

CONTENTS

Research Reports

- Neural network models for predicting early egg weight in broiler breeder hens**
A. Faridi, J. France, and A. Golian 1
- Hatch window on development of intestinal mucosa and presence of CD3-positive cells in thymus and spleen of broiler chicks**
R. M. Hayashi, L. N. Kuritza, M. C. Lourenço, L. B. Miglino, L. Pickler, C. Rocha, A. Maiorka, and E. Santin 9
- Sperm competition greatly decreases the time interval when breeder hens are artificially inseminated by different cockerels**
J. Ma, P. Chen, G. Xu, Z. Peng, C. Yang, D. Shu, J. Wang, C. Luo, and H. Qu 19
- Efficacy of combination chemicals as sanitizers of *Salmonella*-inoculated broiler hatching eggshells**
R. J. Buhr, J. L. Spickler, A. R. Ritter, D. V. Bourassa, N. A. Cox, L. J. Richardson, and J. L. Wilson 27
- Effects of metabolizable energy and balanced protein on egg production, quality, and components of Lohmann Brown laying hens**
F. Li, L. M. Zhang, X. H. Wu, C. Y. Li, X. J. Yang, Y. Dong, A. Lemme, J. C. Han, and J. H. Yao 36
- Effects of guanidinoacetic acid supplementation to broiler diets with varying energy contents**
S. N. Mousavi, A. Afsar, and H. Lotfollahian 47
- Effects of dietary yeast autolysate (*Saccharomyces cerevisiae*) on performance, carcass and gut characteristics, blood profile, and antibody production to sheep red blood cells in broilers**
S. Yalçın, H. Eser, S. Yalçın, S. Cengiz, and Ö. Eltan 55
- Performance and preference of broiler chickens exposed to different lighting sources**
Angélica Signor Mendes, Sandro José Paixão, Rasiel Restelatto, Gabriela Munhoz Morello, Daniella Jorge de Moura, and Jean Carlo Possenti 62
- Vitamin composition of new-generation corn distillers dried grains with solubles**
B. Jung, A. B. Batal, N. E. Ward, and N. Dale 71
- Observations of benzimidazole efficacies against *Ascaridia dissimilis*, *Ascaridia galli*, and *Heterakis gallinarum* in naturally infected poultry**
T. A. Yazwinski, C. A. Tucker, E. Wray, L. Jones, and F. D. Clark 75
- Reproductive performance of Cobb 500 breeder hens fed diets supplemented with zinc, manganese, and copper from inorganic and amino acid-complexed sources**
A. Favero, S. L. Vieira, C. R. Angel, F. Bess, H. S. Cemin, and T. L. Ward 80

Low doses of exogenous xylanase improve the nutritive value of triticale-based diets for broilers

A. R. Mendes, T. Ribeiro, B. A. Correia, P. Bule, B. Maças, L. Falcão,
J. P. B. Freire, L. M. A. Ferreira, C. M. G. A. Fontes, and M. M. Lordelo 92

Effect of various forms of dietary *Chlorella* supplementation on growth performance, immune characteristics, and intestinal microflora population of broiler chickens

H. K. Kang, H. M. Salim, N. Akter, D. W. Kim, J. H. Kim, H. T. Bang, M. J. Kim,
J. C. Na, J. Hwangbo, H. C. Choi, and O. S. Suh 100

Effects of fiber supply in furnished cages on performance, egg quality, and feather cover in 2 egg-laying hybrids

R. Kalmendal, F. Johansson, and H. Wall 109

Comparison of broiler live performance, carcass characteristics, and fatty acid composition of thigh meat when fed diets supplemented with neutralized sunflower soapstock or soybean oil

A. Y. Pekel, G. Demirel, M. Midilli, T. Öğretmen, N. Kocabağlı, and M. Alp 118

Contamination of raw poultry meat by airborne *Listeria* originating from a floor drain

M. E. Berrang, J. F. Frank, and R. J. Meinersmann 132

Field Reports

Identification and characterization of *Yersinia enterocolitica* isolated from raw chicken meat based on molecular and biological techniques

H. Momtaz, M. Davood Rahimian, and F. Safarpour Dehkordi 137

Review Article

Effects of glycerol on the growth performance, internal organ weights, and drumstick muscle of broilers

E. Topal and M. Ozdogan 146