

Contents

Review-Lecture	
Linking post-absorptive metabolism of amino acids and ration formulation in dairy cows	16
H. Lapiere and D.R. Ouellet	
Digestion	
1. Effects of pancreatic exocrine insufficiency (with or without pancreatic enzyme therapy) on ileal and faecal microbiota of ileo-caecal fistulated minipigs	26
*Möbeler A., Vital M., Rath S., Handl S., Schulten L., Kamphues J. – Hanover/Braunschweig/Vienna	
2. Influences of different feather meal in diets for dogs on praecaecal and total tract digestibility of nutrients – a study using dogs and ileo-caecal fistulated Göttingen mini-pigs	27
*Schulten L., Möbeler A., Kölln M., Kamphues J. – Hanover	
3. Influence of formula-feeding and Clostridium difficile-infection on intestinal microbiota composition and the abundance of antibiotic resistance genes in neonatal piglets	28
*Pieper R., Dadi T., Grzeskowiak L., Schwarz S., Martínez-Vallespín B., Pieper L., Vahjen W., Franke A., Reinert K., Zentek J. – Berlin/Kiel	
4. Effect of the gradual replacement of grains with bakery products on ruminal fermentation, nutrient degradation and microbiome <i>In vitro</i>	29
Kaltenegger A., Zebeli Q., Aditya S., Klevenhusen F., Petri R., *Humer E. – Vienna	
5. Validation of the RumiWatchSystem for measuring chewing activity in dairy cows	30
*Steinmetz M., Hummel J., Meyer U., von Soosten D., Dänicke S. – Braunschweig/Göttingen	
6. Microbial protein formation of different carbohydrates <i>In vitro</i>	31
*Pfau F., Hummel J. – Göttingen	
7. Wheat bran in diets for laying hens: Effect on nutrient digestibility/retention and adaption time	32
*Wanzenböck E., Schedle K., Kneifel W. – Vienna	
8. Studies on occurrence of gastro- and enteroliths in the alimentary tract of adult domesticated ostriches	33
*Schuchmann F., Kamphues J., Pfarrer C. – Hanover	
9. The digestibility of two extruded complete diets for dogs based on either chicken as a conventional protein source or insect meal from <i>Hermetia illucens</i>	34
*Meyer L., Kölln M., Kamphues J. – Hanover	
10. Experimental and laboratory studies on effects of the grinding intensity of feed grain (wheat/barley/rye) on "extract viscosity"	35
*Grone R., Kamphues J., Ratert C., Kölln M., von Felde A., Grone R. – Hanover/Bergen	
11. Effect of dietary lignocellulose on the animal performance and intestinal microbiota in slow growing male chickens	36
*Metzger F., Röhe I., Zentek J. – Berlin	
12. Effect of low feed intake levels on digesta passage and nutrient digestibility in Boran steers	37
*Ali A. I. M., Wassie S. E., Korir D., Goopy J., Merbold L., Butterbach-Bahl K., Dickhoefer U., Schlecht E. – Kassel-Witzenhausen/Göttingen/Stuttgart-Hohenheim/Nairobi	
13. Effect of rearing environment and diet on microbial colonization patterns in neonatal piglets	38
*Pieper R., Martínez-Vallespín B., Grzeskowiak L., Vahjen W., Zentek J. – Berlin	
14. Effect of nitrogen supply, nitrogen source and buffer medium on <i>In vitro</i> rumen gas production and <i>In vitro</i> degradability of different carbohydrates.	39
*Camborda S., Kand D., Selje-Aßmann N., Dickhoefer U. – Stuttgart	

