

Beiträge zu begutachteten Zeitschriften**2024:**

Grelet C, Larsen T, Crowe MA, Wathes DC, Ferris CP, Ingvartsen KL, Marchitelli C, Becker F, Vanlierde A, Leblois J, Schuler U, Auer FJ, Egger-Danner C, Werner A, Sölkner J, Christophe O, **Hummel J**, Mensching A, Fernández Pierna JA, Soyeurt H, Calmels M, Reding R, Gelé M, Chen Y, Gengler N, GplusE consortium, Dehareng F. 2024. Prediction of key milk biomarkers in dairy cows through milk MIR spectra and international collaborations. *Journal of Dairy Science* 107:1669-1684. doi: 10.3168/jds.2023-23843

Krone B, **Hummel J**, Riek A, Clauss M, Hünerberg M. 2024. Comparative study of feeding and rumination behavior of goats and sheep fed mixed grass hay of different chop length. *Journal of Animal Physiology and Animal Nutrition*. 108: 700-710. doi: 10.1111/jpn.13928

Singer M, Codron D, Lechner I, Rudnik R, Barboza P, **Hummel J**, Clauss M. 2024. The effect of size and density on the mean retention time of particles in reindeer (*Rangifer tarandus*). *Comparative Biochemistry Physiology A* 292: 111621. doi: 10.1016/j.cbpa.2024.111621

Zhang X, Klevenhusen F, Clauss M, **Hummel J**. 2024. Inoculum microbe concentration is negatively related to microbe yield and positively to methane yield *in vitro*. *Journal of Nutritional Science* 13: e44, 1-9. <https://doi.org/10.1017/jns.2024.37>

2023:

Altmann BA, Geisler S, Morthorst F, Gauly M, **Hummel J**, Sünder A, Mörlein D, Traulsen I, Ammer S. (2023). Municipal organic waste to insect meal as feed and the resulting animal performance and meat quality of two slow-growing chicken breeds. *Journal of Insects as Food and Feed* 9: 1445-1459. doi: 10.1163/23524588-20230035.

Clauss M, Codron D, **Hummel J**. (2023) Equid nutritional physiology and behavior: an evolutionary perspective. *Journal of Equine Veterinary Sciences* 124: 104265. doi.org/10.1016/j.jevs.2023.104265

Clauss M, Fritz J, **Hummel J**. (2023). Teeth and the gastrointestinal tract in mammals: when 1 + 1 = 3. *Philosophical Transactions of the Royal Society B* 374: 20220544. Doi: 10.1098/rstb.2022.0544

Pfau F, Clauss M, **Hummel J**. 2023. Is there a difference in ruminal fermentation control between cattle and sheep? A meta-analytical test of a hypothesis on differential particle and fluid retention. *Comparative Biochemistry and Physiology A* 277: 111370. doi.org/10.1016/j.cbpa.2023.111370

Schwermann A, Schulz JA, Fuchs E, Leha A, **Hummel J**, Kullmer O, Steuer P; Martin T. (2023) Does age matter? - Efficiency of mechanical food break down in *Tupaia belangeri* at different ages. *PLoS One* 18: e0274439. <https://doi.org/10.1371/journal.pone.0274439>

Zhang X, Li Y, Terranova M, Ortmann S, Kreuzer M, **Hummel J**, Clauss M. 2023. Inter-individual differences in digesta retention and their relation to chewing in cattle – a pilot investigation. *Journal of Animal Physiology and Animal Nutrition* 107:394-406. doi: 10.1111/jpn.13733

Zhang X, Li Y, Terranova M, Ortmann S, Kehraus S, Kreuzer M, **Hummel J**, Clauss M (2023). Effect of induced saliva flow on fluid retention time, ruminal microbial yield and methane emission in cattle. *Journal of Animal Physiology and Animal Nutrition* 107: 769-782. doi: 10.1111/jpn.13773

Zhang X, Li Y, Terranova M, Ortmann S, Kehraus S, Gerspach C, Kreuzer M, Clauss M, **Hummel J.** (2023). A pilot investigation on the effect of induced saliva flow on digestive parameters in sheep, and a comparison with cattle. *Journal of Animal Physiology and Animal Nutrition* 107: 1176-1186. doi: 10.1111/jpn.13815

Zschiesche M, Jansen H, Mensching A, Albers D, Sharifi AR, **Hummel J.** 2023. Relationship between reticular pH parameters and potential on-farm indicators in early lactating dairy cows. *Journal of Animal Physiology and Animal Nutrition* 109: 1-11. doi: 10.1111/jpn.13678

2022:

Clauss M, Tschuor A, Codron D, **Hummel J.** 2022. Reticular contraction frequency and ruminal gas dome development in goats does not differ between grass and browse diets. *Journal of Animal Physiology and Animal Nutrition* 106: 1208-1215. DOI: 10.1111/jpn.13663

De Cuyper A, Winkler D, Tütken T, Bosch G, **Hummel J.**, Janssens GPJ, Clauss M. 2022. Digestion of bamboo compared to grass and lucerne in a small hindgut fermenting herbivore, the guinea pig (*Cavia porcellus*). *Journal of Experimental Zoology A* 337: 128-140. doi:10.1002/jez.2538

