



## Contents

Volume 26, No. 1–4, 2017

Vol. 26, No. 1, 2017

### Review

Conjugated linolenic acid (CLnA) isomers as new bioactive lipid compounds in ruminant-derived food products.

A review

Bialek M., M. Czuderna (Jabłonna, Poland) and A. Bialek (Warsaw, Poland) .....

### Ruminants

The effect of dietary supplementation with  $\beta$ -1,3/1,6-D-glucan on stress parameters and meat quality in lambs  
Sowińska J., S. Milewski, Z. Tański, D. Witkowska, K. Ząbek, P. Sobiech and T. Mituniewicz (Olsztyn, Poland) .....

Effects of sucrose, formic acid and lactic acid bacteria inoculant on quality, *in vitro* rumen digestibility and fermentability of drooping wild ryegrass (*Elymus nutans* Griseb.) silage  
Zhang Q. (Guangzhou, P.R. China), H. Yang and Z. Yu (Beijing, P.R. China) .....

Seasonal variation of aflatoxin B<sub>1</sub> content in dairy feed  
Ismail A., M. Riaz, S. Akhtar (Multan, Pakistan), S.H. Yoo, S. Park (Seoul, Republic of Korea), M. Abid, M. Aziz (Multan, Pakistan) and Z. Ahmad (Bahawalpur, Pakistan) .....

### Monogastrics

Effect of an essential oils blend on growth performance, and selected parameters of oxidative stress and antioxidant defence of *Escherichia coli* challenged piglets

Jiang X.R. (Milan, Italy), X.L. Li (Beijing, China), A. Awati, H. Bento (Marlborough, United Kingdom), H.J. Zhang (Beijing, China) and V. Bontempo (Milan, Italy) .....

Impact of increasing crude glycerine levels in diet on growth, carcass traits, body measurements and blood cholesterol in growing Japanese quails

Arif M., Z. Hayat, Sh. Sohail (Sargodha, Pakistan) and M.E. Abd El-Hack (Zagazig, Egypt) .....

Effects of dietary supplementation with Jerusalem artichoke (*Helianthus tuberosus* L.) tubers on growth performance, nutrient digestibility, activity and composition of large intestinal microbiota in rats  
Samal L., V.B. Chaturvedi and A.K. Pattanaik (Izatnagar, India) .....

### Short communications

Rumen microbial fermentation, protozoan abundance and boron availability in yearling rams fed diets with different boron concentrations  
Sizmaz O. (Ankara, Turkey), B.H. Koksal (Aydın, Turkey) and G. Yıldız (Ankara, Turkey) .....

59

3 Effects of ensiling density on chemical and microbiological characteristics of sorghum silage  
Anésio A.H.C., M.V. Santos, L.D. da Silva, R.R. Silveira (Diamantina, Brasil), T.G.S. Braz (Montes Claros, Brasil) and R.C. Pereira (Bom Jesus do Itabapoana, Brasil) .....

65

18 Polyphenol content in cold-pressed cakes of conventional and genetically modified flax as factor affecting stability of the product in different laboratory storage conditions  
Matusiewicz M., I. Kosieradzka, Z. Nowak (Warsaw, Poland), M. Zuk and J. Szopa (Wrocław, Poland) .....

70

### Editorial news and events

Memorial of Professor Janusz Stanisław Keller .....

76

Vol. 26, No. 2, 2017

### Review

Insect proteins as a potential source of antimicrobial peptides in livestock production. A review  
Józefiak A. (Poznań, Poland) and R.M. Engberg (Tjele, Denmark) .....

87

### Ruminants

Organic selenium supplementation improves growth parameters, immune and antioxidant status of newly received beef cattle

Sgoifo Rossi C.A., R. Compiani, G. Baldi (Milano, Italy), M. Muraro (Verona, Italy), J.P. Marden (Marcq-en-Baroeul Cedex, France), R. Rossi, G. Pastorelli, C. Corino and V. Dell'Orto (Milano, Italy) .....

100

Can xylene and chia (*Salvia hispanica* L.) seed extract directly affect basic bovine ovarian cell functions?  
Tarko A., A Stochmalova., S. Hrabovekova, A. Vachanova (Nitra, Slovakia), A.H. Harrath (Riyadh, Saudi Arabia), R. Grossman (Neustadt am Rübenberge, Germany) and A. Sirotnik (Nitra, Slovakia) .....