Amino acids and nitrogen

15. Influence of lowering the level of specific amino acids in the diet on the course of an experimental <i>Campylobacter jejuni</i> infection in broilers	40
*Hankel J., Klingenberg L., Brehm R., Langeheine M., Helmbrecht A., Visscher C. – Hanover/Hanau	
16. Protease and phytase supplementation effects on microbiota composition in the ileum and amino acid digestibility in broiler chickens	41
*Hankel J., Klingenberg L., Brehm R., Langeheine M., Helmbrecht A., Visscher C. – Stuttgart/Lampertheim	
17. Growth, plasma metabolites and free amino acid concentrations in low and normal birth weight piglets in the neonatal period	42
*Li Z., Sciascia Q. L., Görs S., Rayatdoost F., Chen W., Tuchscherer A., Metges C. C. – Dummerstorf/Guangzhou City	
18. First investigations on the optimal methionine:cysteine ratio in diets for growing chickens with a <i>Tenebrio molitor</i> press cake as an alternative protein source	43
*Brede A., Sünder A., Wecke C., Liebert F. – Göttingen	
19. L-Valine requirements of broilers in starter period, 0-12 days	44
*Khan D. R., Siebert D., Agostini P. – Schwalbach am Taunus/Lelystad	
20. Effect of low crude protein concentrations and varying glycine and serine concentrations on growth and nitrogen efficiency in broilers	45
*Hofmann P., Siebert W., Naranjo V., *Rodehutschord M. – Stuttgart/Hanau	
21. Effect of a surplus dietary L-arginine supply on the nitrogen metabolism of restrictively fed growing cockerels	46
*Lieboldt M.- A., Halle I., Frahm J., Dänicke S. – Rostock/Braunschweig	
22. Effect of partial dietary replacement of L-methionine by DL-2-hydroxy-4-methylthiobutyrate or DL-methionine on glutathione metabolism and oxidative stress in weaned pigs	47
Rasch I., Görs S., Tuchscherer A., Saremi B., Htoo J. K., *Kuhla B., Metges C. C. – Dummerstorf/Hanau	
23. Different levels of L-Glutamine affect the integrity and viability of the porcine intestinal cell line IPEC-J2, <i>In vitro</i>.	48
*Grzeskowiak L., Collignon L., Vahjen W., Zentek J. – Berlin	
24. Effects of grain species, genotype and starch quantity on the postprandial plasma amino acid response in horses	49
Bachmann M., Czetoř A., Romanowski K., Vernunft A., Wensch-Dorendorf M., Wolf P., Metges C. C., *Zeyner A. – Halle (Saale)/Rostock/Dummerstorf	
25. Amino acid ratios in feather, feather-free and whole body protein of meat-type chickens as related to the recommended ideal dietary amino acid ratio	50
*Wecke C., Sünder A., Liebert F. – Göttingen	
26. Investigations on the amounts of crude protein and amino acids of organically cultivated winter cereals (wheat, rye, and triticale)	51
*Witten S., Aulrich K. – Westerau	
27. Investigations on the role of pancreas in degradation of branched chain amino acids in the pig	52
*Wessels A. G., Solà Oriol D., Franco i Rosselló R., Pérez Hernández F. – Barcelona	
28. Experimental study to test choice preference of diets with different protein levels depending on diet colour and water temperature in <i>Nile tilapia</i>	53
Abd El-Wahab A., *Visscher C., Teitge F., Steinhagen D. – Mansoura/Hanover	
29. Influence of a constant lysine arginine ratio in gradually crude protein reduced diets on performance and foot pad health in broilers	54
Ullrich C., Siebert D., *Visscher C. – Hanover/Schwalbach	

30. Response of piglets and fattening pigs to amino acid optimization of mixed diets with 50% replacement of soybean-meal by partly defatted insect meal (<i>Hermetia illucens</i>) or meal from micro algae (<i>Spirulina platensis</i>)	55
*Velten S., Neumann C., Liebert F. – Göttingen	
31. Effects of different dietary cysteine levels on performance and parameters of skin health in growing turkeys	56
*Kabuß V.- L., Kölln M., Helmbrecht A., Meißner J., Beyerbach M., Kamphues J. – Hanover/Hanau	
32. Protein quality of piglet diets with a high inclusion level of algae meal (<i>Spirulina platensis</i>) or insect meal (<i>Hermetia illucens</i>) by graded fortification of dietary amino acid supply	57
*Neumann C., Velten S., Liebert F. – Göttingen	
33. Effect of differently conserved herbage on nitrogen efficiency in dairy cows	58
Böttger C., Dohme-Meier F., Südekum K.- H., *Wyss U. – Bonn/Posieux	
34. Do reduced IGF-1 levels modulate Vitamin D metabolism in young goats?	59
*Firmenich C., Breves G., Muscher-Banse A. – Hanover	
35. Effects of insect meal from <i>Tenebrio Molitor L.</i> on the phospholipid composition and desaturation of fatty acids in the liver of obese rats	60
*Gessner D. K., Meyer S., Most E., Berezina N., Hubert A., Liebisch G., Eder K. – Giessen/Évry/Regensburg	
Environment	
36. Antioxidative and metabolic responses in the jejunum of heat-stressed dairy cows	61
*Koch F., Dirk A., Kuhla B. – Dummerstorf/Greifswald	
37. Effect of hazel (<i>Corylus avellana</i>) leaves on methane and urinary nitrogen emissions by sheep	62
Wang S., Terranova M., Kreuzer M., Marquardt S., Eggenschwiler L., *Schwarm A. – Zurich/Posieux	
38. Grazing biodiverse mountainous pastures with different slopes throughout summer season affects feeding behaviour and diet selection of dairy cows	63
*Koczura M., Verdel V., Bouchon M., Turille G., Berard J., Kreuzer M., Martin B., Farruggia A. – Zurich/Saint Genès Champanelle/Marcenat/Aosta	
39. Measuring methane emissions of cows fed with different concentrate proportions making use of the GreenFeed system	64
*Schäfers S., von Soosten D., Meyer U., Dänicke S. – Braunschweig	
40. Comparison of the quality of methane prediction equations containing a different selection and number of individual or groups of milk fatty acids as explanatory variables	65
*Engelke S. W., Das G., Derno M., Tuchscherer A., Berg W., Kuhla B., Metges C. C. – Dummerstorf/Potsdam	
41. Investigations on the additivity of the effects of polyphenol rich plant extracts in methane mitigation <i>In vitro</i>	66
*Sinz S., Marquardt S., Liesegang A., Kreuzer M. – Zurich	
42. Effect of flooring design (with/without litter/floor heating) in poultry (broiler/turkey) on development of body weight, feed conversion ratio and water to feed ratio	67
*Chuppava B., Visscher C., Kamphues J. – Hanover	
Undesirable substances	
43. Detoxification of deoxynivalenol (DON)-contaminated maize with sodium sulfite (Na₂SO₃) and its impact on performance and mycotoxin plasma concentration in fattening pigs	68
*Bahrenthien L., Kluess J., Berk A., Kersten S., Winkler J., Schatzmayr D., Schwartz-Zimmermann H., Zeyner A., Dänicke S. – Braunschweig/Tulln/Halle	
44. Effects of oral endotoxin administration in heat stressed broilers	69
*Reisinger N., Emsenhuber C., Schatzmayr G., Grenier B. – Tulln	

