

# ANIMAL PRODUCTION SCIENCE

**CONTENTS** Volume 61, Issue 15, 2021, 1519–1632

## Genetics and Performance

Vitality in relation to litter size of crossbred pigs and the effect of the terminal sire line

*K. Elbert, N. Matthews, R. Wassmuth and J. Tetens* 1519–1525

## Nutrition and Metabolism

Sulfur amino acid requirements for pullets in growth and pre-laying trials

*E. P. Silva, N. K. Sakomura, J. C. P. Dorigam, M. B. Lima, E. B. Malheiros and J. B. K. Fernandes* 1526–1533

## Feed Additives and Metabolism

Performance, digestibility, nitrogen balance and ingestive behaviour of goat kids fed diets supplemented with condensed tannins from *Acacia mearnsii* extract

*Paulo Roberto Silveira Pimentel, Caius Barcellos de Pellegrini, Jocasta Meira Galvão, Lara Maria Santos Brant, Claudio Vaz Di Mambro Ribeiro, Thadeu Mariniello Silva, Analivia Martins Barbosa, Jarbas Miguel da Silva Júnior, Leilson Rocha Bezerra and Ronaldo Lopes Oliveira* 1534–1545

Effects of montmorillonite on the growth performance, immunity, intestinal morphology and caecal microflora of broilers

*Shizhen Qin, Jinlv Li, Wangzhou Huang, Haibo Wang, Shijiao Qin, Wengang Pei, Minmin Yang and Zhaoquo Shi* 1546–1552

Effect of a probiotic (*Lactobacillus* sp.), yeast (*Saccharomyces cerevisiae*) and mycotoxin detoxifier alone or in combination on performance, immune response and serum biochemical parameters in broilers fed deoxynivalenol-contaminated diets

*Tayebe Azizi, Mohsen Daneshyar, Manoochehr Allymehr, Amir Tukmechi, Hamed Khalilvandi Behroozyar and Ali Shalizar Jalali* 1553–1563

## Nutrition and Behaviour

Physiological and behavioural responses of sheep grazing in a tropical silvopastoral system

*Flavia de Oliveira Scarpino van Cleef, Eric Haydt Castello Branco van Cleef, Daniel Jordan de Abreu Santos, Claudia Maria Herédias Ribas, Vanessa Zironi Longhini and Ana Claudia Ruggieri* 1564–1574

Effects of varying proportions of corn grain to barley grain in corn silage-based diet on feed sorting behaviour and productivity of dairy cows

*O. Ramezani-Afarani, A. Zali, M. Ganjkanlou, S. M. Nasrollahi, P. Moslehifar and F. Ahmadi* 1575–1583

## Environment and Management

Effects of ambient temperature and humidity on body temperature and activity of heifers, and a novel idea of heat stress monitoring

*Hongzhi Tian, Jiangjing Liu, Xiaoli Chen, Shujing Li, Xin Li, Kifayatullah Mengal, Yongqiang Lu and Dong Wang* 1584–1591

## Production Systems and Health

The effects of parasitism on ewes for prime lamb production in western Victoria

*B. Kirk, J. W. A. Larsen, N. Anderson and M. A. Stevenson* 1592–1605

## Production Systems in Transition

Success rate, genetic improvement and economic analysis of artificial insemination delivery models for smallholder pig production systems

*Kadirvel Govindasamy, Mokidur Rahman, Tukheswar Chutia and L. Anandakumar Singh* 1606–1612

### **Meat Science and Product Quality**

Meat and sensory eating quality of loin steaks from cattle slaughtered at different ages as a result of short, medium or long finishing systems

*J. Hyslop, C.-A. Duthie, J. A. Rooke and R. I. Richardson* 1613–1624

Effects of chitosan oligosaccharides on meat quality, muscle energy metabolism and anti-oxidant status in broilers that have experienced transport stress

*Ruixia Lan, Qingqing Chang and Yiqi Lu* 1625–1632