

Contents

Volume 34, No. 1–4, 2025

Vol. 34, No. 1, 2025

Review

Evaluation of the application and environmental sustainability of alternative feed materials in sturgeon nutrition. A review

Mashood Z., M. Rawski, B. Kierończyk, P. Skrzypczak and J. Mazurkiewicz (Poznań, Poland)

Animal physiology

Isolated digesta as an effective and reliable *ex vivo* system to study the release profile of drug formulations: study on *Candida utilis* urate oxidase

Pierzynowska K. (Lund, Sweden), P. Wychowański (Rome, Italy), N. Mosiichuk, H. Shmihel (Ivano-Frankivsk, Ukraine), K. Zaworski, V. Lavrynenko (Kyiv, Ukraine), J. Donaldson (Johannesburg, South Africa) and S. Pierzynowski (Lund, Sweden)

Resistance of Boer and Kacang goats and their crosses to *Haemonchus contortus* infection

Elieser S., Hartati Hartati, M.F. Nasrulloh, R. Hutasoit, A. Herliatika and E. Handiwirawan (Bogor, West Java, Indonesia)

Monogastrics

Dietary supplementation with fermented *Broussonetia papyrifera* enhances tissue mineral deposition and intestinal microbiome in finishing pigs

Zhang Y.J. (Changsha, China), S.B. Shen (Nanning, China), K.M. Niu (Nanchang, China), B. Cheng, T.T. Zhou, X. Wu (Tianjin, China) and Y. Peng (Changsha, China)

Diets enriched with chicory-derived native inulin can affect kidney and liver mineral content in nursery pigs

Herosimczyk A., M. Ożgo, A. Lepczyński, S. Cabala (Szczecin, Poland), M. Barszcz (Jabłonna, Poland), M. Taciak (Warsaw, Poland) and M. Adaszyńska-Skwirzyńska (Szczecin, Poland)

Effect of lactic acid bacterial probiotic on piglet performance and serum biochemical parameters in Xiangcun Black lactating sows

Liu A.H., C. Yang, X.W. Tang, B.X. Wang, X. Wang, Y.T. Liu, Y.L. Hu, Q.H. Tang and J. Liu (Hunan, China)

Effects of dietary lycopene supplementation on serum biochemistry, meat quality and oxidative stability of breast muscle in broilers

Wan X., Y. Chang, W. Cheng and H. Ma (Yangzhou, P.R. China)

Ruminants

3 Evaluation of feed supplementation using legume leaf meal and spent substrate fermented by *Eupenicillium javanicum* as a potential feed for ruminants: an *in vitro* study
Herliatika A., D. Yulistiani, W. Puastuti, Y. Pujiawati, T. Haryati, A.P. Sinurat, S.I.W. Rakhmani, T. Pasaribu, Harmini and Wardi (Bogor, Indonesia)

Fermentability, digestibility, and gas production of Garut sheep fed maize straw silage-based rations balanced with rice bran and rice husks (*in vitro*)

Rosani U., I. Hernaman, R. Hidayat and D. Hidayat (Sumedang, West Java, Indonesia)

Animal feed

Effect of microbial growth precursor supplementation on chemical composition and fermentation characteristics of palm stem pith silage

Febrina D., S. Sadarman, I. Mirdhayati, T. Adelina, T. Hidayat, A. Al Afid, R.R. Nasution (Panam, Indonesia), N. Qomariyah (Bogor, Indonesia) and R. Pazla (Padang, Indonesia)

Effect of inoculations with different lactic acid bacteria on the fermentation profile and quality of high-moisture fodder pea (*Pisum sativum* L.) silage

Akbay F. (Malatya, Türkiye), T. Günaydın and M. Kizilsimsek (Kahramanmaraş, Türkiye)

Nutritional value, fermentation characteristics and aerobic stability of maize grain silage rehydrated with increasing levels of wet tomato byproduct

Silva A.F., J.P.S. Rigueira (Janaúba, Brazil), C.J.B. Albuquerque, V.R. Rocha Junior, A.S. Santos, F.V. Silva, M.F.P. Silva, E.M.V. Porto, F.P. Monção and P.H.F. Silva (Janaúba, Brazil)