Energy

- 45. Effects of lactational stage and conjugated linoleic acid supplementation on glucose metabolism during hyperglycemic clamps in dairy cows** 70
Grossen-Rösti L., Kessler E., Tröscher A., Bruckmaier R., *Gross J. – Bern/Lampertheim
- 46. Effects of body condition score and concentrate proportion on fat depot masses in dairy cows during the periparturient period and early lactation** 71
*Bünemann K., von Soosten D., Meyer U., Zeyner A., Dänicke S. – Braunschweig/Halle
- 47. Effects of CLA supplementation on inflammatory and metabolic responses during an intramammary LPS challenge in early lactating dairy cows** 72
*Gross J., Grossen-Rösti L., Héritier R., Tröscher A., Bruckmaier R. – Bern/Lampertheim
- 48. Effect of feeding regime on serum metabolites in neonatal Holstein calves reared with milk replacer from day 3 to 14 post natum** 73
*Lieboldt M.- A., Hölterhinken M., Wolf P. – Rostock/Hanover
- 49. Effects of varying energy concentration of roughage and concentrate levels on feed intake and performance of Simmental cows over two years** 74
*Hertel-Böhnke P., Ettle T., Spiekers H. – Poing/Grub
- 50. Digestive plasticity of roe deer in response to changes in diet energy and diet quality** 75
*Dahl S.- A., Scheingraber M., Windisch W., König A. – Freising/
- 51. New data on renal energy excretion in ponies eating various types of feed** 76
Kuchler M., *Kienzle E. – Oberschleißheim
- 52. Impact of dietary lignocellulose on animal performance and body composition of dual-purpose laying hens during the laying period** 77
*Röhe I., Urban J., Zentek J. – Berlin
- 53. Effects of different energy supply from roughage and concentrates on signs of subclinical ketosis and subacute ruminal acidosis in early lactating cows** 78
*Schmitz R., Schnabel K., von Soosten D., Meyer U., Spiekers H., Rehage J., Dänicke S. – Braunschweig/Poing-Grub/Hanover
- 54. Varying the energy density of the diet by roughage composition and the amount of concentrates: effects on the circulating concentrations of adiponectin in Holstein and in Simmental cows** 79
*Urh C., Denißen J., Ettle T., Meyer U., Schmitz R., Stamer E., Spiekers H., Sauerwein H. – Bonn/Kleve/Poing/Braunschweig/Westensee/Brux
- 55. Effects of intensive milk feeding and butyrate supplementation on sucking behaviour, health and immune status in German Holstein calves** 80
Gerbert C., Frieten D., Koch C., Dusel G., Eder K., Stefaniak T., Jawor P., Bajzert J., Tuchscherer A., *Hammon H. M. – Münchweiler a. d. Alsenz/Bingen/Giessen/Breslau/Dummerstorf
-
- ## Transport and epithelial physiology
- 56. Effect of diet and rearing on jejunal mucosal development, microbiota colonization and immune reactions in neonatal piglets** 81
*Pieper R., Martínez-Vallespín B., Schlosser J., Ebner F., Kühl A., Hartmann S., Zentek J. – Berlin
- 57. Effects of cinnamaldehyde on electrophysiological parameters of the porcine colon *In vitro*** 82
*Manneck D., Schrapers K. T., Stumpff F. – Berlin
- 58. Characterization of an inducible amino acid transporter in the porcine gastrointestinal tract** 83
*Romanet S., Mastrototaro L., Pieper R., Zentek J., Htoo J. K., Saremi B., Aschenbach J. – Berlin/Hanau-Wolfgang