109

50

Impacts of restricted feeding and realimentation on bone development and plasma concentrations of bone-specific biomarkers in lambs Swelum A.A., I.M. Saadeldin, A.N. Alowaimer (Riyadh, Saudi Arabia), A. Mahmoud (Zagazig, Egypt) and M.A. Abouheif (Riyadh, Saudi Arabia) .....	116	<b>Ruminants</b>	
Selenium supplementation into diets containing carnosic acid, fish and rapeseed oils affects the chemical profile of whole blood in lambs Czauderna M., M. Bialek, K.A. Krajewska (Jabłonna, Poland), A. Ruszczyńska and E. Bulska (Warsaw, Poland) .....	192		
<i>In vitro</i> fermentation, digestibility and methane production as influenced by <i>Delonix regia</i> seed meal containing tannins and saponins Supapong C., A. Cherdthong, A. Seankamsorn, B. Khonkhaeng, M. Wanapat, S. Uriyapongson (Khon Kaen, Thailand), N. Gunun (Ufon Thani, Thailand), P. Gunun (Sakon Nakhon, Thailand), P. Chanjula (Songkhla, Thailand) and S. Polyorach (Bangkok, Thailand) .....	123	<i>In vitro</i> ruminal dry matter and neutral detergent fibre digestibility of common feedstuffs as affected by the addition of essential oils and their active compounds Righi F., M. Simoni (Parma, Italy), A. Foskolos (Aberystwyth, United Kingdom), V. Beretti, A. Sabbioni and A. Quarantelli (Parma, Italy) .....	204
Nutrient composition and <i>in vitro</i> digestion parameters of Jerusalem artichoke ( <i>Helianthus tuberosus</i> L.) herbage at different maturity stages in horse and ruminant Ersahinice A.C. and K. Kara (Kayseri, Turkey) .....	213		
<b>Monogastrics</b>		<b>Monogastrics</b>	
Fast-growing chickens fed with lucerne protein-xanthophyll concentrate: growth performance, slaughter yield and bone quality Kwiatkowska K., M. Kwiecień and A. Winiarska-Mieczan (Lublin, Poland) .....	131	Effects of dietary vitamin E (DL- $\alpha$ -tocopheryl acetate) and vitamin C combination on piglets oxidative status and immune response at weaning Rey A.I., C.J. López-Bote (Madrid, Spain) and G. Litta (Kaiseraugst, Switzerland) .....	226
Quantitative assessment of <i>Yersinia enterocolitica</i> in raw pork meat using real time PCR (qPCR) technique Stachelska M.A. (Łomża, Poland) .....	141	Effect of dietary conjugated linoleic acid (CLA) and thermal processing on fatty acid composition of enriched chicken meat Franczyk-Żarów M., A. Koronowicz (Kraków, Poland), Szymczyk (Balice, Poland), R. Bieżanowska-Kopeć and T. Leszczyńska (Kraków, Poland) .....	236
Changes in chemical composition of rapeseed meal during storage, influencing nutritional value of its protein and lipid fractions Bojanowska M. (Szczecin, Poland) .....	157	The effect of addition of yellow lupin seeds ( <i>Lupinus luteus</i> L.) to laying hen diets on performance and egg quality parameters Rutkowski A., M. Hejdysz, S. Kaczmarek (Poznań, Poland), M. Adamski (Bydgoszcz, Poland), S. Nowaczewski (Poznań, Poland) and D. Jamroz (Wrocław, Poland) .....	247
The influence of expansion control device used during production of different extruded sea bass feeds on pellets quality Kop A. and A.Y. Korkut (Izmir, Turkey) .....	165	The effect of varying levels of high- and low-tannin faba bean ( <i>Vicia faba</i> L.) seeds on gastrointestinal function and growth performance in turkeys Przywitowski M., D. Mikulski, J. Jankowski, J. Juśkiewicz, M. Mikulska and Z. Zduńczyk (Olsztyn, Poland) .....	257
<b>Editorial news and events</b>		<b>Other topics</b>	
Book Review .....	172	Acetate induces anorexia via up-regulating the hypothalamic pro-opiomelanocortin ( <i>POMC</i> ) gene expression in rabbits Liu L., H. Liu, C. Fu, C. Li and F. Li (Shandong, P.R. China) ..	266
Memorial of Professor Jan Kowalczyk .....	174	Effects of cinnamaldehyde and thymol on cytotoxicity, tight junction barrier resistance, and cyclooxygenase-1 and -2 expression in Caco-2 cells Putala H., P. Nurminen and K. Tiihonen (Kantvik, Finland) .....	274
<b>Vol. 26, No. 3, 2017</b>			
<b>Review</b>			
Selected physiological activities and health promoting properties of cereal beta-glucans. A review Suchecka D., J. Gromadzka-Ostrowska, E. Żyła (Warsaw, Poland), J.P. Harasym (Wrocław, Poland) and M. Oczkowski (Warsaw, Poland) .....	183		

