Review
A new perspective on managing the onset of puberty and early reproductive performance in ewe lambs: a review

Genetics and Genomics
Variability of the IGF2 locus in the Suino Nero Lucano pig population and its effects on meat quality
Amalia Simonetti, Andrea Rando, Paola Di Gregorio, Carmelisa Valluzzi, Annamaria Perna and Emilio Gambacorta  1976–1982
Evaluation of repeatability and pre-structured repeatability models for genetic analyses of repeated records of fat and protein contents of milk in Iranian Holstein cows
M. Asadi Fozi  1983–1989
A non-synonymous single nucleotide polymorphism in the paraoxonase 3 gene regulates meat quality in Berkshire pigs
Genotype by environment interaction for yearling weight in Nellore cattle applying reaction norms models
The effect of lipid metabolism-related genes on intramuscular fat content and fatty acid composition in multiple muscles
Chendong Liu, Linyuan Shen, Jingjing Du, Xiaojian Yu, Qi Yang, Shunhui Zhang and Li Zhu  2003–2010

Physiology, Endocrinology and Reproduction
Protective effects of taurine on growth performance and intestinal epithelial barrier function in weaned piglets challenged without or with lipopolysaccharide
Zhiru Tang, Jinyan Liu, Zhihong Sun, Zhihong Sun, Junxia Mao and Yao Wang  2011–2020
Effect of nano-selenium and nano-zinc particles during in vitro maturation on the developmental competence of bovine oocytes
B. R. Abdel-Halim and Nermeen A. Helmy  2021–2028
Effect of duration of altrenogest treatment on farrowing rate and litter size of gilts
F. De Rensis, C. Mazzoni, R. Saleri, A. Scollo, K. J. Plush and R. N. Kirkwood  2029–2031

Nutrition and Metabolism
Detection of heat produced during roughage digestion in ruminants by using infrared thermography
Márzia Saladini Vieira Salles, Suelen Correa Silva, Luiz Carlos Roma Junior, Lenira El Faro, Carla Maris Machado Bittar, Celso Eduardo Lins Oliveira and Fernando André Salles  2032–2041
Impact of dietary carbohydrate balance on rumen fermentation, eating behaviour, growth and development of 8–10-month-old heifers
Jinhao Xu, Hongrong Wang, Yizhao Shen, Rui Zhao, Rufang Ge, Lihuai Xu and Mengzhi Wang  2042–2048

Feed Quality, Nutritional Value and Toxicology
Mineral status of reproducing ewes grazing vegetative cereal crops
David G. Masters, Serina Hancock, Gordon Refshauge, Susan Robertson, Marie Bhanugopan, Michael Friend and Andrew N. Thompson  2049–2060

Continued on next page
Utilisation of a mix of powdered oils as fat supplement in nursery- and growing-pig diets
R. Sá, M. Gandarillas, A. P. Schinckel, D. Kuppenheim, J. Salgado, C. M. Cox, R. E. Larrain and E. Vargas-Bello-Pérez 2061–2070

Evaluating the influence of dietary phytochemical blends on gestating and lactating sows and suckling piglets
Mohsen Mohammad Gheisar, Jin Young Cheong, Pinyao Zhao and In Ho Kim 2071–2075

Effect of the inclusion of natural additives on animal performance and meat quality of crossbred bulls (Angus × Nellore) finished in feedlot
Carlos Alberto Fugita, Rodolfo Martin do Prado, Maribel Velandia Valero, Elton G. Bonafé, Camila Barbosa Carvalho, Ana Guerrero, Carlos Sañudo and Ivanor Nunes do Prado 2076–2083

Efficacy of antioxidant and antimicrobial activity of whole porcine blood hydrolysates and its fractions under in-vitro conditions
Akhilesh K. Verma, Manish Kumar Chatli, Nitin Mehta and Pavan Kumar 2084–2090

**Meat Science and Product Quality**

Comparisons of meat quality and muscle fibre characteristics on multiple pig breeds and sexes using principal component analysis
Jun-Mo Kim, Sang-Hoon Lee and Youn-Chul Ryu 2091–2099

Growth performance and carcass characteristics of Australian prime lambs supplemented with pellets containing canola oil or flaxseed oil
Don V. Nguyen, Bunmi S. Malau-Aduli, Peter D. Nichols and Aduli E. O. Malau-Aduli 2100–2108

Effects of maternal parity on the pork quality traits of progeny
Jun-Mo Kim, Dong-Geun Kang, Sang-Hoon Lee, Kyung-Bo Ko and Youn-Chul Ryu 2109–2116

Quality characteristics of meat from *triceps brachii* muscle from steers and heifers finished on high-concentrate diets containing increasing concentrations of linseed oil

Replacement of soybean meal by sunflower cake in heifers finished on pasture: meat quality
Rafael Henrique de Tonissi Buschinelli de Goes, Kennyson Alves de Souza, Ana Guerrero, Sara Leticia Nochi Cerilo, Alexandre Rodrigo Mendes Fernandes, Diego dos Santos Penha and Ivanor Nunes do Prado 2126–2131

Differences on meat colour and composition between ‘Landrace × Large White’ and ‘Iberian’ pigs under identical nutritional and management conditions
Patricia Palma-Granados, Ana Haro, Luis Lara, José F. Aguilera, Rosa Nieto and Isabel Seiquer 2132–2142

Ground spices to stabilise lamb burgers made of lower- or higher-value carcass cuts
Almudena Cózar, Noemi Rubio and Herminia Vergara 2143–2151

Comparison and relationship between meat colour and antioxidant capacity of different pig breeds
Wei Chen, Qi-fan Zeng, Hui-peng Xu, Guo-feng Fang, Shou-dong Wang, Chuan-hao Li, Yan-dong Wang, Hui Wang and Yong-qing Zeng 2152–2157

**Rural Development**

Herd dynamics reflect constraints for pig production and farmer attitudes in smallholder systems in Lao PDR
Tassilo T. Tiemann, Ammaly Phengvilaysouk and Soukanh Keonouchanh 2158–2166