

Contents

Review Lecture	
Biotransformation of secondary plant ingredients	16
*S.E. Kulling – Karlsruhe	
Transport and epithelial physiology	
1. Post mortem endpoints of ruminal fermentation and anion/proton transporter gene expression as affected by variations in the amounts of physically effective neutral detergent fibre in the diets of growing German Fleckvieh bulls	17
*D. Brugger, T. Ettle, S. Feser, W. M. Windisch, C. Bolduan – Freising/Poing-Grub	
2. Ruminal absorption of short chain fatty acids as affected by a continuous or interrupted adaptation to a high concentrate diet in dairy cattle	18
*M. Kumar, R. Khiaosa-ard, P. Pourazad, S. Wetzels, F. Klevenhusen, J. Aschenbach, Q. Zebeli – Vienna/Berlin	
3. Functional and molecular biological evidence for the involvement of TRPV3 and TRPA1 in the absorption of cations by the ruminal epithelium	19
*H. S. Braun, K. T. Hille, J. Rosendahl, J. R. Aschenbach, F. Stumpff – Berlin	
4. Challenging the porcine intestinal epithelial barrier function by milk	20
J. Radloff, *S. Amasheh – Berlin	
5. A study of the bovine TRPV3 channel as a candidate protein mediating the ruminal transport of ammonium	21
*K. T. Hille, F. Liebe, I. Rabbani, G. Sponder, F. Stumpff – Berlin/Lahore	
6. Effects of hydrostatic pressure on epithelial cells: approaches to analysis of mechanical force in a mammary gland model, <i>in vitro</i>	22
*K. Mießler, A. G. Markov, C. Vitzthum, S. Amasheh – Berlin/St. Petersburg	
7. Influence of bacterial metabolites on barrier function and pro-inflammatory signalling in epithelial cells <i>in vitro</i>	23
C. Villodre Tudela, K. Tedin, J. Zentek, *R. Pieper – Berlin	
8. Regulation of the mRNA expression of tight junction proteins in sheep ruminal epithelia by incubation with growth factors <i>in vitro</i>	24
*G. Greco, C. Deiner, S. Amasheh, J. R. Aschenbach – Berlin	
9. Effects of short chain fatty acids on cAMP level as indicator of G Protein activity in sheep ruminal epithelium	25
*L. Baaske, F. Masur, G. Gäbel – Leipzig	
Amino acids and nitrogen	
10. Investigations on the nitrogen-to-protein conversion factor in organically produced crops	26
*S. Witten, J. Bokemeyer, K. Aulrich – Westerau	
11. Mathematical description of digestible threonine-response curve in laying hens: A meta-analysis	27
*H. Ahmadi, M. Rodehutschord – Tehran/Stuttgart-Hohenheim	
12. Effect of a low methionine diet on laying performance and egg quality of dual purpose genotypes in comparison to a layer hybrid	28
*S. Mueller, R. E. Messikommer, M. Kreuzer, I. D. M. Gangnat – Zurich	
13. Nitrogen and sulfur containing amino acid concentration in feather and feather-free body protein of fast growing meat type broiler chicken dependent on gender and age	29
*C. Wecke, F. Liebert – Göttingen	

14. The effect of different dietary methionine levels on the growth performance, antioxidant status and tissue biochemical parameters of turkeys	30
*J. Jankowski, M. Kubińska, J. Juśkiewicz, A. Czech, Z. Zduńczyk – Olsztyn/Lublin	
15. Evaluation of <i>Hermetia illucens</i> and <i>Spirulina platensis</i> proteins in semi-synthetic diets for the laboratory rat	31
*A. Brede, C. Neumann, S. Velten, F. Liebert – Göttingen	
16. Nitrogen and methane excretion of cows fed a low crude protein diet with too low content of utilisable crude protein from calving onwards	32
F. Sutter, *A. Schwarm, M. Kreuzer – Lindau/Zurich	
17. Effects of enzyme substitution on endogenous N losses (praecaecal and total) in pancreatic duct ligated minipigs fed a N free diet	33
*J. Kessler, A. Mößeler, M. Beyerbach, J. Kamphues – Hanover	
18. Chemical whole body composition of female chickens of four genetically diverse purebred layer lines reared with increasing dietary L-arginine	34
A. Lieboldt, I. Halle, J. Frahm, L. Schrader, S. Weigend, R. Preisinger, G. Breves, S. Dänicke – Braunschweig/Celle/Neustadt-Mariensee/Cuxhaven/Hanover	