59. Characterization of the bovine TRPV3 channel in <i>Xenopus</i> oocytes	84
*Liebe F., Liebe H., Vitzthum C., Käbmeyer S., Sponder G., Stumpf F. – Berlin	
60. Adaptation mechanisms to hypoxia in glucose transport across lagomorph jejunum epithelium	85
*Dengler F., Rackwitz R., Pfannkuche H., Gäbel G. – Leipzig	
61. Effect of rearing environment and diet on colon bacterial fermentation and barrier function in neonatal piglets	86
*Martínez-Vallespín B., Grzeskowiak L., Zentek J., Pieper R. – Berlin	
62. Exploring the allergenic potential of the absorption enhancer caprate	87
Radloff J., Cornelius V., Falchuk E., Markov A. G., *Amasheh S. – Berlin/Saint Petersburg	
63. Does butyrate have a protective effect on porcine colon epithelium under hypoxia?	88
*Kraetzig A., Gäbel G., Dengler F. – Leipzig	
64. Effects of cholera toxin on the epithelial barrier in rat small intestine	89
Markov A. G., Vishnevskaya O. N., Falchuk E. L., Okorokova L. S., Kruglova N. M., Rybalchenko O. V., *Amasheh S. – St. Petersburg/Berlin	
Minerals	
65. A comparison of faecal and renal phosphorus excretion after excessive intake of monophosphate from calcium and potassium monophosphate in adult cats	90
*Dobenecker B., Schaschl C., Webel A., *Kienzle E. – Oberschleißheim	
66. Genetic selection on high daily egg mass production improved the utilization of dietary calcium for egg synthesis in laying hens	91
*Lieboldt M.- A., Sievers H., Halle I., Hütther L., Dänicke S. – Rostock/Braunschweig	
67. Cluster analyses on the adaption of zinc reservoirs in weaned piglets challenged with short-term finely-graded reduction in dietary zinc supply	92
*Brugger D., Windisch W. – Freising	
68. Investigations on solubility of dietary phosphorus in water and acid medium from foods and mineral sources in companion and food producing animal nutrition	93
*Lineva A., Kienzle E., Dobenecker B., Kirchner R., Kamphues J. – Oberschleißheim	
69. A simple indicator for phosphorus availability in growing pigs	94
*Böswald L., Kienzle E. – Oberschleißheim	
70. Correlations between different criteria of bone ash and phosphorus utilization in Japanese quail	95
*Künzel S., Beck P., Bennewitz J., Rodehutschord M. – Stuttgart	
71. Short-term kinetics of tissue zinc exchange in ⁶⁵Zn-labelled adult rats receiving sufficient dietary Zn supply	96
*Brugger D., Schlattl M., Buffler M., Windisch W. – Freising	
72. Composition of different types of bones in weaned piglets supplied with graded dietary phosphorus levels	97
*Miesorski M., Borgelt L., Lieboldt M.- A., Vollmar B., Gerlinger C., Oster M., Wimmers K., Wolf P. – Rostock/Dummerstorf	
73. Case report: Evaluation of the zinc status in a horse	98
*Kölln M., Künneke A., Kamphues J. – Hanover/Bispingen	
74. Influence of different iron supplementation strategies on oxidative stress parameters in the liver tissue of suckling piglets	99
*Buffler M., Becker C., Windisch W. – Freising	