Lau N, **Hummel J.**, Kramer E, Hünerberg M. 2022. Fermentation of liquid feed with lactic acid bacteria reduces dry matter losses, lysine breakdown, formation of biogenic amines and phytate-phosphorus. *Translational Animal Science* txac007. doi:10.1093/tas/txac007

Martin LF, Ackermans NL, Tollefson TN, Kircher P, Richter H, **Hummel J.**, Codron D, Clauss M, Hatt J-M. 2022. Tooth wear, growth, and height in rabbits (*Oryctolagus cuniculus*) fed pelleted or extruded diets with added abrasives. *Journal of Animal Physiology and Animal Nutrition* 106: 630-641. doi:10.1111/jpn.13565

Martin LF, Ackermans NL, Richter H, Kircher PR, **Hummel J.**, Codron D, Clauss M, Hatt J-M (2022) Macrowear effects of external quartz abrasives of different size and concentration in rabbits (*Oryctolagus cuniculus*). *Journal of Experimental Zoology B* 338: 586-597

Matsuda I, Hashimoto C, Ihobe H, Yumoto T, Baranga D, Clauss M, **Hummel J.** 2022. Dietary choice of a foregut fermenting primate, *Colobus guereza*: a comprehensive approach from chemical and mechanical properties, digestibility and abundance of leaves. *Frontiers in Ecology and Evolution* 10: Article 795015 (11 pages). doi: 10.3389/fevo.2022.795015

Mott AC, Schneider D, Hünerberg M, **Hummel J.**, Tetens J. 2022. Bovine Rumen Microbiome: Impact of DNA extraction methods and comparison of non-invasive sampling sites. *Ruminants* 2: 112-132. doi:10.3390/ruminants2010007

Valerio S, **Hummel J.**, Codron D, Hatt J-M, Clauss M. 2022. Ruminant sorting mechanism protects teeth from abrasives. *Proceedings of the National Academy of Science* 119: e2212447119. DOI: 10.1073/pnas.2212447119

(Commentary: Sanson GD Reassessing assumptions about the evolution of herbivore teeth. *PNAS* 120: e2219060120. DOI: 10.1073/pnas.2219060120.)

Winter N, Clauss M, Codron D, **Hummel J.**, Müller J, Richter H, Kircher P, Hatt J-M, Martin L. 2022. Sand accumulation in the digestive tract of rabbits (*Oryctolagus cuniculus*) and guinea pigs (*Cavia porcellus*): the role of the appendix. *Journal of Morphology* 283: 5-15. doi:10.1002/jmor.21423

2021:

Denißen J, Beintmann S, Hoppe S, Pries M, **Hummel J**, Südekum K.-H. 2021. Influence of the addition of water to total mixed rations on the feeding behaviour, feed intake and milk performance of high-yielding dairy cows. *Livestock Science* 254, 104743. doi.org/10.1016/j.livsci.2021.104743.

Findeisen E, Südekum K-H, **Hummel J**, Clauss M. 2021. Increasing food intake in domestic goats (*Capra hircus*): measured effects on chewing intensity are probably driven by escape of few, large particles from the forestomach. *Comparative Biochemistry and Physiology A* 257: 110972. doi:10.1016/j.cbpa.2021.110972

Findeisen E, Südekum K-H, Fritz J, **Hummel J**, Clauss M. 2021. Increasing food intake affects digesta retention, digestibility and gut fill but not chewing efficiency in domestic rabbits (*Oryctolagus cuniculus*) *Journal of Experimental Zoology A* 335: 614-622. doi:10.1002/jez.2505

Hatt J-M, Codron D, Richter H, Kircher PR, **Hummel J**, Clauss M. 2021. Preliminary evidence for a forestomach washing mechanism in llamas. *Mammalian Biology* 101:941-948. doi:10.1007/s42991-42021-00142-42991

Jansen HM, Zschiesche M, Albers D, Wemheuer W, Sharifi R, **Hummel J**. 2021. Accuracy of subclinical ketosis detection with rapid test methods for BHBA in blood in commercial dairy farms. *Dairy* 2: 671-683. doi:10.3390/dairy2040052

Köhler OM, Grünberg W, Schnepel N, Muscher-Banse AS, Rajaeerad A, **Hummel J**, Breves G, Wilkens MR. 2021. Dietary phosphorus restriction affects bone metabolism, vitamin D metabolism and rumen fermentation traits in sheep. *Journal of Animal Physiology and Animal Nutrition* 105: 35-50. doi:10.1111/jpn.13449

Menschling A, Zschiesche M, **Hummel J**, Grelet C, Gengler N, Dänicke S, Sharifi R. 2021. Development of a SARA risk score and its prediction using milk mid-infrared spectra in early lactation cows. *Journal of Dairy Science* 104: 4615-4634. doi:10.3168/jds.2020-19516

Pfau F, Hünerberg M, Südekum K-H, Breves G, Clauss M, **Hummel J**. 2021. Effects of dilution rate on fermentation characteristics of feeds with different carbohydrate composition incubated in the rumen simulation technique. *Frontiers in Animal Science* 2: 715142. doi:10.3389/fanim.2021.715142

2020:

Ackermans, N.L., Martin, L.F., Codron, D., **Hummel J**, Kircher PR, Richter H, Kaiser TM, Clauss, M., Hatt, J.-M. 2020. Mesowear represents a lifetime signal in sheep (*Ovis aries*) within a long-term feeding experiment. *Palaeogeography, Palaeoclimatology, Palaeoecology* 553: 109793.