19. Variation of amino acid digestibility of maize grains from different genotypes in caecectomised laying hens	35
*T. Zuber, P. Rosenfelder, M. Rodehutschord – Stuttgart-Hohenheim	
20. Intravenous administration of L-arginine during late-pregnancy influences ovine milk composition in the early post-partum period	36
*Q. Sciascia, D. van der Linden, F. Sales, N. Wards, M. Oliver, H. Blair, S. McCoard – Dummerstorf/Napier/Punta Arenas/Palmerston North/Auckland	
21. Amino acid composition of grass silages containing different levels of true protein in total crude protein	37
*M. Höltershinken, M. Coenen, K. Glöckl, N. Göres, W. Heimbeck, M. Hoedemaker, C. Hunsche, M. Ille, C. Parys, C. Schulte, A. Thomsen, P. Wolf, K. Eicken – Hanover/Leipzig/Hanau/Rostock/Ovelgönne	
22. Marginal dietary methionine concentrations and anti-oxidative status and expression of inflammatory genes in gut and liver of piglets	38
*J. Zeitz, S. Kaltenböck, E. Most, K. Eder – Gießen	
23. Comparison of the praecaecal digestibility of selected amino acids in alfalfa leaf mass (med. Sativa) <i>in vivo</i> and <i>in vitro</i>	39
*H. Sommer, M. Grashorn, A. Sundrum – Kassel/Stuttgart-Hohenheim	
24. Effects of lactic acid bacteria on degradation of amino acids to biogenic amines in fermented liquid feeds	40
*N. Lau, E. Kramer, J. Hummel – Göttingen	
25. Algae, mussels and ragworm as alternative protein sources in diets for rainbow trouts	41
G. Thum, R. Bochert, *P. Wolf, H. Schubert – Börn/Rostock	
Minerals	
26. Selenium speciation in paired serum and cerebrospinal fluid samples of sheep	42
*E. Humann-Ziehank, M. Ganter, B. Michalke – Hanover/Neuherberg	
27. Fetal programming of piglets induced by differential iron supply to pregnant sows	43
*M. Buffler, C. Becker, W. Windisch – Freising	
28. Skeleton health in growing pigs - Investigations on the inter-/intraindividual variation of different bone parameters in pigs of different ages	44
*H. Rieger, C. Ratert, I. Hennig-Pauka, J. Kamphues – Hanover/Vienna	

29. Interactive effects of P, Ca and phytase supplements on InsP6 degradation and net absorption of P and Ca up to the lower ileum of broiler chickens	45
*V. Sommerfeld, M. Schollenberger, I. Kühn, M. Rodehutsord – Stuttgart-Hohenheim/Darmstadt	
30. Effect of dose and source of dietary Copper supplementation on rumen dry matter degradation in non-lactating Holstein cows	46
*M. Hanauer, C. Bolduan, W. Windisch – Freising	
31. Influence of iron supply in pregnant sows on litter size and piglet weight	47
*M. Buffler, C. Becker, W. Windisch – Freising	
32. Zip4-like zinc transporter variability is widespread in pig breeds but not in Göttinger Minipigs and should be considered in experimental Zinc metabolic studies	48
*G. Erhardt, G. Reiner, N. Kemper, H. Simianer, J. Pürstl, R. Bühler, C. Weimann, I. Giambra – Gießen/Halle (Saale)/Göttingen/Griesheim/Wolpertshausen	
33. Effect of varying phosphorus levels in diets of weaned piglets on the bacterial microbiome in colon and faeces	49
*L.- M. Guckenberger, S. Kieckhäven, K. Büsing, P. Wolf – Rostock	
Digestion	
34. Opportunities to reduce the sampling frequency for measurement of duodenal dry matter flow and ruminal microbial crude protein synthesis in dairy cows	50
*D. von Soosten, U. Meyer, L. Hüther, S. Dänicke – Braunschweig	
35. Balance studies on dietary intake and excretion pathways of glyphosate in lactating dairy cows	51
*G. Breves, M. Lahrssen-Wiederholt, H. Schafft, M. Spolders, U. Meyer, S. Dänicke, D. von Soosten – Hanover/Berlin/Braunschweig	
36. Metabolic adaptation in transition dairy cows experiencing different lipolysis early postpartum	52
E. Humer, A. Khol-Parisini, L. Gruber, *Q. Zebeli – Vienna	
37. Methane production of five non-ruminating foregut fermenting mammals	53
*M. Clauss, C. Vendl, S. Frei, M. Dittmann, S. Ortmann, J. Hummel, A. Munn, M. Kreuzer – Zurich	