Feed additives

- 75. Effects of algae β -glucan supplementation on the performance and the intestinal immune system of weaned piglets** 100
*Zeitz J. O., Gutöhrlein F., Block T., Henrich M., Most E., Whelan R., Htoo J. K., Eder K. – Giessen/Hanau
- 76. Effect of high or low dietary zinc oxide or Zn-Lysinate on the colon microbiome in weaned piglets** 101
*Pieper R., Dadi T., Pieper L., Vahjen W., Franke A., Reinert K., Zentek J. – Berlin/Kiel
- 77. Effects of *Scrophularia striata* extract supplementation on the rumen microbiome and fermentation *In vitro*.** 102
*Petri R., Bagheri-Varzaneh M., Klevenhusen F., Zebeli Q. – Vienna/Tehran
- 78. Circadian eating behaviour of sheep fed diets supplemented with menthol-based bioactive lipid compounds** 103
*Patra A. K., Geiger S., Braun H.- S., Aschenbach J. R. – Berlin/Kolkata
- 79. Case report: Impaired locomotion in fattening turkeys due to vitamin A deficiency?** 104
Abd El-Wahab A., Visscher C., Kölln M., Ratert C., Diephaus D., Beineke A., *Kamphues J. – Mansoura/Hanover/Cloppenburg
- 80. Effects of a probiotic on B-cells from German Landrace sows** 105
*Larsberg F., Korkuc P., Wöltje N., Hildebrandt K., Brockmann G. A., Kreuzer-Redmer S. – Berlin
- 81. Supplementation of chestnut extract reduces severity of post-weaning diarrhoea in artificially infected piglets** 106
*Girard M., Pradervand N., Silacci P., Bee G. – Posieux
- 82. Effect of one-time postnatal administration of immunoglobulin and trace mineral providing feed supplements on corresponding serum levels in Holstein calves during the first 14 days post natum** 107
*Lieboldt M.- A., Bekkering J., Wolf P. – Rostock/Loiching
- 83. *Ex vivo*-studies on survival of *Salmonella* Derby in gastric contents of pigs fed a diet without/with Benzoic acid** 108
*Sieverding J., Ratert C., Keller B., Kamphues J. – Hanover
- 84. Methylmalonic acid concentrations in serum as an indicator of the vitamin B12 status in pigs** 109
*Grützner N., Möbeler A., Oppriesnig T., Heilmann R., Kamphues J., Steiner J., Nathues H. – Halle (Saale)/Hanover/Edinburgh/Leipzig/College Station/Bern
- 85. Effects of lactic acid treated by-products in a diet supplemented or not with inorganic P on ruminal fermentation and nutrient degradation *In vitro*.** 110
*Haselmann A., Klevenhusen F., Metzler-Zebeli B., Knaus W., Zebeli Q. – Vienna
- 86. Increasing concentrations of a grape extract in broiler diets: Impact on histology and antioxidative status in the ileum** 111
*Schwarz C., Schinwald K., Ringhofer I. L., Leitgeb R., Gierus M. – Vienna
- 87. Effects of lignocellulose supplementation on performance, intestinal inflammation and the gut microbiome in broilers** 112
*Zeitz J. O., Neufeld K., Potthast C., Kroismayr A., Most E., Eder K. – Giessen/Heiligenkreuz/Kremsmünster
- 88. Effects of lignocellulose product containing lignans on performance and gut morphology in broilers** 113
*Potthast C., Araújo L., Neufeld N., Kroismayr A. – Kremsmünster/Sao Paulo/Heiligenkreuz/Regau
- 89. Modulation of the plasma metabolomic profile in cows challenged with concentrate-rich diets supplemented with phytogetic compounds or autolyzed yeast** 114
*Humer E., Kröger I., Neubauer V., Reisinger N., Zebeli Q. – Vienna/Tulln

90. Effects of Masson Pine pollen (<i>Pinus massoniana</i>) on cytokine gene expression in HD11 chicken macrophages <i>In vitro</i>	115
*Brugger D., Schusser B., Schmidt E., Voss L., Shi L., Zhao L., Windisch W. – Freising/Yantai	
91. Phytase and phosphorus effects on the microbial ecology in the ileum of broiler chickens	116
*Borda-Molina D., Zuber T., Rodehutschord M., Camarinha-Silva A. – Stuttgart	
92. Effect of phytogetic compounds or autolyzed yeast on the concentration of biogenic amines in the rumen fluid of cows challenged with concentrate-rich diets	117
*Kröger I., Humer E., Neubauer V., Schedle K., Reisinger N., Zebeli Q. – Vienna/Tulln	
93. Inflammasome signaling in porcine monocyte-derived dendritic cells after stimulation with probiotic <i>E. faecium</i> and enterotoxigenic <i>E. coli</i>	118
*Loss H., Aschenbach J., Tedin K., Lodemann U. – Berlin	
94. The effect of dietary carnitine supplementation and carnitine deficiency on the contractile and metabolic phenotype of skeletal muscle in growing pigs	119
*Ringseis R., Kaup D., Most E., Geyer J., Keller J., Eder K. – Giessen	
95. A feeding study on the potential impact of essential oils supplementation on calcium absorption in dairy cows	120
*Braun H.- S., Schrapers K. T., Mahlkow-Nerge K., Stumpff F., Rosendahl J. – Berlin/Osterrönfeld	
96. Effects of the probiotic <i>Enterococcus faecium</i> NCIMB 10415 on primary cultured porcine adaptive immune cells	121
*Kreuzer-Redmer S., Larsberg F., Korkuc P., Wöltje N., Hildebrandt K., Brockmann G. A. – Berlin	
Feedstuff evaluation and feeding	
97. Gradual replacement of dietary maize grain with molassed sugar beet pulp modulates ruminal and hindgut fermentation profile in high yielding dairy cows	122
*Münnich M., Klevenhusen F., Zebeli Q. – Vienna	
98. Does fishmeal substitution by partly defatted insect meal (<i>Hermetia illucens</i>) or microalgae powder (<i>Arthrospira platensis</i>) impact on feed acceptance and growth of rainbow trout?	123
*Dietz C., Liebert F. – Göttingen	
99. Effect of soaking and steaming hay on the consumption rate and chewing activity in horses	124
*Bochnia M., Vogel L., Hillegeist D., Greef M., Zeyner A. – Halle (Saale)/Braunschweig	
100. Relationship between particle size distribution (PSD) and nutrient composition in samples of mash diets for laying hens and its potential diagnostic value for feed consulting	125
*Lieboldt M.- A., Borgelt L., Wolf P. – Rostock	
101. Influence of "controlled fermentation" on D- and L-lactic acid and volatile fatty acid contents in a cereal- and rapeseed meal-based liquid diet for pigs	126
*Bunte S., Ratert C., Kölln M., Kamphues J. – Hanover	
102. Does the substitution of soy protein by novel protein from microalgae <i>Arthrospira platensis</i> impair the dietary protein quality of Tilapia feed?	127
*Dietz C., Liebert F. – Göttingen	
103. The use of condensed tannins as silage additive for rehydrated corn grain: effects on silage fermentation pattern and losses	128
*Iank Bueno A., Cabreira Jobim C., Pratti Daniel J., Gierus M. – Maringá/Vienna	
104. Influence of different sources and length of fibers in the diet on the growth of broiler chickens	129
*Halle I., Sievers H., Hüther L., Dänicke S. – Braunschweig	

