

## Contents

### ANIMAL BREEDING AND GENETICS

191. Genomic Heritability of Bovine Growth Using a Mixed Model / *Jihye Ryu and Chaeyoung Lee* (Korea) ..... 1521
192. Polymorphism, Genetic Effect and Association with Egg Production Traits of Chicken Matrix Metalloproteinases 9 Promoter / *Guiyu Zhu and Yunliang Jiang* (China) ..... 1526
193. Genome-wide DNA Methylation Profiles of Small Intestine and Liver in Fast-growing and Slow-growing Weaning Piglets / *Woori Kwak, Jin-nam Kim, Daewon Kim, Jin Su Hong, Jae Hark Jeong, Heebal Kim, Seoae Cho, and Yoo Yong Kim* (Korea) ..... 1532
194. Evaluation of Genome Based Estimated Breeding Values for Meat Quality in a Berkshire Population Using High Density Single Nucleotide Polymorphism Chips / *S. Baby, K.-E. Hyeong, Y.-M. Lee, J.-H. Jung, D.-Y. Oh, K.-C. Nam, T. H. Kim, H.-K. Lee, and J.-J. Kim* (Korea) ..... 1540
195. Assessment of Genetic Diversity, Relationships and Structure among Korean Native Cattle Breeds Using Microsatellite Markers / *Sangwon Suh, Young-Sin Kim, Chang-Yeon Cho, Mi-Jeong Byun, Seong-Bok Choi, Yeoung-Gyu Ko, Chang Woo Lee, Kyoung-Sub Jung, Kyoung Hun Bae, and Jae-Hwan Kim* (Korea) ..... 1548

### ANIMAL REPRODUCTION AND PHYSIOLOGY

196. Testicular Cell Indices and Peripheral Blood Testosterone Concentrations in Relation to Age and Semen Quality in Crossbred (Holstein Friesian×Tharparkar) Bulls / *S. K. Rajak, A. Kumaresan, M. K. Gaurav, S. S. Layek, T. K. Mohanty, M. K. Muhammad Aslam, U. K. Tripathi, Shiv Prasad, and S. De* (India) ..... 1554

### RUMINANT NUTRITION AND FORAGE UTILIZATION

197. Effect of *Lactobacillus mucosae* on *In vitro* Rumen Fermentation Characteristics of Dried Brewers Grain, Methane Production and Bacterial Diversity / *Alvin P. Soriano, Lovelia L. Mamud, Seon-Ho Kim, Yeon Jae Choi, Chang Dae Jeong, Gui Seck Bae, Moon Baek Chang, and S. Suk Lee* (Korea) ..... 1562
198. Assessment of Anti-nutritive Activity of Tannins in Tea By-products Based on *In vitro* Rumen Fermentation / *Makoto Kondo, Yoshiaki Hirano, Noriyuki Ikai, Kazumi Kita, Anuraga Jayanegara, and Hiro-omi Yokota* (Japan) ..... 1571
199. Effect of Encapsulating Nitrate in Sesame Gum on *In vitro* Rumen Fermentation Parameters / *Chiedza Isabel Mamvura, Sangbuem Cho, David Tinotenda Mbiriri, Hong-gu Lee, and Nag-Jin Choi* (Korea) ..... 1577
200. Ingestive Behavior of Heifers Supplemented with Glycerin in Substitution of Corn on *Brachiaria brizantha* Pasture / *L. M. A. M. Facuri, R. R. Silva, F. F. da Silva, G. G. P. de Carvalho, C. B. Sampaio, F. B. L. Mendes, M. M. Lisboa, D. S. Barroso, V. M. Carvalho, and M. M. S. Pereira* (Brazil) ..... 1584

---

## NONRUMINANT NUTRITION AND FEED PROCESSING

201. Effect of Production Phase on Growth, Enzyme Activities and Feed Selection of Broilers Raised on Vegetable Protein Diet / *M. A. Hossain, A. F. Islam, and P. A. Iji* (Australia) ..... 1593
202. Protected Organic Acid Blends as an Alternative to Antibiotics in Finishing Pigs / *S. D. Upadhaya, K. Y. Lee, and I. H. Kim* (Korea) ..... 1600
203. Effect of Different Dietary n-6 to n-3 Fatty Acid Ratios on the Performance and Fatty Acid Composition in Muscles of Broiler Chickens / *G. P. Mandal, T. K. Ghosh, and A. K. Patra* (India) ..... 1608
204. Comparison of Oven-drying Methods for Determination of Moisture Content in Feed Ingredients / *J. Y. Ahn, D. Y. Kil, C. Kong, and B. G. Kim* (Korea) ..... 1615

## ANIMAL PRODUCTS

205. Effect of Packaging Method and Storage Time on Physicochemical Characteristics of Dry-Cured Pork Neck Products at 10°C / *Il-Suk Kim, Sang-Keun Jin, Mi-Ra Yang, Dong Uk Ahn, Jae-Hong Park, and Suk-Nam Kang* (Korea) ..... 1623
206. Differences in Health-related Fatty Acids, Intramuscular Fat and the Physico-chemical Quality in Mutton as Affected by Season, Place of Purchase and Meat Portion / *Zikhona T. Rani, Carlos W. T. Nantapo, Arnold Hugo, and Voster Muchenje* (South Africa) ..... 1630
207. Carcass Characteristics and Meat Quality of Korean Native Ducks and Commercial Meat-type Ducks Raised under Same Feeding and Rearing Conditions / *H. J. Kwon, Y. K. Choo, Y. I. Choi, E. J. Kim, H. K. Kim, K. N. Heo, H. C. Choi, S. K. Lee, C. J. Kim, B. G. Kim, C. W. Kang, and B. K. An* (Korea) ..... 1638

## ANIMAL BIOTECHNOLOGY

208. Knock-in of Enhanced Green Fluorescent Protein or/and Human *Fibroblast Growth Factor 2* Gene into  $\beta$ -Casein Gene Locus in the Porcine Fibroblasts to Produce Therapeutic Protein / *Sang Mi Lee, Ji Woo Kim, Young-Hee Jeong, Se Eun Kim, Yeong Ji Kim, Seung Ju Moon, Ji-Hye Lee, Keun-Jung Kim, Min-Kyu Kim, and Man-Jong Kang* (Korea) ..... 1644

## ANIMAL BEHAVIOR AND WELFARE

209. The Influence of Feed Energy Density and a Formulated Additive on Rumen and Rectal Temperature in Hanwoo Steers / *Sangbuem Cho, David Tinotenda Mbiriri, Kwansob Shim, A-Leum Lee, Seong-Jin Oh, Jinho Yang, Chaehwa Ryu, Young-Hoon Kim, Kang-Seok Seo, Jung-Il Chae, Young Kyoon Oh, and Nag-Jin Choi* (Korea) ..... 1652

## ENVIRONMENT AND MANAGEMENT

210. Farmers' Perceptions and Knowledge of Cattle Adaptation to Heat Stress and Tick Resistance in the Eastern Cape, South Africa / *C. L. F. Katiyatiya, V. Muchenje, and A. Mushunje* (South Africa) ..... 1663
-