Bünemann K, Johannes M, Schmitz R, Hartwiger J, von Soosten D, Hüther L, Meyer U, Westendarp H, **Hummel J**, Zeyner A, Dänicke S. 2020. Effects of different concentrate feed proportions on ruminal pH parameters, duodenal nutrient flows and efficiency of microbial crude protein synthesis in dairy cows during early lactation. *Animals* 10: 267.

Bünemann K, Frahm J, Kersten S, Hüther L, Meyer U, Sauerwein H, **Hummel J**, Zeyner A, Dänicke S. 2020. Effects of pre-calving body condition and different postpartum concentrate feed proportions on immunological and hematological parameters in pluriparous dairy cows. *Animals* 2020, 10, 2251. https://doi.org/10.3390/ani10122251

Hatt J-M, Codron D, Ackermans NL, Martin LF, Richter H, Kircher PR, Gerspach C, **Hummel J**, Clauss M. 2020. Differences in the rumen washing mechanism in sheep fed diets with abrasives of various concentrations and sizes. *Palaeogeography, Palaeoclimatology, Palaeoecology* 550:109728

Martin LF, Krause L, Ulbricht A, Winkler DE, Codron D, Kaiser TM, Müller J, **Hummel J**, Clauss M, Hatt J-M, Schulz-Kornas E. 2020. Dental wear at macro- and microscopic scale in rabbits fed diets of different abrasiveness: a pilot investigation. *Palaeogeography, Palaeoclimatology, Palaeoecology* 556: 109886.

Menschling A, Zschiesche M, **Hummel J**, Schmitt AO, Grelet C, Sharifi AR. 2020. An innovative concept for a multivariate plausibility assessment of simultaneously recorded data. *Animals* 10: 1-22.

Menschling A, Bünenmann K, Meyer U, v. Soosten D, **Hummel J**, Schmitt A, Sharifi AR, Dänicke S. 2020. Modeling of reticular and ventral ruminal pH of dairy cows using sensory recorded data of ingestion and rumination behavior. *Journal of Dairy Science* 103: 7260-7275.

Menschling A, **Hummel J**, Sharifi AR. 2020. Statistical modeling of ruminal pH parameters of dairy cows based on a meta-analysis. *Journal of Dairy Science* 103: 750-767. DOI: 10.3168/jds.2019-16802

Nolte T, Jansen S, Weigend S, Mörlein D, Halle I, Link W, **Hummel J**, Simianer H, Sharifi AR. 2020. Growth performance of local chicken breeds, a high-performance genotype and their crosses fed with regional faba beans to replace soy. *Animals* 10: 702. doi:10.3390/ani10040702

Schulz-Kornas E, Winkler DE, Clauss M, Carlsson J, Ackermans NL, Martin LF, **Hummel J**, Müller DW, Hatt J-M, Kaiser TM. 2020. Everything matters: Molar microwear texture in goats (*Capra aegagrus hircus*) fed diets of different abrasiveness. *Palaeogeography, Palaeoclimatology, Palaeoecology* 552: 109783.

Steinmetz M, von Soosten D, **Hummel J**, Meyer U, Dänicke S. 2020. Validation of the RumiWatch system classification accuracy for the automatic monitoring of chewing behavior in dairy cows. *Archives of Animal Nutrition* 74: 164-172. DOI: 10.1080/1745039X.2020.1721260

Winkler DE, Schulz-Kornas E, Kaiser TM, Codron D, Leichliter J, **Hummel J**, Clauss M, Tütken T. 2020. The turnover of dental microwear texture: Testing the "last supper" effect in small mammals in a controlled feeding experiment. *Palaeogeography, Palaeoclimatology, Palaeoecology* 557: 109930.

Zschiesche M, Mensching A, Sharifi AR, **Hummel J**. 2020. The milk fat-to-protein ratio as indicator for ruminal pH parameters in dairy cows – a meta-analysis. *Dairy* 1: 259-268. <https://doi.org/10.3390/dairy1030017>

2019:

Ackermans NL, Clauss M, Winkler DE, Schulz-Kornas E, Kaiser TM, Müller DWH, Kircher PR, **Hummel J**, Hatt J-M. 2019. Root growth compensates for molar tooth wear in goats (*Capra aegagrus hircus*). *Journal of Experimental Zoology A* 331: 139-148. DOI:10.1002/jez.2248

Ackermans NL, Martin LF, **Hummel J**, Müller DWH, Clauss M, Hatt J-M. (2019). Feeding selectivity for diet abrasiveness in sheep (*Ovis aries*) and goats (*Capra aegagrus hircus*). *Small Ruminant Research* 175: 160-164. DOI:10.1016/j.smallrumres.2019.05.002

Bünemann K, von Soosten D, Frahm J, Kersten S, Meyer U, **Hummel J**, Zeyner A, Dänicke S. (2019). Effects of body condition and concentrate proportion of the ration on mobilization of fat depots and energetic condition in dairy cows during early lactation. *Animals* 9, 131. DOI:10.3390/ani9040131

Ehrlich C, Codron D, Hofmann RR, **Hummel J**, Clauss M. 2019. Comparative omasum anatomy in ruminants: relationships with natural diet, digestive physiology, and general considerations on allometric investigations. *Journal of Morphology* 280: 259-277. DOI:10.1002/jmor.20942

Hatt J-M, Codron D, Müller DWH, Ackermans NL, Martin LF, Kircher PM, **Hummel J**, Clauss M. 2019. The rumen washes off abrasives before heavy-duty chewing in ruminants. *Mammalian Biology* 97: 104-111.