Other topics

Utility of dried and fermented meal from the duckweed species *Spirodela polyrhiza* as fishmeal-protein replacer in diets for common carp fry

Stadtlander T., J. Surber (Frick, Switzerland), F. Tschudi, A. Seitz, M. Sigrist, C. Pietsch (Wädenswil, Switzerland), M. Kreuzer (Lindau, Switzerland) and F. Leiber (Frick, Switzerland)

Vol. 34, No. 2, 2025

Review

Optimising nutrient utilisation in swine diets: The role of enzyme supplementation in alternative and traditional feedstuffs – A review

Sureshkumar S., Y. Jungwon and I.H. Kim (Cheonan, Republic of Korea) 149

Reducing aflatoxins (*Aspergillus flavus*) in food and animal feed by physical methods and chemical degradation: An update

Akhtar M.F., Y. Zhang (Liaocheng, China), M. Umar (Uthal, Pakistan), S. Xinru (Liaocheng, China), E. Ahmad (Multan, Pakistan), Q. Ma, L. Liangliang (Liaocheng, China), E. Ahmad (Multan, Pakistan), W. Changfa (Liaocheng, China) and M. Chunhua (Nanjing, China) 161

Monogastrics

Liquid chromatography mass spectrometry plasma proteome analysis in nursery pigs fed diets enriched with native chicory inulin

Herosimczyk A., M. Ożgo (Szczecin, Poland), A.K. Ciechanowicz (Warsaw, Poland), A. Lepczyński, S. Cabała (Szczecin, Poland), M. Barszcz (Jabłonna, Poland), M. Taciak (Warsaw, Poland), M. Adaszyńska-Skwrzyńska (Szczecin, Poland) and M. Kucia (Warsaw, Poland) 179

Effects of glucose oxidase and probiotics (*Lactobacillus subtilis*, *Bacillus licheniformis*) on growth performance, intestinal microvillus morphology and microfold cells in nursery pigs

Qin S., X. Yuan, Z. Cheng (Tai'an, China), B. Zhang (Long'kou, Shandong, China), Y. Ge (Wei'hai, China), L. Yang and W. Yang (Tai'an, China) 189

Dietary inclusion of *Bacillus*-based probiotic complex improved average daily weight gain and gain-to-feed ratio and reduced faecal noxious gas emission in weaned pigs

Cao S. (Cheonan, South Korea), M. Muniyappan Yangzhou, China), H. Shi and I.H. Kim (Cheonan, South Korea) 200

Fattening results and carcass quality of growing finishing pigs fed a mixture with different proportions of legume seeds

Cebulska A., H. Jankowiak (Bydgoszcz, Poland), P. Nevrla (Brno, Czech Republic) and E. Weisbauerová (Prague-Uhřetěves, Czech Republic) 209

Dietary micelle quercetin: influence on performance, egg quality, and blood biochemical parameters in Hy-Line Brown laying hens

Ahammad G.S., Y.H. Jeon and I.H. Kim (Cheonan, Republic of Korea) 217

Impact of high temperature-humidity index on meat quality and economic benefits in broilers

Kuo H.Y., M.J. Lee and I.H. Chang (Tainan, Taiwan) 224

Growth performance and caecal microbiota of broilers fed Indian gooseberry and Habanero pepper powders

Phisitaukara N., T. Supcharoenkul, P. Chaisena, C. Rakangthong, C. Bunchasak (Bangkok, Thailand), K. Surachat (Songkhla, Thailand) and W. Loongyai (Bangkok, Thailand) 234

Ruminants

Sorghum silage and cover crop silage in diets for late-lactation cows: Effects on feed intake, digestibility, feeding behaviour, and milk yield

Florit E., A. Romanzin, V. Foletto, E. Piasentier and M. Corazzin (Udine, Italy) 242

Influence of harvesting periods and additives on the quality of silage from common reed (*Phragmites australis*) and cattail (*Typha* spp.)