38. Effect of taurine supplementation on fat (ether extract) digestibility in pigs with experimentally induced pancreatic exocrine insufficiency	54
*A. Möbeler, M. Beyerbach, J. Kessler, B. Ahlfänger, J. Kamphues – Hanover	
39. Apelin and its receptor are expressed in the mandibular gland of growing pigs: influences of different physical forms of the diet on their presence and localization	55
*C. Dall'Aglio, M. G. Cappai, F. Mercati, P. Ceccarelli, J. Kamphues – Perugia/Sassari/Hanover	
40. Comparison of phosphorus digestibility between female and male broiler chickens	56
*K. Schedle, R. Leitgeb, M. Rodehutsord – Vienna/Stuttgart-Hohenheim	
41. Effect of the origin (oat, barley, spelt and buckwheat) on praecaecal digestibility of raw starch in pigs with experimentally induced pancreatic exocrine insufficiency	57
*A. Möbeler, J. Kessler, B. Ahlfänger, J. Kamphues – Hanover	
42. Impact of soybean protein on ruminal phenolic content by feeding grass silages containing different levels of true protein <i>in vitro</i>	58
*N. Göres, K. Glöckl, C. Hunsche, M. Ille, C. Schulte, A. Thomsen, M. Hoedemaker, M. Höltershinken – Hanover	
43. Studies on the metabolism of amines when feeding grass silage containing different levels of true protein and the influence of soybean meal using the RUSITEC-System	59
*A. Thomsen, N. Göres, M. Ille, K. Glöckl, C. Hunsche, C. Schulte, M. Hoedemaker, M. Höltershinken – Hanover	

44. A new scope for rumen simulation technique (RUSITEC): <i>in vitro</i> investigation of specific ruminant xenobiotic metabolism by using ovine rumen fluid	60
*A. Staehle, B. Birk, M. Meier, D. Funk, N. Sauer, G. Breves, H. Seulberger – Limburgerhof/Hanover	
45. Effect of unconventional oilseeds provided at two lipid concentrations on rumen fermentation and methane formation <i>in vitro</i>	61
*S. Wang, M. Kreuzer, A. Schwarm – Zurich	
46. Reticuloruminal pH dynamics in early lactating dairy cows experiencing different lipolysis	62
*E. Humer, A. Khol-Parisini, L. Gruber, Q. Zebeli – Vienna	
47. Size-dependent particle retention in the gastrointestinal tract of equids? A non-invasive approach	63
*J. Hummel, F. Scheurich, M. Gerken, S. Ortmann, M. Clauss – Göttingen/Berlin/Zurich	
48. Preparation of boluses for administration of dietary markers to horses and investigations on their suitability	64
*M. Bachmann, M. Wensch-Dorendorf, M. Wulf, M. Glatter, M. Siebmann, C. Bierögel, E. Schumann, M. Bulang, C. Aurich, A. Zeyner – Halle (Saale)/Vienna/Merseburg	
49. Use of synthetic alkane waxes as single- or multi-component dietary markers in farm animals	65
*M. Bachmann, M. Wensch-Dorendorf, K. Mäder, M. Bulang, A. Zeyner – Halle (Saale)	
50. The effect of methane on properties of digestive physiology in dairy cow	66
M. Dittmann, K. Hammond, P. Kirton, D. Humphries, L. Crompton, S. Ortmann, T. Misselbrook, K.-H. Südekum, A. Schwarm, M. Kreuzer, C. Reynolds, *M. Clauss – Zurich/Reading/Berlin/North Wyke/Bonn	
51. Characterisation of the structural and functional diversity of the rumen microbiota in dairy cows	67
*J. Seifert, S. Deusch, A. Camarinha-Silva, J. Conrad, M. Rodehutschord – Stuttgart-Hohenheim	
52. Evidence for restored ruminal fibre degradation in response to a long-term subacute ruminal acidosis challenge	68
*R. Khiaosa-ard, P. Pourazad, B. Metzler-Zebeli, M. Kumar, S. Wetzels, F. Klevenhusen, Q. Zebeli – Vienna	
53. Spatial variation in the gut microbiota of broiler chickens fed diets supplemented or not with calcium, phosphorus and phytase	69
D. Borda-Molina, M. Vital, V. Sommerfeld, M. Rodehutschord, *A. Camarinha Silva – Stuttgart-Hohenheim/Braunschweig	
54. Digestibility of calcium and phosphorus in fattening pigs (finishers) fed exclusively with whole-plant corn silage vs. compound feed	70
*S. Hohmeier, C. Ratert, J. Kamphues – Hanover	
55. Sulphur and Sulphate contents in the digesta of chicken related to dietary intake	71