Mobashar M, **Hummel J**, Blank R, Südekum K-H. 2019. Relative contribution of different rumen microbial groups to gas production, short-chain fatty acid and ammonium production from different diets in an *in vitro* fermentation system. *Journal of Animal Physiology and Animal Nutrition* 103: 17-28. DOI:10.1111/jpn.12996

Pfau F, **Hummel J** (2019). Microbial protein formation of different carbohydrates *in vitro*. *Journal of Animal Physiology and Animal Nutrition* 103: 1739-1746. DOI:10.1111/jpn.13204

Przybylo M, **Hummel J**, Ortmann S, Codron D, Kohlschein G-M, Kilga D, Smithyman J, Przybylo U, Swierk S, Hammer S, Hatt J-M, Górká P, Clauss M. (2019). Digesta passage in nondomestic ruminants: separation mechanisms in “moose-type” and “cattle-type” species, and seemingly atypical browsers. *Comparative Biochemistry and Physiology A*. 235: 180-192.

Runa RA, Riek A, Brinkmann L, **Hummel J**, Gerken M. (2019). Reactions to saline drinking water in Boer goats in a free choice system. *Animal* 13: 98-105. DOI:10.1017/S175173111800800.

2018:

Ackermans NL, Winkler DE, Schulz-Kornas E, Kaiser TM, Müller DHW, Kircher PR, **Hummel J**, Clauss M, Hatt J-M. (2018). Controlled feeding experiments with diets of different abrasiveness reveal slow development of mesowear signal in goats (*Capra aegagrus hircus*). *Journal of Experimental Biology* 221, jeb186411. doi:10.1242/jeb.186411

Gill F, **Hummel J**, Sharifi AR, Lee AP, Lomax BH. 2018. Diets of giants: the nutritional value of herbivorous dinosaur diet during the Mesozoic. *Paleontology*.61: 647-658. DOI: 10.1111/pala.12385.

Gussek I, Große-Brinkhaus C, Südekum K-H, **Hummel J**. 2018. Influence of ration composition on nutritive and digestive variables in captive giraffes (*Giraffa camelopardalis*) indicating the appropriateness of feeding practice. *Journal of Animal Physiology and Animal Nutrition* 102: e513-524. DOI: 10.1111/jpn.12790

Hummel J, Scheurich F, Ortmann S, Crompton L, Gerken M, Clauss M. 2018. Comparative selective retention of particle size classes in the gastrointestinal tract of ponies and goats. *Journal of Animal Physiology and Animal Nutrition* 102: 429-439. DOI: 10.1111/jpn.12763

Schären M, Frahm J, Kersten S, Meyer U, **Hummel J**, Breves G, Dänicke S. 2018. Interrelations between the rumen microbiota and production, behavioral, rumen

fermentation, metabolic and immunological attributes of dairy cows. *Journal of Dairy Science* 101: 4615-4637. DOI: org/10.3168/jds.2017-13736

2017:

Clauss M, Fritz J, Tschuor A, Braun U, **Hummel J**, Codron D. 2017. Dry matter and digesta particle size gradients along the goat digestive tract on grass and browse diets. *Journal of Animal Physiology and Animal Nutrition* 101: 61-69. DOI: 10.1111/jpn.12505

Clauss M, **Hummel J** (2017) Physiological adaptations of ruminants and their potential relevance for production systems. *Revista Brasileira de Zootecnia* 46: 606-613.

Gussek I, Hartmann M, Hirsch S, Südekum K-H, **Hummel J**. 2017. Feeding practice for captive giraffes (*Giraffa camelopardalis*) in Europe: A survey in EEP zoos. *Journal of Zoo and Aquaria Research* 5: 62-70.

Hummel J, Hammer C, Hammer S, Südekum K-H, Müller DHW, Clauss M. 2017. Retention of solute and particle markers in the digestive tract of captive Somali wild asses (*Equus africanus somaliensis*). *European Journal of Wildlife Research* 63: 41. DOI 10.1007/s10344-017-1098-1

Matsuda I, Clauss M, Tuuga A, Hanya A, Yumoto T, Bernard H, **Hummel J**. 2017. Factors affecting leaf selection by proboscis monkeys: new insight from in vitro digestibility and toughness of leaves. *Scientific Reports* 7:42774.