105. Comparison of the fermentation traits of the barley mutant rob1 and the wildtype barley cv. Optic in an <i>In vitro</i> incubation study using the Rusitec system	130
*Klevenhusen F., Emsenhuber C., Grausgruber H., Zebeli Q. – Vienna/Tulln	
106. Effects of a ration change from a Total Mixed Ration to Pasture combined with concentrate supplementation on metabolism of Dairy cows	131
*Hartwiger J., Schären M., Meyer U., von Soosten D., Kluess J., Breves G., Dänicke S. – Braunschweig/Hanover	
107. Comparison of two <i>In vitro</i> systems for the estimation of total gas production and utilisable crude protein at the duodenum from native or ensiled field peas and field beans in ruminants	132
*Bachmann M., Kuhnitzsch C., Martens S. D., Steinhöfel O., Zeyner A. – Halle (Saale)/Köllitsch	
108. Investigations on thiamine contents of organically produced cereals and grain legumes for poultry diets	133
*Witten S., Aulrich K. – Westerau	
109. Comparative evaluation of dietary energy concentration and breed on feed intake and growth performance of fattening bulls	134
*Ettle T., Obermaier A. – Poing/Grub	
110. <i>In vitro</i> investigations on the protein value of untreated and cell-disrupted microalgae for ruminants	135
*Wild K., Steingäß H., *Rodehutschord M. – Stuttgart	
111. <i>In vitro</i> starch degradation and effective undegraded starch of different feedstuffs for ruminants	136
*Ocasio-Vega C., Westreicher-Kristen E., Pferdenges F., Rupp C., Susenbeth A., Wolfram S., Blank R. – Kiel	
112. Methodological studies on the comparison of wet sieve analyses of pelleted compound feed	137
*Borgelt L., Neuhauser H., Wolf P. – Rostock	
113. Impact of increasing amount of Sainfoin in diets of entire male pigs on growth performance, carcass characteristics, meat quality traits and boar taint levels in the backfat	138
*Seoni E., Battacone G., Silacci P., Ampuero-Kragten S., Dohme-Meier F., Bee G. – Posieux/Sassari	
114. Colostrum supply in suckling piglets in herds with different serological <i>Salmonella</i> prevalence in piglet rearing	139
*Schulte zu Sundern A., Holling C., Rohn K., Schulte-Wülwer J., Deermann A., Visscher C. – Hanover/Oldenburg/Meppen	
115. Influences of higher dietary crude fibre levels on gains, behavioural disorders as well as on weight of organs (gizzard/liver) in fattening turkeys.	140
*Becker N., Kamphues J. – Hanover	
116. Contents of precaecally digestible crude protein and amino acids and the amino acid profile of the total and insoluble crude protein fraction of compound feeds for horses	141
*Zeyner A., Grünewald K.-H., Esser S., Stüdekum K.-H. – Halle (Saale)/Bonn	
117. Comparison of the particle size distribution between offered pelleted compound feed and gastric chyme after intake by fattening pigs using different wet sieving methods	142
*Borgelt L., Neuhauser H., Wolf P. – Rostock	
118. Effect of rumen nitrogen balance on <i>In vitro</i> gas production and microbial protein synthesis from different nitrogen sources	143
*Kand D., Castro-Montoya J., Dickhoefer U. – Stuttgart	
119. Comparison of packing density and fermentation quality between shredlage and conventional corn silage	144
*Frahmann G., Hünerberg M., Hummel J. – Goettingen	