*J. Zimmermann, A. Abd El-Wahab, M. Kölln, J. Kamphues – Hanover/Mansoura	
56. Influences of differently processed feather meal in diets for dogs on nutrient digestibility and faecal quality	72
L. Zeiger, *F. von und zur Mühlen, J. Kamphues – Hanover	
57. Trace element balances with different Cu-, Zn- and Se-supply in horses at maintenance	73
*L. Neustädter, A. Mößeler, J. Kamphues – Hanover	
Feed additives	
58. Effect of BioPlus® YC (<i>Bacillus subtilis</i> and <i>Bacillus licheniformis</i>) supplementation in diets with low- and high-protein content on intestinal microbiota composition of growing pigs	74
*C. Kaewtapee, P. Rosenfelder, T. Hartinger, S. Heinritz, J. N. Jørgensen, R. Mosenthin – Stuttgart-Hohenheim/Hoersholm	

59. Effects of amylase and protease supplementation on rumen starch degradation in non-lactating Holstein cows fed a maize-based diet	75
*M. Deml, C. Bolduan, W. Windisch – Freising	
60. Effects of malate at different pH on ruminal fermentation in an artificial rumen (RUSITEC)	76
*A. Demirtas, H. Ozturk, Y. Salgirli Demirbas, I. Piskin, M. B. Emre – Burdur/Ankara	
61. Effects of propolis on ruminal fermentation in an artificial rumen (RUSITEC)	77
*H. Öztürk, M. Pekcan, M. Sireli, U. R. Fidanci – Ankara	
62. Effects of chronic feeding of quercetin on growth performance of rainbow trout and common carp	78
F. Ansari, *R. Blank, S. Wolffram – Kiel	
63. Effects of chronic feeding of quercetin on antioxidant enzyme systems of rainbow trout and common carp	79
F. Ansari, *R. Blank, S. Wolffram – Kiel	
64. Effects of chronic feeding of quercetin on body composition of rainbow trout and common carp	80
F. Ansari, *R. Blank, S. Wolffram – Kiel	
65. Influence of added oregano oil in wheat based diets on laying performance and microbial parameters of excreta	81
*A. Sünder, J. Wäsche, J. Schäfer, F. Liebert – Göttingen	
66. Influence of a yeast cell wall product on immunological traits of broiler chickens	82
*H. Vodde, J. Aka, J. Zentek – Berlin/Essen	
67. Variation of carbohydrate content and degree of polymerization along the equine gastrointestinal tract	83
*M. Glatter, D. Hillegeist, M. Bochnia, J. Greef, P. Wolf, G. Breves, A. Zeyner – Halle (Saale)/Braunschweig/Rostock/Hanover	
68. Impact of high dietary zinc concentrations on the horizontal antibiotic resistance gene transfer between enterobacteria in the intestine of gnotobiotic mice	84
L. Rabes, S. Günther, M. G. Doherr, L. H. Wieler, *G. Loh – Berlin/Karlsruhe	
69. Probiotic supplementation with <i>Enterococcus faecium</i> NCIMB 10415 modulates the effects of an enterotoxigenic <i>Escherichia coli</i> strain on intestinal barrier function and TNF-α expression	85
*M. Kern, J. R. Aschenbach, K. Tedin, U. Lodemann – Berlin	
70. Comparison between an <i>in vitro</i> method (Rostock fermentation test) and glass jar model silages to predict forage ensilability	86
B. Pieper, *S. Hoedtke, P. Wolf, A. Zeyner – Wuthenow/Rostock/Halle (Saale)	
71. Effects of a clinoptilolite supplementation on rumen fermentation <i>in vitro</i>	87
*S. Kallmeyer, M. Hoedemaker, M. Höltershinken – Hanover	
72. Effects of a monensin-releasing capsule and a blend of essential oils on white blood cell profile and function of periparturient dairy cows	88
*C. Drong, U. Meyer, D. von Soosten, J. Frahm, J. Rehage, S. Dänicke – Braunschweig/Hanover	
73. Effects of peripartal energy supply and nicotinic acid supplementation on functional activity and gene expression of blood leukocytes and on anti-oxidative enzyme activity in serum of periparturient dairy cows	89
*S. Bühler, J. Frahm, R. Tienken, S. Kersten, S. Dänicke – Braunschweig	

74. Different dietary levels of NSP-degrading enzymes: effects on physico-chemical properties of digesta, excreta as well as on foot pad health of broilers	90
H. Weiß, *M. Kölln, R. M. Neto, J. Kamphues – Hanover/Antony	
