

CONTENTS

Research Reports

- Effect of range enrichment on performance, behavior and forage intake of free-range chickens**
 A. Dal Bosco, C. Mugnai, A. Rosati, A. Paoletti, S. Caporali, and C. Castellini 137
- Descriptive analyses of gait characteristics in Pekin Ducks from hatch to market weight**
 Chelsea L. Campbell, Sarah Colton, Amanda Porter, Rachel Haas, Elizabeth Gerometta, Abigail Lindberg, Susan M. Fraley, and Gregory S. Fraley 146
- Evaluation of protection conferred by a vaccination program based on the H120 and CR88 commercial vaccines against a field variant of avian infectious bronchitis virus**
 Hager Bourogâa, Imen Larbi, Khaled Miled, Ymene Kort Hellal, Jihene Hassen, Imen Behi, Jihene Nsiri, and Abdeljelil Ghram 156
- Effects of *Fusarium* mycotoxins with yeast cell wall absorbent on hematology, serum biochemistry, and oxidative stress in broiler chickens**
 S. Z. Jiang, Z. Li, G. Y. Wang, Z. B. Yang, W. R. Yang, G. G. Zhang, and Y. B. Wu 165
- Effects of xylanase supplementation of corn-soybean meal-dried distiller's grain diets on performance, metabolizable energy, and body composition when fed to first-cycle laying hens**
 E. A. Bobeck, N. A. Nachtrieb, A. B. Batal, and M. E. Persia 174
- Influence of phytate level on broiler performance and the efficacy of 2 microbial phytases from 0 to 21 days of age**
 T. T. dos Santos, C. L. Walk, and S. Srinongkote 181
- Evaluation of xylanase in low-energy broiler diets**
 M. P. Williams, J. T. Klein, C. L. Wyatt, T. W. York, and J. T. Lee 188
- Morphology and chemical composition of turkey eggs**
 Emilia Mróz, Monika Stępińska, and Magdalena Krawczyk 196
- Use of live oocyst vaccine in the control of turkey coccidiosis: Effect on performance and intestinal morphology**
 E. L. Milbradt, A. A. Mendes, J. G. Ferreira, I. Almeida Paz, M. B. Martins, C. Sanfelice, B. C. Fernandes, and A. S. Okamoto 204
- Growth performance of fast-growing broilers reared under different types of production systems with outdoor access: Implications for organic and alternative production systems**
 J. R. Moyle, K. Arsi, A. Woo-Ming, H. Arambel, A. Fanatico, P. J. Blore, F. D. Clark, D. J. Donoghue, and A. M. Donoghue 212

Rosemary oil, clove oil, and a mix of thyme-orange essential oils inhibit <i>Salmonella</i> and <i>Campylobacter</i> in vitro	
R. Thanissery, S. Kathariou, and D. P. Smith	221
Effect of marinade containing thyme and orange oils on broiler breast fillet and whole wing aerobic bacteria during refrigerated storage	
R. Thanissery and D. P. Smith	228
Proposed changes in living conditions for broilers under the National Organic Program will have limited economic effects	
Tomislav Vukina, Kenneth Anderson, and Mary K. Muth	233
Comparison of hatchability and some egg quality characteristics in spotted and unspotted partridge (<i>Alectoris chukar</i>) eggs	
Tamer Caglayan, Kemal Kirikci, and Ali Aygun	244
Effects of step-up and step-down phytase regimens on performance and processing yields of male broilers from 1 to 35 d of age	
C. K. Gehring, M. R. Bedford, and W. A. Dozier III	252
Effect of supplemental humic and butyric acid on performance and mortality in broilers raised under various environmental conditions	
M. S. Edmonds, S. Johal, and S. Moreland	260
Field Reports	
Footpad dermatitis severity on turkey flocks and correlations with locomotion, litter conditions, and body weight at market age	
M. J. Da Costa, J. L. Grimes, E. O. Oviedo-Rondón, I. Barasch, C. Evans, M. Dalmagro, and J. Nixon	268
The development of injurious pecking in a commercial turkey facility	
G. Duggan, T. Widowski, M. Quinton, and S. Torrey	280
Informal Nutrition Symposium	
From research measurements to application: Bridging the gap; Overview of practical and scientific measurements in nutrition	
Kirk C. Klasing	291
The geometric framework: An in vivo approach	
Aaron J. Cowieson	295
Proving a concept: An in vitro approach	
J. D. van der Klis and C. Kwakernaak	301
Function of the digestive system	
Birger Svihus	306
The use of a pen-size optimization workbook for experiment research design using the Visual Basic for Applications in Excel for poultry	
M. Y. Shim and G. M. Pesti	315
Reducing <i>Salmonella</i> Enteritidis Contamination of Shell Eggs with an Integrated Research and Outreach Approach Symposium	
Introduction: Reducing <i>Salmonella</i> Enteritidis contamination of shell eggs	
P. H. Patterson, K. Venkitanarayanan, and S. Kariyawasam	323

Efficacy of plant-derived antimicrobials for reducing egg-borne transmission of <i>Salmonella</i> Enteritidis	
I. Upadhyaya, A. Kollanoor-Johny, M. J. Darre, and K. Venkitanarayanan	330
Practical implications of plant-derived antimicrobials in poultry diets for the control of <i>Salmonella</i> Enteritidis	
M. J. Darre, A. Kollanoor-Johny, K. Venkitanarayanan, and I. Upadhyaya	340
On-farm risk factors for <i>Salmonella</i> Enteritidis contamination	
E. A. Wallner-Pendleton, P. H. Patterson, S. Kariyawasam, D. W. Trampel, and T. Denagamage	345
Integrated farm management to prevent <i>Salmonella</i> Enteritidis contamination of eggs	
Darrell W. Trampel, Thomas G. Holder, and Richard K. Gast	353