Schären M, Kiri K, Riede S, Gardener M, Meyer U, **Hummel J**, Breves G, Dänicke S. 2017. The effects of monensin and essential oils on rumen microbiota of transition dairy cows characterized using DNA fingerprinting and next generation sequencing. *Journal of Dairy Science* 100: 2765-2783. DOI: 10.3168/jds.2016-11994

Schären M, Kiri K, Riede S, Gardener M, Meyer U, **Hummel J**, Urich T, Breves G, Dänicke S. (2017). Differential effects of a ration change from a total mixed ration to pasture on rumen liquid-, particle- and epithelium-associated archaea and bacteria of dairy cows. *Frontiers of Microbiology*. DOI: 10.3389/fmicb.2017.00744

Stölzl AM, Lambertz C, **Hummel J**, Breves G, Gauly M. 2017. Does hay quality affect dry matter intake and feed selection of llamas (*Lama glama*) and alpacas (*Vicunja pacos*) under Central European conditions? *Berliner und Münchener Tierärztliche Wochenschrift* 130: 415-423. DOI: 10.2376/0005-9366-15125

2016:

Gussek I, Große-Brinkhaus C, **Hummel J**, Südekum K-H. 2016. Nutrient composition and fermentation characteristics of feedstuffs for giraffes (*Giraffa camelopardalis*) in German zoos. *Journal of Animal and Feed Sciences* 25: 134-144.

2015:

Clauss M, Steuer P, Erlinghagen K, Kaandorp J, Fritz J, Südekum K-H, **Hummel J**. 2015. Faecal particle size: digestive physiology meets herbivore diversity. *Comparative Biochemistry and Physiology A* 179: 182-191.

Dittmann MT, **Hummel J**, Hammer S, Aif A, Hebel C, Müller DHW, Fitz J, Steuer P, Schwarm A, Kreuzer M, Clauss M. 2015. Digesta retention in gazelles in comparison to other ruminants: taxon-specific rumen fluid throughput adjusts digesta washing to the natural diet. *Comparative Biochemistry and Physiology A* 185: 58-68.

Hummel J, Hammer S, Hammer C, Ruf J, Lechenne M, Clauss M. 2015. Solute and particle retention in a small grazing antelope, the blackbuck (*Antilope cervicapra*). Comparative Biochemistry and Physiology A 182: 22-26.
<http://dx.doi.org/10.1016/j.cbpa.2014.12.006>

Müller J, Clauss M, Codron D, Schulz E, **Hummel J**, Kircher P, Hatt J-M. 2015. Tooth length and incisal wear and growth in guinea pigs (*Cavia porcellus*) fed diets of different abrasiveness. Journal of Animal Physiology and Animal Nutrition 99: 591-604.

Steuer P, **Hummel J**, Grosse-Brinkhaus C, Südekum K-H. 2015. Food intake rates of mammals and birds and the influence of body mass. European Journal of Wildlife Research 61: 91-102.

Vendl C, Clauss M, Stewart M, Legget K, **Hummel J**, Kreuzer M, Munn A. 2015. Decreasing methane yield with increasing food intake keeps daily methane emissions constant in two foregut fermenting marsupials, the western grey (*Macropus fuliginosus*) and red kangaroos (*Macropus rufus*). Journal of Experimental Biology 218: 3425-3434.

2014:

Clauss M, Schiele K, Ortmann S, Fritz J, Codron D, **Hummel J**, Kienzle E. 2014. The effect of very low food intake on digestive physiology and forage digestibility in horses. Journal of Animal Physiology and Animal Nutrition 98: 107-118.

Dittmann MT, Hebel C, Hammer S, **Hummel J**, Ortmann S, Arif A, Bouts T, Kreuzer M, Clauss M. 2014. Energy requirements and metabolism of the Phillip's dikdik (*Madoqua saltiana phillipsi*). Comparative Biochemistry and Physiology A 167: 45-51.

Dittmann MT, **Hummel J**, Runge U, Galeffi C, Kreuzer M, Clauss M. 2014. Characterising an artiodactyl family inhabiting arid habitats by its metabolism: low metabolism and maintenance requirements in camelids. Journal of Arid Environments 107: 41-48.

Müller J, Clauss M, Codron D, Schulz E, **Hummel J**, Fortelius M, Kircher P, Hatt J-M (2014) Growth and wear of incisor and cheek teeth in domestic rabbits (*Oryctolagus cuniculus*) fed diets of different abrasiveness. Journal of Experimental Zoology A 321: 283-298.

Steuer P, Südekum K-H, Tütken T, Müller DWH, Kaandorp J, Bucher M, Clauss M, **Hummel J**. 2014. Does body mass convey a digestive advantage for large herbivores? Functional Ecology 28: 1127-1134. doi: 10.1111/1365-2435.12275

(Kommentar: FE Spotlight: McArthur C. 2014. Do we ditch digestive physiology in explaining the classic relationship between herbivore body size diet and diet quality? Functional Ecology 28: 1059-1060.)

2013:

Clauss M, Kohlschein GM, Peemöller A, **Hummel J**, Hatt J-M. 2013. Digestible energy intake in captive moose (*Alces alces*) on different diets. Zoo Biology 32: 484-489.