75. Influences of different dietary levels of Mannan-degrading enzymes on performance, occurrence of <i>C. perfringens</i> in small intestine contents, as well as on excreta/litter quality and foot pad health in broilers	91
*B. Schiel, C. Ratert, B. Keller, M. Beyerbach, J. Kamphues – Hanover	
76. Relative efficacy of bentonite-montmorillonite and dried yeast cells as biosystemic sequestering agents at high dietary aflatoxin load in turkey poults	92
*D. Akinde, A. Oyegunwa, S. Etop, E. Ewuola, A. Agboola, E. Iyayi – Lohne/Ibadan	
77. Zootechnical and gastrointestinal effects of brown algae <i>Laminaria saccharina</i> in weaned piglets	93
*C. Becker, C. Bolduan, C. Pinna, J. Zhao, W. Windisch – Freising/Bologna	
78. Influence of DON (Deoxynivalenol) on the piglets immune system with due regard to sodium sulfite decontaminated feed. <i>Ex vivo</i> results in the LPS challenge	94
*A. T. Tran, G. Pistol, M. Paulick, J. Kluess, J. Frahm, S. Dänicke – Braunschweig/Ilfov	
79. Influence of dietary Quebracho tannin extract on the fatty acid composition of milk fat in dairy cows	95
*A. Henke, U. Dickhöfer, E. Westreicher-Kristen, M. Hasler, K. Knappstein, J. Molkenkin, M. Meeder, A. Susenbeth – Kiel/Stuttgart-Hohenheim	
80. Combined effect of essential oils and biotin on body condition and serum markers of energy metabolism in transition dairy cows	96
*J. Hausmann, C. Deiner, I. Immig, A. Starke, J. R. Aschenbach – Berlin/Kaiseraugst/Leipzig	
81. Supplementation of dairy cows with conjugated linoleic acid: effects on the mRNA abundance of genes related to protein synthesis and proteolysis in the skeletal muscle	97
*Y. Yang, J. Rehage, S. Dänicke, H. Sauerwein, H. Sadri – Bonn/Hanover/Braunschweig	
Other topics	
82. Cluster analysis of abundance of total bacteria in the rumen of bulls after fattening with varying structural value of diets	98
*E. Zißler, W. Windisch, T. Ettle, C. Bolduan – Freising/Poing-Grub	
83. Rumen protozoal numbers in dairy cows fed total mixed ration or grazing	99
*S. Künzel, M. Schären, U. Meyer, D. von Soosten, S. Dänicke, H. Steingaß, M. Rodehutschord – Stuttgart-Hohenheim/Braunschweig	
84. Effect of glyphosate residues in animal feed on rumen pH-value, short chain fatty acids and rumination time of dairy cows	100
*J. Semenow, K. Schnabel, R. Schmitz, D. Von Soosten, L. Hüther, U. Meyer, A. Zeyner, S. Dänicke – Braunschweig/Halle (Saale)	
85. Evaluating factors affecting the accuracy of determination of silage particle size using a forage particle separator	101
*S. Hoedtke, S. Rüsche, P. Wolf – Rostock	
86. Effect of dietary beta-carotene supplementation during the transition phase on colostrum quality of cows and incidence of diarrhea in calves	102
*E. Eisen, K. Daubinger, I. Immig, A. Einberger, B. Paulicks, W. Windisch – Burgheim/Basel/Freising-Weihenstephan	
87. Hypoglycin A in bodyfluids of horses with atypical myopathy and their cograzing partners	103
*M. Bochnia, J. Ziegler, J. Sander, S. Schaefer, A. Uhlig, M. Glatzer, S. Recknagel, G. F. Schusser, S. Abel, M. Wensch-Dorendorf, A. Zeyner – Halle (Saale)/Hanover/Leipzig	

88. Immunohistochemical localization of zinc sensing receptors in close proximity to CD3+ T-cells in the pig intestinal tract	104
*M. Schweiger, M. Steffl, K. Huber – Stuttgart-Hohenheim	
89. Postprandial kinetics of bacterial ecology parameters in the terminal ileum of pigs fed soybean meal or differentially processed blue sweet lupins	105
*R. Pieper, W. Vahjen, M. Taciak, E. Swiech, M. Barszcz, J. Skomial, J. Zentek – Berlin/Jablonna	
90. Histological changes of the jejunal wall in elongated small intestine resulting due to an exocrine pancreatic insufficiency (EPI) in pigs	106
*B. Ahlfänger, A. Mößeler, M. Langeheine, R. Brehm, J. Kamphues – Hanover	
91. Kinetic characteristics of Lipopolysaccharide-induced immune response in chicken	107
*M. Leskau, J. Kluess, J. Frahm, I. Halle, L. Hüther, S. Dänicke – Braunschweig	