Emre Buğdaycı K., F. Karakaş Oğuz (Burdur, Türkiye), K. Kara (Kayseri, Türkiye), M. Numan Oğuz, İ. Güle, F. Kocasarı (Burdur, Türkiye) and B. Kocaoğlu Güçlü (Kayseri, Türkiye) 249

Effects of different methods and additives on the quality of ensilage from rehydrated maize grain with industrial tomato waste

Antunes A.B., F.P. Monção, H.R.C. Mendes, J.P.S. Rigueira, V.R. Rocha Júnior, A. Santos de Souza, L.A.C. Rocha, R.K.O. de Jesus Silva, M.H.S. Souza and J.P. da Silva (Janaúba, Brazil) 259

Effect of dietary plant tannin supplementation on rumen fermentation and enteric methane production

Holik S., S. Malyugina, A. Staffa, J. Filipek, P. Horky, R. Kadek and J. Illek (Brno, Czech Republic) 272

Other topics

Effects of dietary protein levels on growth and physiology of domesticated European perch (*Perca fluviatilis*) reared in a recirculating aquaculture system

Wiechetek W., R. Kasprzak, D. Adamek-Urbańska (Warsaw, Poland), P. Gomułka (Olsztyn, Poland), M. Wójcik, J. Bochenek (Jabłonna, Poland), H. Bober (Olsztyn, Poland), M. Woźniak (Olsztyn, Poland), J. Śliwiński, A. Szczepański, H. Szudrowicz, R. Wild, K. Kawalski, J. Martynow, P. Bujarski (Warsaw, Poland), J. Król (Olsztyn, Poland) and M. Kamaszewski (Warsaw, Poland) 284

Effect of co-incubation of HPAd-derived adipocytes with enterocytes on inflammatory agents expression and bacterial adhesion in Caco-2-derived enterocytes: a preliminary study

Antushevich H., M. Wójcik (Jabłonna, Poland), M. Załęcki (Olsztyn, Poland), K. Wojtulewicz (Jabłonna, Poland), M. Matusiewicz (Warsaw, Poland) and J. Bochenek (Jabłonna, Poland) 297

Vol. 34, No. 3, 2025**Review**

- Health control of insects used as feed materials and experimental models: state of the art, prospects for future with utilization of biochemical assays – a review
Łosiewicz B., T. Bartoszek and M. Kamaszewski (Warsaw, Poland) 321
- Glimpse of functional feed additives for sustainable broiler production – a review
Sampath V. and I.H. Kim (Cheonan, South Korea) 341
- Advances in enzyme-assisted microbial fermented feed for livestock and poultry production – a review
Xu X., C. Zhan, P. Li, X. Wen and X. Zhang (Yinchaun, China) 356

Animal physiology

- Seasonal effects on haematological and biochemical blood parameters in cold-blooded mares
Czech A., I. Sembratowicz and E. Wnuk (Lublin, Poland) 365

Monogastrics

- Effect of spraying quail eggs with different doses of riboflavin on reproductive and growth rates, blood metabolites, and economics
Gomaa A.A.M. (Zagazig, Egypt), I.M. Youssef (Dokki, Egypt), A.S. Salah (New Valley, Egypt), A.Q. Alkhedaide, T.A. Ismail (Taif, Saudi Arabia), D.E. Abou-Kassem, M. Alagawany (Zagazig, Egypt) and A. Lestingi (Valenzano, Italy) 374
- Effects of dietary medium-chain fatty acids, probiotics, and organic acid salts on laying hen performance and egg quality
Nawrot J., M. Gumowski, E. Popiela, K. Sierżant, M.U. Asghar, Q.U.A. Sajid, M. Korczyński and D. Konkol (Wrocław, Poland) 384
- Naringenin and caffeic acid supplementation alleviate heat stress-induced liver damage by maintaining endoplasmic reticulum homeostasis in broilers
Chen J. (AnKang, China), F. Robinson, Mohd F.B. Hayati and Siat Y. Fong (Kota Kinabalu, Malaysia) 394
- Effects of nutrient density and emulsifier supplementation on apparent total tract digestibility, apparent ileal digestibility and urinary nitrogen in weaned pigs
Sureshkumar S., C.B. Lim and I. H. Kim (Cheonan, Republic of Korea) 406
- Potential of fermented cassava peel and leaves as maize substitutes in diets to improve the performance and meat quality of Kamang ducks
Triani H.D. (Bukittinggi, Indonesia), A. Yuniza, Y. Marlida, H. Husmaini (West Sumatra, Indonesia), W.D. Astuti (Bogor, Indonesia) and G. Yanti (Bukittinggi, Indonesia) 415

