-28 feed conversion ratio, and increased feed intake and BWG from Day 15 to 28. However, no dietary effects was found on overall mortality or on growth performance from Day 29 to 56. In addition, there was no interaction between the vaccination and dietary additive treatments for growth performance or for any carcass parts, with the exception of breast yield. When compared to the individual antibiotic, prebiotic, and probiotic treatments, combination of probiotics and prebiotics increased the breast weights of the non-vaccinated broilers on Day 56. Coccidial vaccination at hatch did not alter the effects of the probiotic and prebiotic on overall growth. Additionally, antibiotics may promote the growth of broiler chicks at an early age, while the combined use of probiotics and prebiotics may facilitate their growth at a latter age.

Keywords: broiler, coccidial vaccination, prebiotics, probiotics, growth

S1-0475 Effect of protected sodium butyrate and nutrients' concentration on broilers gut health

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This trial was conducted to compare the effect on gut health, of sodium butyrate protected with sodium salt of palm fatty acids distillates, in diets for broiler chickens with different nutrient concentration. A 2 × 2 factorial design was performed with two basal diets based on maize and soybean meal: S (standard nutrient diet) and L (low nutrient diet) with a reduction of 60 Kcal/Kg of ME and 2.3% lower concentration of aminoacids; with (Y, additive addition) or without (N, no additive addition) protected sodium butyrate at 1 kg/t. A total of 160 one day old broilers were randomly distributed to 4 treatments with 4 pens of 10 birds. At 21d, 1 chick per pen was killed and GIT were removed for the analysis of gut microflora (*Lactobacillus*, *E. Coli* and *Coliforms*) and development status of ileum and caecum epithelium. Data were analyzed with two-way ANOVA using the GLM procedure of SAS. *Lactobacillus* tended to be higher in SN group ($P<0.10$) in ileum respect to the other treatments. No more differences were observed in *Coliforms* nor in *E.Coli* in ileum. The addition of additive showed a significant decrease in *Coliforms* (5.24×10^8 vs 1.44×10^8 CFU/g) and *E.Coli* (4.30×10^8 vs 9.57×10^7 CFU/g) in caecum. The addition of additive tended to increase villus height in a 9%, crypt depth in an 8% and increased mucosal thickness (669.5 vs 619.0 µm; $P<0.05$). The reduction in nutrients' concentration increased villus height (518.2 vs 470.1 µm; $P<0.05$), tended to reduce crypt depth (-6%) and increase mucosal thickness (6%). There was an increase in V:C ratio due to the reduction in nutrients' concentration (3.57 vs 3.05 ; $P<0.05$). It can be concluded that the addition of protected sodium butyrate in diets for broilers at early stages induce a favorable effect on gut health, taking into account the reduction on bacterial populations in caecum and the improvement in intestinal epithelium. It might influence later stages improving the intestinal function and performance parameters.

Keywords: protected sodium butyrate, energy, aminoacids, gut health