120. Roughage based diets for pregnant sows – apparent digestibility and nutritive value of whole plant silages of wheat and maize	146
Schulz S., Visscher C., *Kamphues J. – Hanover	
121. Forage and protein use efficiency in dairy cows grazing a mixed grass-legume pasture and supplemented with concentrates differing in protein and starch content	146
*Dickhoefer U., Glowacki S., Gómez C., Castro-Montoya J. – Stuttgart/Lima	
122. Growth performance and nutrient contents of several insect species fed with grass, silage and cobs	147
*Paulicks B., Gassner M., Wohlschläger A., Windisch W. – Freising	
123. Feeding the Edible Mediterranean Field Cricket <i>Gryllus bymaculatus</i> and the Desert Locust <i>Schistocerca gregaria</i> Forskål on base of storable feed substrates derived from maize, soybean, cowpea and carrots	148
Straub P., Osuga I., Tanga C. M., *Windisch W., Subramanian S. – Plant Health Division/Freising/Nairobi	
124. Influence of different energy, protein and NDF contents in the diet on the growth of broiler chickens	149
*Halle I., Sievers H., Hütther L., Dänicke S. – Braunschweig	
125. Effects of a partly defatted insect meal (<i>Hermetia illucens</i>) or micro algae (<i>Spirulina platensis</i>) in mixed diets on intestinal mucosal surface and mucin secretion of meat type chicken	150
*Gruber-Dujardin E., Velten S., Neumann C., Liebert F. – Göttingen	
126. Effects of soaking wheat and corn in lactic acid on the phytate-phosphorus and resistant starch content	151
*Vötterl J. C., Zebeli Q., Metzler-Zebeli B. U. – Vienna	
127. Effects of feed intake level on efficiency of microbial protein synthesis and nitrogen balance in Boran steers	152
*Wassie S., Dickhoefer U., Schlecht E., Ali A. I. M., Butterbach-Bahl K., Merbold L., Goopy J., Korir D. – Stuttgart/Göttingen/Nairobi	
128. Impact of a ration change from a Total Mixed Ration to Pasture combined with concentrate supplementation on immune cell parameters of Dairy Cows	153
*Hartwiger J., Schären M., Frahm J., Kersten S., Meyer U., Breves G., Dänicke S. – Braunschweig/Hanover	
129. Ruminal crude protein degradation of hydrothermally processed full fat soybeans	154
*Krieg J., Titze N., Dell'Oro B., Steingäß H., Rodehutschord M. – Stuttgart	
130. Yeasts in liquid swine diets – identification, growth at different temperatures and gas formation potential	155
*Keller B., Kuder H., Visscher C., Kamphues J. – Hanover	
131. How does the dietary inclusion of <i>Hermetia illucens</i> larvae meal affect the porcine intestinal microbiota?	156
*Seifert J., Burbach K., Camarinha-Silva A., Berk A., Daenicke S., Kluess J. – Stuttgart/Braunschweig	
132. Effect of feeding level and fecal microbiota transplant on serum parameters in chickens of diverging feed efficiency	157
*Metzler-Zebeli B., Siegerstetter S.- C., Zebeli Q. – Vienna	
133. Response to a diet composed of food industry by-products of late laying dual-purpose hens in comparison to layer hybrids	158
*Mueller S., Messikommer R. E., Kreuzer M., Gangnat I. D. M. – Zurich	

Other topics

- 134. Effects of glyphosate residues in feedingstuffs; and different concentrate feed proportions on immunological, hematological and oxidative stress parameters of dairy cows in established lactation** 159
*Schnabel K., Schmitz R., Frahm J., Meyer U., Breves G., Dänicke S. – Braunschweig/Hanover
- 135. Impact of acute supplementary stress at slaughter on physiology and meat quality of fattening bulls** 160
*Reiche A., Oberson J.-L., Silacci P., Dufey P.-A., Dohme-Meier F., Hess H.-D., Terlouw E. M. C. – Posieux/St-Genès-Champanelle
- 136. Study on course of plasma levels of gastrointestinal hormones (glucose-dependent insulinotropic peptide [GIP], glucagon-like peptide 1 and 2 [GLP-1, GLP-2]) that are supposed to be involved in small intestinal elongation in juvenile pigs after experimentally induction of exocrine pancreatic insufficiency** 161
*Möbeler A., Ahlfänger B., Hartmann B., Holst J. J., Brehm R., Kamphues J. – Hanover/Copenhagen
- 137. Comparative histology of esophageal submucosal glands in pigs exposed to different diets and housing systems with regard to the incidence of gastric ulcers** 162
*Rinke F., Brehm R., Langeheine M., Kamphues J. – Hanover
- 138. Conjugation frequencies of ESBL-producing *Escherichia coli* donors and various *Enterobacteriaceae* recipients from poultry** 163
*Saliu E.-M., Vahjen W., Zentek J. – Berlin
- 139. Detection of toxic MCPG metabolites after ingestion of Sycamore Maple seeds in horses with Atypical Myopathy** 164
*Bochnia M., Barnewitz D., Sander J., Weigang R., Klein C., Genzel A., Ziegler J., Terhardt M., Sander S., Janzen N., Zeyner A. – Halle (Saale)/Bad Langensalza/Hanover/Soest
- 140. Changes of free and bound cortisol in plasma and saliva during an ACTH challenge in dairy cows and horses** 165
Schwinn A.-C., Sauer F., Gerber V., Bruckmaier R., *Gross J. – Bern
- 141. Investigations on the influence of different farrowing systems on colostrum supply and performance of piglets** 166
Schnier S., Middendorf L., *Visscher C. – Hanover
- 142. Effects of dose of pancreatic enzymes and extracorporeal predigestion of the diet on prececal digestibility of nutrients – study using ileo-cecal fistulated minipigs with exocrine pancreatic insufficiency as a model for canine patients** 167
*Möbeler A., Schulten L., Kamphues J. – Hanover
- 143. Feed intake patterns of fattening pigs exposed to short term disturbances in stable routine** 168
*Loibl P., Spiekers H., Preißinger W., Windisch W. – Freising/Grub
- 144. Trade-off between parasite resistance and tolerance in a high and a lower performing layer chicken genotype: short-term response to experimental nematode infections** 169
*Stehr M., Dannenberger D., Grashorn M., Metges C. C., *Daş G. – Dummerstorf/Stuttgart
- 145. Intake potential by cows of different woody and herbaceous plants rich in phenols** 170
*Terranova M., Wang S., Kreuzer M., Eggerschwiler L., Schwarm A. – Zurich/Posieux
- 146. Enhancing health-beneficial fatty acids in milk fat of early lactating cows by high-quality hay** 171
*Khiaosa-ard R., Kleefisch M.-T., Zebeli Q., Klevenhusen F. – Vienna