Ruminants

- Growth performance and rumen development of Jersey calves fed high milk levels in a 60-day lactation program
Lourengo L.A., V.I. Fioreze (Capão do Leão, Brazil), J. Schafhäuser Júnior (Pelotas, Brazil), A.C. Fluck, O.A.D. Costa, G. Fiorentini (Capão do Leão, Brazil), F.A. Rizzo (Caxias do Sul, Brazil), da Rosa P.P. (Capão do Leão, Brazil), A.S. Varela Júnior and R.D. Jardim (Rio Grande, Brazil) 422
- Impact of substituting corn silage with ensiled modified corn WDGS on milk yield, composition, cow health, and production economics
Roguski M., M. Zielińska-Górska, W. Bendowski, T. Niemiec, K. Piotrowska, D. Żyłowski and A. Łozicki (Warsaw, Poland) 430
- Evaluation of silage quality, rumen fermentation dynamics, degradability, and methane emissions of total mixed rations formulated from agricultural by-products: an *in vitro* analysis
Ridla M., A. Jayanegara and Nahrowi Nahrowi (Bogor, Indonesia) 442
- In vitro* ruminal degradation kinetics of alfalfa silage with the addition of dry ice and different degrees of wilting
Borsuk-Stanulewicz M., C. Purwin, S.W. Przemieniecki and I. Białobrzewski (Olsztyn, Poland) 451
- Effect of cultivar and the number of harvests on the feed value, protein fractions and nutrient digestibility of *Festulolium braunii* forage in young cattle
Borsuk-Stanulewicz M., C. Purwin, P. Pogorzelska-Przybyłek (Olsztyn, Poland), B. Stefańska (Poznań, Poland), A. Winiarska-Mieczan (Lublin, Poland) K. Jachimowicz-Rogowska and J. Michalski (Jabłonna, Poland) 461

Other topics

- The effects of a 1.5-year-long dietary inclusion of white lupin meal (*Lupinus albus*) on the Siberian sturgeon (*Acipenser baerii*)
Szczepański A., D. Adamek-Urbańska, R. Kasprzak, W. Cieśla, H. Szudrowicz (Warsaw, Poland), I. Piotrowska, P. Gomułka, K. Kawalski, J. Martynow (Olsztyn, Poland), B. Łosiewicz, P. Bujarski, R. Wild (Warsaw, Poland), M. Kozłowski (Olsztyn, Poland), J. Śliwiński and M. Kamaszewski (Warsaw, Poland) 476

Editorial news and events

- 70th Anniversary of the Kielanowski Institute of Animal Physiology and Nutrition, Polish Academy of Sciences 491

Vol. 34, No. 4, 2025**Review**

Evaluating the potential of fermented concentrate feeds on lamb growth performance: A meta-analysis

Gao M. (Hohhot, China), A. Irawan (Surakarta, Indonesia), R.Q. Li (Hohhot, China), M. El-Sherbiny (Giza, Egypt), M. Szumacher-Strabel, A. Cieślak (Poznań, Poland), Y.R. Yanza (Jatinangor, Indonesia), M. Ryczek (Poznań, Poland), M. Abdelrahman (Asyut, Egypt) and Y.-B. Liu (Hohhot, China) 501

Bioactive compounds in sheep milk: The therapeutic potential of CLA, lactoferrin, and orotic acid in skin cancer treatment

Flis Z., A. Ptak, P. Szatkowski (Krakow, Poland), Czauderna M. (Jabłonna, Poland) and E. Molik (Krakow, Poland) 519

Pumpkin as a natural feed additive in livestock production: A review

Siudak Z. (Balice, Poland), S. Pałka (Kraków, Poland) and D. Kowalska (Balice, Poland) 526