Clauss M, Steuer P, Müller DWH, Codron D, **Hummel J**. 2013. Herbivory and body size: Allometries of diet quality and gastrointestinal physiology, and implications for herbivore ecology and dinosaur gigantism. PLoS ONE 8(10): e68714. doi:10.1371/journal.pone.0068714

Lauper M, Lechner I, Barboza P, Collins W, **Hummel J**, Codron D, Clauss M (2013) Rumination of different-sized particles in muskoxen (*Ovibos moschatus*) and moose (*Alces alces*) on grass and browse diets, and implications for rumination in different ruminant feeding types. *Mammalian Biology* 78: 142-152.

Longo C, Abdalla AL, Liebich J, Janzik I, **Hummel J**, Correa PS, Südekum K-H, Burauel P (2013) Evaluation of the effects of tropical tanniferous plants on rumen microbiota using qRT PCR and DGG analysis. *Czech Journal of Animal Science* 58:106-116.

Müller DWH, Codron D, Meloro C, Munn A, Schwarm A, **Hummel J**, Clauss M (2013) Assessing the Jarman-Bell Principle: scaling of intake, digestibility, retention time and gut fill in mammalian herbivores. *Comparative Biochemistry and Physiology A* 164: 129-140. DOI: <http://dx.doi.org/10.1016/j.cbpa.2012.09.018>

Riek A, Klinkert A, Gerken M, **Hummel J**, Moors E, Südekum K.-H. 2013. Milk output in llamas (*Lama glama*) in relation to energy intake and water turnover measured by an isotope dilution technique. *Journal of Dairy Science* 96: 1815-1819.

Steuer P, Südekum K-H, Müller DWH, Kaandorp J, Clauss M, **Hummel J** (2013) Fibre digestibility in large herbivores as related to digestion type and body mass - an *in vitro* approach. *Comparative Biochemistry and Physiology A* 164: 319-326.

2012:

Arigbede OM, Anele UY, Südekum K-H, **Hummel J**, Oni AO, Olanite JA, Isah AO. 2012. Effects of species and season on chemical composition and ruminal crude protein and organic matter degradability of some multi-purpose tree species by West African dwarf rams. *Journal of Animal Physiology and Animal Nutrition* 96: 250–259. DOI: [10.1111/j.1439-0396.2011.01146.x](https://doi.org/10.1111/j.1439-0396.2011.01146.x)

Longo C, **Hummel J**, Liebich J, Bueno IC, Burauel P, Ambrosano EJ, Abdalla AL, Anele UY, Südekum K-H. 2012. Chemical characterization and *in vitro* biological activity of four tropical legumes, *Styzolobium aterrimum* L., *Styzolobium deerlingianum*, *Leucaena leucocephala* and *Mimosa caesalpiniaefolia*, as compared to a tropical grass, *Cynodon* spp. *Czech Journal of Animal Science* 57: 255-264.

Mobashar M, Blank R, **Hummel J**, Westphal A, Tholen E, Südekum K-H. 2012. Ruminal ochratoxin A degradation – contribution of different microbial populations and influence of diet. *Animal Feed Science Technology* 171: 85-97. doi:[10.1016/j.anifeedsci.2011.10.002](https://doi.org/10.1016/j.anifeedsci.2011.10.002)

Müller DWH, Codron D, Werner J, Fritz J, **Hummel J**, Griebeler EM, Clauss M. 2012. Dichotomy of eutherian reproduction and metabolism. *Oikos* 121: 102-115. doi: [10.1111/j.1600-0706.2011.19505.x](https://doi.org/10.1111/j.1600-0706.2011.19505.x)

Serrano E, Verheyden H, **Hummel J**, Cargnelutti B, Lourtet B, González-Candela M, Anguibault JM, Hewison AJM, Clauss M. Digestive plasticity as a response to woodland fragmentation in roe deer. *Ecological Research* 27: 77-82. DOI [10.1007/s11284-011-0872-x](https://doi.org/10.1007/s11284-011-0872-x)

2011:

Anele UY, Südekum K-H, **Hummel J**, Arigbede OM, Oni AO, Olanite JA, Böttger C, Ojo VO, Jolaosho AO. 2011. Chemical characterization, *in vitro* dry matter and ruminal crude protein degradability and microbial protein synthesis of some cowpea (*Vigna unguiculata*