147. Effects of abomasal infusion of essential fatty acids and conjugated linoleic acid on hepatic energy metabolism including the somatotrophic axis of dairy cows fed a ration with reduced n-3 fatty acid content	172
Haubold S., Kröger-Koch C., Tuchscherer A., Tröscher A., Starke A., Hoefflich A., *Hammon H. M. – Dummerstorf/Lampertheim/Leipzig	
148. T and B cell subsets in neonatal calves depending on maternal conjugated linoleic acid and essential fatty acid supply	173
*Liermann W., Uken K. L., Viergutz T., Tröscher A., Hammon H. M. – Dummerstorf/Lampertheim	
149. Studies on chemokine receptor CXCR4 expression by bovine leukocytes and the effects of essential fatty acid supplementation in dairy cows fed a maize based ration	174
*Mielenz M., Haubold S., Kröger-Koch C., Viergutz T., Tuchscherer A., Tröscher A., Günther J., Schuberth H.- J., Hammon H. M., Revskij D. – Dummerstorf/Limburgerhof/Hanover	
150. Milk fatty acid composition of cows fed varying red clover to maize silage ratios in the diet	175
*Schulz F., Westreicher-Kristen E., Molkentin J., Knappstein K., Susenbeth A. – Kiel	
151. Effects of essential fatty acids and conjugated linoleic acid on performance and energy metabolism in dairy cows fed a diet with reduced n-3 fatty acid content during the transition period	176
Vogel L., Gnott M., Kröger-Koch C., Weitzel J., Tröscher A., Starke A., *Hammon H. M. – Dummerstorf/Lampertheim/Leipzig	
152. Influence of essential fatty acids and conjugated linoleic acid on acute phase response, antioxidative status, retinol and α-tocopherol concentration in blood plasma of dairy cows fed a diet with reduced n-3 fatty acid content during the transition period	177
Gnott M., Vogel L., Kröger-Koch C., Starke A., Tröscher A., Trevisi E., *Hammon H. M. – Dummerstorf/Leipzig/Lampertheim/Piacenza	
153. Impact of the maternal supplementation with essential fatty acids and conjugated linoleic acid on the metabolism of neonatal calves: First results	178
Uken K. L., Vogel L., Gnott M., Weitzel J., Tuchscherer A., Tröscher A., Dannenberger D., *Hammon H. M. – Dummerstorf/Lampertheim	
154. Are rumen-protected n-3 and n-6 fatty acids differently incorporated into different bovine adipose tissues?	179
*Wolf C., Gredig N., Berard J., Ulbrich S. E., Kreuzer M., Giller K. – Zurich	
155. Increasing sainfoin proportion in dairy cows diets modifies fatty acid profile in milk	180
*Girard M., Grosse Brinkhaus A., Bee G., Battacone G., Nudda A., Dohme-Meier F. – Posieux/Sassari	
Workshop	
W1 Development and implementation of fiber analysis in foods, feeds and digesta materials	182
Prof. Dr. K.E. Bach-Knudsen, Aarhus University	
W2 Modulatory abilities of dietary fiber on gut function – beneficial or physiologically costly?	186
PD Dr. Barbara Metzler-Zebeli, VetMed Uni Vienna	
W3 Dietary fiber – its diverse effects on pig's health	188
Prof. Dr. Josef Kamphues, University of Veterinary Medicine Hanover	
W4 The role of fibre with respect to feeding behaviour	193
Dr. Irena Czycholl, Christian-Albrechts-University Kiel	
W5 Dietary fiber displaces no concentrated feed and makes pigs less aggressive	196
Dr. W. Preißinger, Bavarian State Research Center for Agriculture Schwarzenau	
Index	201