Animal physiology

QRFP43 modulates somatotrophic axis activity in female sheep

Szlis M., B.J. Przybył and A. Wójcik-Gładysz (Jabłonna, Poland) 549

Short communication

Effectiveness of selected methods for manipulating the oestrus cycle and ovulation in mares during the breeding season: A retrospective clinical study

Ryszka W., N. Kurek (Glinno, Poland), K. Michlik-Półczyńska, N. Sowińska and R. Kozdrowski (Poznań, Poland) 562

Monogastrics

Effect of dietary inclusion of infertile egg powder on carcass characteristics and meat quality in broiler chickens

Suprayogi W., A. Ratriyanto, A. Irawan, L.R. Kartikasari and N. Akhirini (Surakarta, Indonesia) 569

Effects of *Sida hermaphrodita* leaf meal on growth performance, carcass quality and gastrointestinal tract development in broiler chickens

Mazur-Kuśnerek M., M. Baranowska, K. Lipiński and C. Purwin (Olsztyn, Poland) 577

Supplementary carbohydrase enzymes increase energy and nutrient availability of diets containing stinging nettle (*Urtica dioica*) when fed to laying hens

Pirgozliev V., I.M. Whiting, S.C. Mansbridge (Newport, United Kingdom), K. Kljak (Zagreb, Croatia), S. Enchev (Shumen, Bulgaria), A. Atanasov (Vienna, Austria) and S.P. Rose (Newport, United Kingdom) 586

Nutritional approaches to reduce ammonia and odorous compounds from pig manure

Yoo S.B., Y.S. Song (Seoul, Republic of Korea), S.W. Kim (Raleigh, USA) and B.G. Kim (Seoul, Republic of Korea) 593

Effect of boar line on fattening performance and carcass and meat quality of Złotnicka White pigs

Szulc K. (Złotniki, Poland), M. Szyndler-Nędza, M. Tyra (Balice, Poland), D. Lisiak (Poznań, Poland), A. Kurtenkov (Sofia, Bulgaria), J. Nowicki (Poznań, Poland) and S. Nowaczewski (Złotniki, Poland) 603

Ruminants

Probiotics isolated from traditional fermented products of the Tibetan Plateau as a substitute for antibiotic feed additives in lamb breeding

Ye Z., Y. Niu, W. Yang, B. Ji, Y. Peng, J. Song, C. Xiang and Z. Wang (Lanzhou, China) 613

Effects of ensiled wheat straw with brewer's spent yeast on milk production and nutrient utilisation in dairy cows

Terefe G. (Addis Ababa, Ethiopia), J. Sznajder, J. Szczesny (Poznań, Poland), B. Mekonnen (Addis Ababa, Ethiopia), P. Sidoruk, M. (Poznań, Poland), Walelegn (Addis Ababa, Ethiopia), G. Kitaw (Addis Ababa, Ethiopia), M. Faji, M. Dejene, E. Yadessa (Addis Ababa, Ethiopia), S. Olorunlowu, R. Steppa, T. Pelec (Poznań, Poland), G. Min (Hohhot, China), A. Irawan (Surakarta, Indonesia), Y. Rizki Yanza (Padjadjaran, Indonesia), A. Kumar Patra (Oklahoma, USA), M. Szumacher-Strabel and A. Cieślak (Poznań, Poland) 626

Effects of soybean lecithin supplementation on ruminal fermentation, polysaccharide hydrolase activity, and nutrient digestion in sheep

Liu J.C., X.L. Xu, H.L. Zhang, Y. Chen, M.Y. Fang (Urumqi, China) and A.M. Shah (Xianyang, China) 635

Effect of polyol supplementation in forage-based total mixed rations on *in vitro* rumen gas production and fermentation in beef cattle

Yılmaz K. (Sivas, Türkiye), K. Kara, S. Yılmaz Öztaş (Kayseri, Türkiye), G. Pirci (Kırıkkale, Türkiye), Ö. Aslan (Kayseri, Türkiye) and Y. Soylu (Konya, Türkiye) 644

Effects of yeast preparation on *in vitro* rumen fermentation of low-concentrate substrate

Lin L., J. Luan, X. Feng and Ch. Geng (Yanji, China) 651

List of reviewers 659

Authors index 660

Contents of Journal of Animal and Feed Sciences, Volume 34 664