

## CONTENTS

## Breeding and genetics

Zhang, B., Peñagaricano, F., Chen, H. and Khatib, H.

Novel transcripts and alternatively spliced genes are associated with early development in bovine embryos 1199

Berry, D. P., Bastiaansen, J. W. M., Veerkamp, R. F., Wijga, S., Wall, E., Berglund, B. and Calus, M. P. L.

Genome-wide associations for fertility traits in Holstein–Friesian dairy cows using data from experimental research herds in four European countries 1206

Jiménez-Montero, J. A., González-Recio, O. and Alenda, R.

Genotyping strategies for genomic selection in small dairy cattle populations 1216

Sadeghi-Sefidmazgi, A., Nejati-Javaremi, A., Moradi-Shahrbabak, M., Miraei-Ashtiani, S. R. and Amer, P. R.

Economic values under inappropriate normal distribution assumptions 1225

## Nutrition

Bhatti, S. A., Ali, A., Nawaz, H., McGill, D., Sarwar, M., Afzal, M., Khan, M. S., Ehsanullah, Amer, M. A., Bush, R., Wynn, P. C. and Warriach, H. M.

Effect of pre-weaning feeding regimens on post-weaning growth performance of Sahiwal calves 1231

Nasrollahi, S. M., Khorvash, M., Ghorbani, G. R., Teimouri-Yansari, A., Zali, A. and Zebeli, Q.

Grain source and marginal changes in forage particle size modulate digestive processes and nutrient intake of dairy cows 1237

## Physiology and functional biology of systems

Renli, Q., Chao, S., Jun, Y., Chan, S. and Yunfei, X.

Changes in fat metabolism of black-bone chickens during early stages of infection with Newcastle disease virus 1246

Kafi, M., Tamadon, A., Saeb, M., Mirzaei, A. and Ansari-Lari, M.

Relationships between thyroid hormones and serum energy metabolites with different patterns of *postpartum* luteal activity in high-producing dairy cows 1253

## Behaviour, welfare and health

Guatteo, R., Levisonnois, O., Fournier, D., Guémené, D., and Latouche, K., Leterrier, C., Mormède, P., Prunier, A., Servière, J., Terlouw, C. and Le Neindre, P.

Minimising pain in farm animals: the 3S approach – ‘Suppress, Substitute, Soothe’ (review) 1261

Averós, X., Brossard, L., Dourmad, J. Y., de Greef, K. H., Edwards, S. A. and Meunier-Salaün, M. C.

Meta-analysis on the effects of the physical environment, animal traits, feeder and feed characteristics on the feeding behaviour and performance of growing-finishing pigs 1275

Merlot, E., Vincent, A., Thomas, F., Meunier-Salaün, M.-C., Damon, M., Robert, F., Dourmad, J.-Y., Lebret, B. and Prunier, A.

Health and immune traits of Basque and Large White pigs housed in a conventional or enriched environment 1290

Nemec Svete, A., Čebulj-Kadunc, N., Frangež, R. and Kruljc, P.

Serum cortisol and haematological, biochemical and antioxidant enzyme variables in horse blood sampled in a slaughterhouse lairage, immediately before stunning and during exsanguinations 1300

Freidin, E., Catanese, F., Cuello, M. I. and Distel, R. A.

Induction of low-nutritious food intake by subsequent nutrient supplementation in sheep (*Ovis aries*) 1307

Kronqvist, C., Emanuelson, U., Tråvén, M., Spörndly, R. and Holtenius, K.

Relationship between incidence of milk fever and feeding of minerals during the last 3 weeks of gestation 1316

## Farming systems and environment

Madrid, J., López, M. J., Orengo, J., Martínez, S., Valverde, M., Megías, M. D. and Hernández, F.

Effect of aluminum sulfate on litter composition and ammonia emission in a single flock of broilers up to 42 days of age 1322

Batorek, N., Čandek-Potokar, M., Bonneau, M. and Van Milgen, J.

Meta-analysis of the effect of immunocastration on production performance, reproductive organs and boar taint compounds in pigs 1330

Anderson, D. M., Fredrickson, E. L. and Estell, R. E.

Managing livestock using animal behavior: mixed-species stocking and flocks 1339

Jurjanz, S., Feidt, C., Pérez-Prieto, L. A., Ribeiro Filho, H. M. N., Rychen, G. and Delagarde, R.

Soil intake of lactating dairy cows in intensive strip grazing systems 1350

Plesch, G. and Knierim, U.

Effects of housing and management conditions on teat cleanliness of dairy cows in cubicle systems taking into account body dimensions of the cows 1360