92. Effects of general anesthesia with propofol, pentobarbital or isoflurane plus propofol treatments on plasma metabolites and hormones in pig	108
*G. Das, A. Vernunft, S. Görs, E. Kanitz, J. Weitzel, K.- P. Brüssow, C. C. Metges – Dummerstorf	
93. Effect of an extra vitamin supply in young pigs with experimentally induced pancreatic exocrine insufficiency on body composition characterized by analysis of the hind leg with MRI technique	109
*A. Mößeler, J. Kühn, M. Schmicke, M. Beyerbach, J. Kamphues – Hanover/Greifswald	
94. Impact of dietary concepts on natural <i>Lawsonia intracellularis</i> infections in finishing boars	110
*C. Visscher, A. Kruse, S. Sander, C. Keller, J. Mischok, R. Tabeling, H. Henne, R. Deitmer, J. Kamphues – Hanover/Uelzen/Dahlenburg-Ellringen/Ingelheim am Rhein	
95. Comparison of DNA- and 16S rRNA based quantification of the porcine intestinal microbiota	111
*W. Vahjen, R. Pieper, J. Zentek – Berlin	
96. Effects of concentrate type and concentrate-to-roughage ratio on protozoa numbers in the Hohenheim gas test	112
*T. Mohr, J. Hummel – Göttingen	
97. Effect of water restriction on microbial biomass in goat faeces	113
*M. R. Ramadhan, R. Joergensen, E. Schlecht – Witzenhausen	
98. Effects of an oral inulin supplementation on trimethoprim/sulfadiazine induced changes of microbial metabolism in the equine caecum	114
*A. Cehak, M. Pez, S. Riede, G. Breves – Hanover	
99. A case report about hypervitaminosis D in alpacas	115
*C. Ratert, M. Kölln, M. Ganter, J. Kamphues – Hanover	
Feedstuff evaluation and feeding	
100. Prediction of starch and crude protein concentration of cereal and pea grains and their incubation residues from ruminal <i>in situ</i> studies using near-infrared spectroscopy	116
*J. Krieg, E. Koenzen, N. Seifried, H. Steingäß, M. Rodehutsord – Stuttgart-Hohenheim	
101. Impact of sainfoin and birdsfoot trefoil on <i>in vitro</i> ruminal microbial protein synthesis	117
A. Grosse Brinkhaus, *F. Dohme-Meier, G. Bee, M. Kreuzer, J. O. Zeitz – Posieux/Zurich/Gießen	
102. Effects of replacing molassed dried sugar beet pulp for maize in concentrate-rich diets of dairy cattle on ruminal fermentation <i>in vitro</i>	118
*M. Münnich, A. Khol-Parisini, Q. Zebeli – Vienna	
103. Measuring the linear buffering capacity in fibre rich feed sources	119
*J. Braach, K. Schedle, M. Gierus – Vienna	

104. Different feeding intensities during the first four weeks of rearing in dairy calves: Part 2: Effects on the metabolic and endocrine status around the first lactation	120
J. Kesser, M. Korst, *C. Koch, F. J. Romberg, J. Rehage, M. Schmicke, K. Eder, H. M. Hammon, U. Müller, H. Sauerwein – Bonn/Münchweiler a.d. Alsenz/Hanover/Gießen/Dummerstorf	
105. Comparison of feed intake patterns of sport ponies vs warmblood type horses following iso-energetic intake of three differently confected commercial concentrate feeds	121
*M. Bochnia, M. Boesel, L. Bahrenthien, M. Wensch-Dorendorf, A. Zeyner – Halle (Saale)	
106. Chewing frequency and moved distances of warmblood-type horses all-day grazing on an extensive pasture	122
*M. Bochnia, S. Schaefer, K. Simroth, M. Glatter, F. Goetz, M. Boesel, M. Bachmann, A. Zeyner – Halle (Saale)	
107. Expander processing of maize increases digestibility of nutrients and hence alters the lysine to energy ratio in diets for fattening pigs	123
*R. Puntigam, K. Schedle, C. Schwarz, E.-M. Lechner, M. Gierus – Vienna	
108. Protein hydrolysates from animal by-products as sustainable protein source. I: Effect of thermal hydrolysis and origin of basic material on protein quality	124
*C. Dietz, F. Liebert, B. Winter – Göttingen/Berlin	
109. Protein hydrolysates from animal by-products as sustainable protein source. II: Protein quality of industrial scale processed products	125
*C. Dietz, F. Liebert, B. Winter – Göttingen/Berlin	