- L. Walp) haulm varieties. Animal Feed Science and Technology 163: 161-169. doi:10.1016/j.anifeedsci.2010.11.005
- Can A, **Hummel J**, Denek N, Südekum K-H. 2011. Effects of non-enzymatic browning reaction intensity on in vitro ruminal protein degradation and intestinal protein digestion of soybean and cottonseed meals. Animal Feed Science and Technology 163: 255-259. doi:10.1016/j.anifeedsci.2010.11.003
- Clauss M, Lechner I, Barboza P, Collins W, Tervoort TA, Südekum K-H, Codron D, **Hummel J**. 2011. The effect of size and density on the mean retention time of particles in the gastrointestinal tract of muskoxen (*Ovibos moschatus*) and moose (*Alces alces*). British Journal of Nutrition 105: 634-644.
- Clauss M, Lunt N, Ortmann S, Plowman A, Codron D, **Hummel J**. 2011. Fluid and particle passage in three duiker species. European Journal of Wildlife Research 57: 143-148.
- Franz R, Soliva CR, Kreuzer M, **Hummel J**, Clauss M. 2011. Methane output of rabbits (*Oryctolagus cuniculus*) and guinea pigs (*Cavia porcellus*) fed a hay-only diet: implications for the scaling of methane production with body mass in non-ruminant mammalian herbivores. Comparative Biochemistry and Physiology A 158: 177-181. doi:10.1016/j.cbpa.2010.10.019
- Franz R, **Hummel J**, Müller DWH, Bauert M, Hatt JM, Clauss M. 2011. Herbivorous reptiles and body mass: effects on food intake, digesta retention, digestibility and gut capacity, and a comparison with mammals. Comparative Biochemistry and Physiology A 158: 94-101.
- Franz R, Kreuzer M, **Hummel J**, Hatt J-M, Clauss M. 2011. Intake, selection, digesta retention, digestion and gut fill of two coprophagous species, rabbits (*Oryctolagus cuniculus*) and guinea pigs (*Cavia porcellus*), on a hay-only diet. Journal of Animal Physiology and Animal Nutrition 95: 564-570. doi: 10.1111/j.1439-0396.2010.01084.x
- Franz R, Soliva CR, Kreuzer M, Hatt J-M, Furrer S, **Hummel J**, Clauss M. 2011. Methane output of tortoises: Its contribution to energy loss related to herbivore body mass. PLoS ONE 6: e17628, 5 pp.
- Fritz J, **Hummel J**, Kienzle E, Wings O, Streich WJ, Clauss M. 2011. Gizzard vs. teeth, it's a tie: food-processing efficiency in herbivorous birds and mammals and implications for dinosaur feeding strategies. Paleobiology 37: 577-586.
- Hebel C., Ortmann S., Hammer S, Hammer C, Fritz J, **Hummel J**, Clauss M, Codron D. 2011. Solute and particle retention in the digestive tract of the Phillip's dikdik (*Madoqua saltiana phillipsi*), a very small browsing ruminant: Biological and methodological implications. Comparative Biochemistry and Physiology A 159: 284-290.
- Hummel J**, Findeisen E, Südekum K-H, Ruf I, Kaiser TM, Bucher M, Clauss M, Codron D. 2011. Another one bites the dust - faecal silica levels in large herbivores correlate with hypsodonty. Proceedings of the Royal Society B 278: 1742-1747. doi: 10.1098/rspb.2010.1939
(Kommentar Hummel et al. 2011: Research Highlights Nature: 2014. Bad for your teeth? Nature 472: 9.)
- Mau M, Johann A, Sliwa A, **Hummel J**, Südekum K-H. 2011. Morphological and physiological aspects of digestive processes in the graminivorous primate *Theropithecus gelada* – a preliminary study. American Journal of Primatology 73: 449-457. doi: 10.1002/ajp20921.

Müller DWH, Caton J, Codron D, Schwarm A, Lentle R, Streich WJ, **Hummel J**, Clauss M. 2011. Phylogenetic constraints on digesta separation: Variation in fluid throughput in the digestive tract in mammalian herbivores. Comparative Biochemistry and Physiology A 160: 207-220. doi:10.1016/j.cbpa.2011.06.004

Sander M, Christian A, Clauss M, Fechner R, Gee CT, Griebeler E-M, Gunga H-C, **Hummel J**, Mallison H, Perry SF, Preuschoft H, Rauhut OWM, Remes K, Tütken T, Wings O, Witzel U. 2011. Biology of the sauropod dinosaurs: the evolution of gigantism. Biological Reviews 86: 117-155. doi: 10.1111/j.1469-185X.2010.00137.x

Steuer P, Südekum K-H, Franz R, Kaandorp J, Clauss M, **Hummel J**. 2011. Is there an influence of body size on mean retention time in herbivores? A comparative study on ungulates. Comparative Biochemistry and Physiology A 160: 355-364. doi:10.1016/j.cbpa.2011.07. 005

2010:

Clauss M, Hume I, **Hummel J**. 2010. Evolutionary adaptations of ruminants and their potential relevance for modern production systems. Animal 4: 979-992.

Clauss M, Hofmann RR, Streich WJ, Fickel J, **Hummel J**. 2010. Convergence in the macroscopic anatomy of the reticulum in wild ruminant species of different feeding types and a new resulting hypothesis on reticular function. Journal of Zoology 281: 26-38.

Clauss M, Lang-Deuerling S, Müller DWH, Kienzle E, Steuer P, **Hummel J**. 2010. Retention of fluid and particles in captive tapirs (*Tapirus* sp.). Comparative Biochemistry and Physiology A 157: 95-101.

Franz R, Soliva CR, Kreuzer M, Steuer P, **Hummel J**, Clauss M. 2010. Methane production in relation to body mass of ruminants and equids. Evolutionary Ecology Research 12: 727-738.

Fritz J, **Hummel J**, Kienzle E, Streich WJ, Clauss M. 2010. To chew or not to chew: faecal particle size in herbivorous reptiles and mammals. Journal of Experimental Zoology 313 A: 579-586. (DOI: 10.1002/jez.629)

Kaiser T, Fickel J, Streich WJ, **Hummel J**, Clauss M. 2010 Enamel ridge alignment in upper molars of ruminants in relation to their natural diet. Journal of Zoology 281: 12-25.

