

CONTENTS

Research Reports

- Effects of using plant extracts and a probiotic on performance, intestinal morphology, and microflora population in broilers**
 M. Shams Shargh, B. Dastar, S. Zerehdaran, M. Khomeiri, and A. Moradi 201
- The effect of different levels of organic and inorganic chromium supplementation on immune function of broiler chicken under heat-stress conditions**
 A. Bahrami, M. M. Moeini, S. H. Ghazi, and M. R. Targhibi 209
- A multienzyme preparation enhances the utilization of nutrients and energy from pure corn and wheat diets in broilers**
 G. G. Zhang, Z. B. Yang, Q. Q. Zhang, W. R. Yang, and S. Z. Jiang 216
- Evaluation of nonstarch polysaccharide-degrading enzymes in broiler diets varying in nutrient and energy levels as measured by broiler performance and processing parameters**
 J. R. Coppedge, L. A. Oden, B. Ratliff, B. Brown, F. Ruch, and J. T. Lee 226
- Assessment of the threonine-to-lysine ratio of male broilers from 35 to 49 days of age**
 L. Mejia, P. B. Tillman, C. D. Zumwalt, and A. Corzo 235
- Effects of *Astragalus membranaceus* on laying performance and antioxidant status of laying hens**
 Z. Y. Zuo, W. R. Yang, Y. Wang, Z. B. Yang, S. Z. Jiang, and G. G. Zhang 243
- Effect of purified zearalenone on nutrient digestibility in broilers fed 2 levels of fumonisin from naturally contaminated corn (*Zea mays*)**
 Y. Zou, Z. B. Yang, W. R. Yang, S. Z. Jiang, G. G. Zhang, and F. Chi 251
- Effect of different vitamin E sources and levels on selected oxidative status indices in blood and tissues as well as on rearing performance of slaughter turkey hens**
 K. Ognik and T. Wertelecki 259
- Mating behavior and fertility of broiler breeder males reared on shortened growth cycles**
 J. R. Moyle, D. E. Yoho, S. M. Whipple, A. M. Donoghue, and R. K. Bramwell 272
- Evaluation of an enzyme complex containing nonstarch polysaccharide enzymes and phytase on the performance of broilers fed a sorghum and soybean meal diet**
 E. Avila, J. Arce, C. Soto, F. Rosas, M. Ceccantini, and D. R. McIntyre 279
- Optimizing the hatching of Tibetan chickens by artificial methods at high altitude**
 D. Lan, Y. D. Hu, Y. Song, Q. Zhu, and Y. P. Liu 287

Evaluation of the nutritional value of sunflower meal and its effect on performance, digestive enzyme activity, organ weight, and histological alterations of the intestinal villi of broiler chickens	
H. Nassiri Moghaddam, S. Salari, J. Arshami, A. Golian, and M. Maleki	293
Ratio needs of arginine relative to lysine of male broilers from 28 to 42 days of age during a constant, elevated environmental temperature regimen	
L. Mejia, C. D. Zumwalt, P. B. Tillman, R. B. Shirley, and A. Corzo	305
Effects of dietary calcium formate inclusion on broiler performance, skeletal development, and gut maturation	
S. A. Pohl, D. J. Caldwell, J. T. Lee, J. R. Coppedge, S. L. Dunn-Horrocks, K. D. Stringfellow, K. Jessen, and M. B. Farnell	311
The effect of soybean oil quality and vitamin E supplementation on turkey diet nutrition	
C. da Rocha, A. Maiorka, F. L. de Paula Valle, V. Gonsales Schramm, A. L. Angeli, and A. V. Fischer da Silva	318
Effect of a partial replacement of limestone by a CaSO₄-zeolite mixture combined with a slight protein reduction on production indices, egg quality, and excreta pH in laying hens	
C. Romero, E. M. Onyango, W. Powers, R. Angel, and T. J. Applegate	325
Effects of dietary supplementation of citric acid, copper, and microbial phytase on growth performance and mineral retention in broiler chickens fed a low available phosphorus diet	
G. Demirel, A. Y. Pekel, M. Alp, and N. Kocabağlı	335
Digestible lysine requirements of female broilers from 1 to 15 days of age	
W. A. Dozier III and R. L. Payne	348
<i>Clostridium perfringens</i> and <i>Clostridium septicum</i> toxoid to control cellulitis in turkeys	
A. J. Thachil, B. McComb, M. M. Early, C. Heeder, and K. V. Nagaraja	358
Effects of graded replacement of soybean meal by sunflower seed meal in laying hen diets on hen performance, egg quality, egg fatty acid composition, and cholesterol content	
S. R. Shi, J. Lu, H. B. Tong, J. M. Zou, and K. H. Wang	367
Effects of broiler carcass bleed time and scald temperature on poultry processing wastewater	
H. S. Plumber, B. H. Kiepper, and C. W. Ritz	375
Digestible lysine and threonine requirements of male turkeys from days 8 to 21 and days 29 to 42	
L. B. Linares, R. A. Murarolli, E. A. Guaiume, R. B. Shirley, D. Hoehler, D. R. Ledoux, and J. D. Firman	384
Dilution of broiler chicken diets with whole hulless barley	
D. M. Anderson, J. L. MacIsaac, and A. Safamehr	399
Prevalence of <i>Arcobacter</i> species on chicken carcasses during processing in Iran	
E. Rahimi, H. Hormozipoor, M. Gholami Ahangaran, and F. Yazdi	407
Chicken anemia virus infection in broiler chickens vaccinated and not vaccinated for avian influenza in Iran	
M. Gholami-Ahangaran and N. Zia-Jahromi	413

Review Article

Current perspectives in avian salmonellosis: Vaccines and immune mechanisms of protection

L. Revollo and A. J. P. Ferreira

418

2010 Informal Nutrition Symposium

Remodeling the intestinal ecosystem toward better performance and intestinal health

A. A. Pedroso, J. Maurer, Y. Cheng, and M. D. Lee

432