110. Influence of soaking and germination before ensiling on the buffering capacity and content of water soluble carbohydrates in Jack bean and cowpea grains	126
L. A. Gonzáles, S. Hoedtke, A. Castro, P. Wolf, A. Zeyner – Rostock/Halle (Saale)	
111. Influence of an increasing content of field pea (<i>Pisum sativum L.</i>) and or field beans (<i>Vicia faba L.</i>) in the feed on the growth of broiler chickens	127
*I. Halle – Braunschweig	
112. Effect of technical feed treatment on performance and the digestive tract of broilers	128
*W. Liermann, A. Berk, V. Böschen, A. Bartels, S. Dänicke – Braunschweig	
113. <i>In situ</i> ruminal starch and crude protein degradation of barley, rye and triticale grains	129
*J. Krieg, N. Seifried, H. Steingäß, M. Rodehütschord – Stuttgart-Hohenheim	
114. Substitution of concentrates by sugar-rich hay in the diet affects ruminal ammonia concentration and nutrient digestibility in Holstein cows	130
*M.-T. Kleefisch, F. Klevenhusen, E. Humer, I. Kröger, Q. Zebeli – Vienna	
115. The effects of microbial fermentation and enzymatic pre-digestion of pea on performance and nutrient digestibility in broilers	131
*F. Goodarzi Borojeni, M. Senz, K. Kozłowski, K. Männer, D. Rose, J. Zentek – Berlin/Olsztyn	
116. Effects of a varying structural value of diets for fattening bulls on feed intake and fattening performance	132
*T. Ettle, W. Windisch, H. Spiekers, A. Obermaier, – Poing-Grub/Freising-Weihenstephan	
117. Effects of ethyl esters on preference behaviour of goats	133
*K. Gerlach, R. Scherer, L. Laudenberg, K. Weiß, K.-H. Südekum – Bonn/Berlin	
118. Partitioning of dietary nitrogen in lactating dairy cows fed different proportions of red clover silage in the diet	134
*F. Schulz, E. Westreicher-Kristen, K. Knappstein, J. Molkentin, A. Susenbeth – Kiel	
119. Effect of feeding differently processed peas on lymphocyte subpopulations of the gut-associated lymphoid tissue in broilers	135
*I. Röhe, F. Goodarzi Borojeni, J. Zentek – Berlin	

120. A new grinding technology for soybean byproducts in broiler diets: effects on performance, excreta and litter quality as well as on foot pad health	136
*A. Heuermann, M. Kölln, T. Jackisch, J. Kamphues – Hanover/Hamburg	
121. An artificial infection of weaned piglets with a defined <i>E. coli</i> strain (F4, STI, STII, LTI) and its effect on intestinal secretion and absorption of electrolytes	137
*F. von und zur Mühlen, S. J. Sander, J. Verspohl, J. Kamphues – Hanover	
122. Effects of different dietary protein sources on performance, litter quality and foot pad health in broilers	138
A. Abd El-Wahab, *C. Visscher, J. Hankel, M. F. E. Ahmed, J. Kamphues – Mansoura/Hanover	
123. Effects of <i>ad libitum</i> milk intake on sucking behaviour, performance and faeces quality in calves within first days of life	139
*L. Zirpins, L. Borgelt, K. Parr, A. Deininger, P. Wolf – Dummerstorf/Wüsting/Rostock	
124. Systems for evaluation of structural effectiveness of mixed rations for dairy cows - an on farm comparison	140
A. Behrendt, D. Albers, A. R. Sharifi, *J. Hummel – Göttingen/Ovelgönne	
125. Different feeding intensities during the first four weeks of rearing in dairy calves: Part 1: Effects on performance and production from birth over the first lactation	141
M. Korst, *C. Koch, J. Kesser, F.- J. Romberg, J. Rehage, K. Eder, H. Sauerwein – Münchweiler a.d. Alsenz/Bonn/Hanover/Gießen	
Energy	
126. Impact of the first calving on mitochondrial DNA copy number and on mitochondrial enzyme activities in subcutaneous adipose tissue of dairy cows	142
L. Laubenthal, M. Hoelker, J. Frahm, S. Dänicke, K. Gerlach, K.- H. Südekum, *H. Sauerwein, S. Häussler – Bonn/Braunschweig	
127. Energy metabolism determined by indirect calorimetry during the first week of life in calves fed either colostrum or formula	143
*C. Schäff, J. Gruse, M. Derno, H. Hammon – Dummerstorf	
128. Effects of conjugated linoleic acids (CLA) and Vitamin E on fat depot mass changes in periparturient dairy cows	144