Vol. 26, No. 4, 2017

**Review**

- Effects of turmeric rhizome powder and curcumin on poultry production. A review  
Guil-Guerrero J.L. (Almería, Spain), L. Ramos (Quito, Ecuador), J.C. Zúñiga Paredes, M. Carlosama-Yépez, C. Moreno and P. Ruales (Tumbaco, Ecuador) ..... 293

**Ruminants**

- The effect of rolled barley, sodium hydroxide-treated wheat or maize cob silage on digestive enzymes activity in the alimentary tract of dairy cows  
Moharrery A. (Shahrekord, Iran), L. Hymøller and M.R. Weisbjerg (Tjele, Denmark) ..... 303
- Effect of different dietary inclusion levels of whole raw soyabean on ruminal fermentation and nutrient utilisation in Nelore steers  
Cônsolo N.R.B. (São Paulo, Brazil), J.R. Gandra (Dourados, Brazil), R. Gardinal (São Paulo, Brazil), J.E. Freitas Júnior (Bahia, Brazil), C.S. Takiya, F.P. Rennó and A.S.C. Pereira (São Paulo, Brazil) ..... 311

- The effect of Mediterranean thyme (*Thymbra spicata* L. var. *spicata*) volatile oil on fattening performance and ruminal parameters of lamb  
Baytok E., K. Kara (Kayseri, Turkey), T. Aksu (Van, Turkey), B.K. Güçlü (Kayseri, Turkey), S. Özkaya (Isparta, Turkey), N. Denek (Şanlıurfa, Turkey), A. Kamalak (Kahramanmaraş, Turkey), D.A. Kaya, S.E. Önel (Hatay, Turkey) and A. Akçay (Kayseri, Turkey) ..... 319

**Monogastrics**

- Addition of coconut oil to the diet based on maize dried distilled grains with solubles (DDGS) alters miR-122a expression in the pig liver  
Oczkowicz M., K. Pawlina, M. Bugno-Poniewierska and M. Świątkiewicz (Balice, Poland) ..... 326

- Genotype and protein level interaction in growth traits of meat-type quail through reaction norm models  
da Costa Caetano G., F. Fonseca Silva, A. Calderano (Viçosa, Brazil), L. Pinheiro Silva (Fortaleza, Brazil), J. Corrêa Ribeiro (Morrinhos, Brazil), L. Tavares Oliveira (Viçosa, Brazil) and R. Reis Mota (Gembloix, Belgium) .... 333

- Microbial inoculant and an extract of *Trichoderma longibrachiatum* with xylanase activity effect on chemical composition, fermentative profile and aerobic stability of guinea grass (*Panicum maximum* Jacq.) silage  
Gandra J.R., E.R. de Oliveira, R.H.T.B. de Goes, K.M.P. de Oliveira (Dourados, Brazil), C.S. Takiya (Manhattan, USA), T.A. Del Valle (São Paulo, Brazil), H.M.C. Araki, K. Silveira, D. Silva and A.G. Da Silva Pause (Dourados, Brazil) ..... 339

**Short communications**

- Effect of pelleted cereal-based feed for addax antelope (*Addax nasomaculatus*) on feed intake and nutrient digestibility  
Przybyło M., P. Górką, P. Tyl, J. Kański (Kraków, Poland) and A. Kłoska (Chorzów, Poland) ..... 348

- The effect of lingonberry leaves and oak cortex addition to sheep diets on pancreatic enzymes activity  
Majewska M.P., J.J. Pająk, J. Skomiał, R. Miltko and B. Kowalik (Jabłonna, Poland) ..... 354

- Effect of freshwater microalgae *Nannochloropsis limnetica* on the rumen fermentation *in vitro*  
Marrez D.A. (Cairo, Egypt), A. Cieślak (Poznań, Poland), R. Gawad (Giza, Egypt), H.M. Ebeid, M. Chrenková (Nitra-Lužianky, Slovakia), M. Gao, Y.R. Yanza (Poznan, Poland), M. El-Sherbiny (Giza, Egypt) and M. Szumacher-Strabel (Poznań, Poland) ..... 359

- List of reviewers ..... 365  
Authors index ..... 366  
Contents of Journal of Animal and Feed Sciences, Volume 26 ..... 368