

# THE JOURNAL OF APPLIED POULTRY RESEARCH

June 2016

Volume 25, Number 2

## CONTENTS

### Research Reports

#### Assessing meat production of 3 Hungarian Landrace Guinea Fowl ecotypes reserved for in vivo conservation

- I. T. Szalay, T. N. Lan Phuong, T. R. Ferencz, K. D. T. Dong Xuan, K. Kustos, and K. Kovacsne Gaal

139

#### The effects of adding aqueous extract and dried aerial part powder of *Tribulus terrestris* on productive performance and blood parameters of laying hens

- T. Amirshekari, N. Ziae, S. M. Ghoreishi, and E. Esfandiarpour

145

#### Choice feeding of protein concentrate and grain to organic meat chickens

- A. C. Fanatico, C. M. Owens-Hanning, V. Brewer Gunsaulis, and A. M. Donoghue

156

#### Immune response of broiler chickens supplemented with prebiotic from *Saccharomyces cerevisiae* challenged with *Salmonella enteritidis* or Minnesota

- M. C. Lourenço, A. M. de Souza, R. M. Hayashi, A. B. da Silva, and E. Santin

165

#### Composition of broilers meat

- J. de Oliveira, S. V. Avanço, M. Garcia-Neto, and E. H. G. Ponsano

173

#### Evaluation of a cellulose-based industrial wastewater byproduct as broiler bedding

- C. W. Ritz, B. H. Kiepper, and B. D. Fairchild

182

#### Hops $\beta$ -acids (*Humulus lupulus*) decrease intestinal gene expression of proinflammatory cytokines in an ex-vivo model

- C. Bortoluzzi, J. F. M. Menten, H. Silveira, A. D. B. Melo, and M. H. Rostagno

191

#### Effects of dietary lysine and methionine supplementation on Ross 708 male broilers from 21 to 42 d of age (I): growth performance, meat yield, and cost effectiveness

- W. Zhai, E. D. Peebles, M. W. Schilling, and Y. Mercier

197

#### Effects of dietary lysine and methionine supplementation on Ross 708 male broilers from 21 to 42 days of age (II): breast meat quality

- W. Zhai, M. W. Schilling, V. Jackson, E. D. Peebles, and Y. Mercier

212

#### Effects of dietary lysine and methionine supplementation on Ross 708 male broilers from 21 to 42 d of age (III): serum metabolites, hormones, and their relationship with growth performance

- W. Zhai, E. D. Peebles, X. Wang, P. D. Gerard, H. A. Olanrewaju, and Y. Mercier

223

#### Evaluation of protection induced by *Riemerella anatipestifer*-*E. coli* O78 bacterin in white pekin ducks

- Simone T. Stoute, Tirath S. Sandhu, and Maurice E. Pitesky

232

#### High dosing NSP enzymes for total protein and digestible amino acid reformulation in a wheat/corn/soybean meal diet in broilers

- K. De Keyser, L. Kuterna, S. Kaczmarek, A. Rutkowski, and E. Vanderbeke

239

**Examination of poultry slaughterhouse wastewater sludge conditioning using microwave irradiation**

N. B. Pakdil

247

**The effect of safflower meal substitution in a lysine fortified corn-soybean meal diet on performance, egg quality, and yolk fat profile of laying hens**

G. W. Barbour, N. N. Usayran, S. K. Yau, S. K. Murr, H. A. Shaib, N. N. Abi Nader,  
G. M. Salameh, and M. T. Farran

256

**Field Reports**

**On farm monitoring of the impact of water system sanitation on microbial levels in broiler house water supplies**

P. Maharjan, T. Clark, C. Kuenzel, M. K. Foy, and S. Watkins

266

**On-farm assessment of switchgrass bedding**

J. R. Moyle, L. A. Brooks, B. A. McCrea, and W. R. Brown

272

**Symposium: PSA Informal Nutrition**

**Toward a better understanding of mechanisms of probiotics and prebiotics action in poultry species**

K. M. Ajuwon

277

**The use and abuse of immune indices in nutritional immunology studies**

Ramesh K. Selvaraj, Revathi Shanmugasundaram, and Ravikumar Rengasamy

284

**Confirming the promise to prevent physiological disorders of organs: urolithiasis in laying hens**

Robert F. Wideman, Jr.

292

**Assessing measurements in feed enzyme research: Phytase evaluations in broilers**

M. R. Bedford, C. L. Walk, and H. V. Masey O'Neill

305