*D. von Soosten, S. Schäfers, J. Kluess, U. Meyer, A. Tröscher, C. Raschka, J. Rehage, S. Dänicke – Braunschweig/Lampertheim/Hanover	
129. Effects of intensive milk feeding and butyrate on metabolic and endocrine traits in blood and growth performance in German Holstein calves	145
*D. Friten, C. Gerbert, C. Koch, G. Dusel, K. Eder, H. Hammon – Bingen/Münchweiler/Gießen/Dummerstorf	
130. Interrelation between activation and proliferative response of blood leukocytes as well as the energy status in high-yielding dairy cows around calving	146
S. Meese, S. Ulbrich, H. Bollwein, R. Bruckmaier, O. Wellnitz, M. Kreuzer, M. Röntgen, U. Gimsa, *A. Schwarm – Zurich/Bern/Dummerstorf	
Environment	
131. Association between body fat mobilization in early lactation and methane emission from Holstein dairy cows	147
A. Bielak, M. Derno, A. Tuchscherer, A. Susenbeth, *B. Kuhla – Dummerstorf/Kiel	
132. Heat stress effects hepatic gluconeogenesis of late-gestation dairy cows	148
*F. Koch, O. Lamp, B. Kuhla – Dummerstorf	
133. Pure flavonoids and their influence on ruminal methanogenesis and fermentation as determined <i>in vitro</i>	149
*S. Sinz, C. Kunz, F. Leiber, A. Liesegang, M. Kreuzer, C. Soliva – Zurich/Frick	

134. Effects of feeding diets differing in starch and fibre content with or without linseed supplementation on methane emission and milk fatty acids in dairy cows - first results	150
W. Engelke, G. Das, M. Derno, B. Kuhla, C. C. Metges – Dummerstorf	
Undesirable substances	
135. Effects on the acute phase reaction (APR) in lipopolysaccharide (LPS)-stimulated pigs pre-exposed with deoxynivalenol (DON)	151
*T. Tesch, E. Bannert, J. Kluess, J. Frahm, S. Kersten, L. Renner, S. Kahlert, H.- J.Rothkötter, S. Dänicke – Braunschweig/Magdeburg	
136. Effects of a lipopolysaccharide (LPS) stimulus in pigs chronically exposed to dietary deoxynivalenol (DON): Metabolic and haematological consequences	152
*E. Bannert, T. Tesch, J. Kluess, J. Frahm, S. Kersten, S. Kahlert, L. Renner, H.- J. Rothkötter, S. Dänicke – Braunschweig/Magdeburg	
Fatty acids	
137. Performance and fatty acid profile in milk and digesta of dairy cows fed a total mixed ration with reduced essential fatty acid content	153
*C. Weber, A. Tröscher, H. Kienberger, M. Rychlik, H. Hammon – Dummerstorf/Lampertheim/Freising	
138. Influence of partial replacement of fat by distilled palm kernel fatty acids (PKFAD) in a complete diet on the lauric acid content in the gastrointestinal tract of broiler chicken	154
*J. Hankel, J. Senkpiel, K. Zeiger, J. Popp, D. Meemken, C. Visscher – Hanover	
139. Effect of conjugated linoleic acids on metabolism of tocopherol in lactating rats and tissue tocopherol concentrations in their offspring	155
*J. Zeitz, E. Most, K. Eder – Gießen	
140. Influence of conjugated linoleic acids (CLA) and vitamin E on the energy metabolism of transitional dairy cows	156
*S. Schäfers, U. Meyer, D. von Soosten, J. Frahm, J. Kluess, A. Tröscher, A. Zeyner, S. Dänicke – Braunschweig/Lampertheim/Halle (Saale)	
141. Maternal supplementation with fish oil improves insulin sensitivity and up-regulates PPARγ gene expression in the liver of post-weaned rabbits	157
*M. Maranesi, L. Menchetti, C. Boiti, M. Grassi, C. Dall'Aglio – Perugia/Tunis	
Workshop: Grain used in animal feed – Insights and Perspectives	
WS1 Chemical processing of cereal grains in ruminant nutrition: between tradition and innovation	158
*Q. Zebeli., E. Humer – Vienna	
WS2 Fermentation of grain: potentials in pig nutrition	161
K. Schedle* – Vienna	
WS3 Cereal grains as source of protein and amino acids in livestock feeding	163
*M. Rodehutscord, J. Krieg, P. Rosenfelder, N. Seifried, H. Steingäß, T. Zuber, R. Mosenthin – Stuttgart-Hohenheim	
WS4 Upgrading of cereals by means of hydrothermal pressure treatments	166
* H. Graf von Reichenbach – Düsseldorf	
Index	170