Lechner I, Barboza P, Collins W, Fritz J, Günther D, Hattendorf B, **Hummel J**, Südekum K-H, Clauss M. 2010. Differential passage of fluids and different-sized particles in fistulated oxen (*Bos primigenius f. Taurus*), muskoxen (*Ovibos moschatus*) reindeer (*Rangifer tarandus*) and moose (*Alces alces*): Rumen particle size discrimination is independent from contents stratification. Comparative Biochemistry and Physiology A 155: 211-222.

Meyer K, **Hummel J**, Clauss M. 2010. The relationship between forage cell wall content and voluntary food intake in mammalian herbivores. Mammal Reviews 40: 221-245.

Mobashar M, **Hummel J**, Blank R, Südekum K-H. 2010. Ochratoxin A in ruminants – a review on its degradation by gut microbes and effects on animals. Toxins 2: 809-839.

Steuer P, Clauss M, Südekum K-H, Hatt J-M, Silinski S, Klomberg S, Zimmermann W, Fickel J, Streich WJ, **Hummel J**. 2010. Comparative investigations on digestion in grazing (*Ceratotherium simum*) and browsing (*Diceros bicornis*) rhinoceroses. Comparative Biochemistry and Physiology A 156: 380-388.

2009:

Can A, **Hummel J**, Mobashar M, Boeser U, Südekum K-H. 2009. Comparison of sheep ruminal fluid with sheep and horse faeces as inoculum for *in vitro* gas production measurements. *Journal of Applied Animal Research* 35: 143-148.

Clauss M, Fritz J, Bayer D, Nygren C, Hammer S, Hatt J-M, Südekum K-H, **Hummel J**. 2009. Physical characteristics of rumen contents in four large ruminants of different feeding type, the addax (*Addax nasomaculatus*), bison (*Bison bison*), red deer (*Cervus elaphus*) and moose (*Alces alces*). *Comparative Biochemistry and Physiology A* 152: 398-406.

Clauss M, Fritz J, Bayer D, **Hummel J**, Streich WJ, Südekum K-H, Hatt J-M. 2009. Physical characteristics of rumen contents in two small ruminants of different feeding type, the mouflon (*Ovis ammon musimon*) and the roe deer (*Capreolus capreolus*). *Zoology*. 112: 195-205.

Clauss M, Hofmann RR, Fickel J, Streich WJ, **Hummel J**. 2009. The intraruminal papillation gradient in wild ruminants of different feeding types: implications for rumen physiology. *Journal of Morphology* 270: 929-942.

Clauss M, Nunn C, Fritz J, **Hummel J**. 2009. Evidence for a tradeoff between retention time and chewing efficiency in large mammalian herbivores. *Comparative Biochemistry and Physiology A* 154: 376-382.

Clauss M, Land-Deuerling S, Kienzle E, Medici EP, **Hummel J**. 2009. Mineral absorption in tapirs (*Tapirus spp.*) as compared to the domestic horse. *Journal of Animal Physiology and Animal Nutrition* 93: 768-776.

Franz R, **Hummel J**, Kienzle E, Kölle P, Gunga H-C, Clauss M. 2009. Allometry of visceral organs in living amniotes and its implications for sauropod dinosaurs. *Proceedings of the Royal Society B* 276: 1731-1736.

Fritz J, **Hummel J**, Kienzle E, Arnold C, Nunn C, Clauss M. 2009. Chewing efficiency in mammalian herbivores. *Oikos* 118:1623-1632.

Hummel J, Südekum K-H, Bayer D, Ortmann S, Hatt JM, Clauss M. 2009. Physical characteristics of reticuloruminal contents of cattle in relation to forage type and time after feeding. *Journal of Animal Physiology and Animal Nutrition* 93: 209-220.

Lechner, I., Barboza, P., Collins, W., Günther, D., Hattendorf, B., **Hummel, J.**, Clauss, M., 2009. No 'bypass' in adult ruminants: passage of fluid ingested vs. fluid inserted into the rumen in fistulated muskoxen (*Ovibos moschatus*), reindeer (*Rangifer tarandus*) and moose (*Alces alces*). *Comparative Biochemistry and Physiology A* 154: 151-156.

Schwarz A, Schweigert M, Ortmann S, **Hummel J**, Lang S, Janssen G, Streich WJ, Clauss M. 2009. No easy solution for the fractionation of faecal nitrogen in captive wild herbivores: results of a pilot study. *Journal of Animal Physiology and Animal Nutrition* 93: 596-605.

2008:

Clauss M, **Hummel J**, Streich WJ, Südekum K-H. 2008. Mammalian metabolic rate scaling to 2/3 or ¾ depends on the presence of gut contents. *Evolutionary Ecology Research* 10: 153-154.

Clauss M., Hofmann RR, Streich JW, Fickel J, **Hummel J**. 2008. Higher masseter muscle mass in grazing than in browsing ruminants. *Oecologia* 157: 377-385.

- Clauss M, Streich WJ, Nunn CL, Ortmann S, Hohmann G, Schwarm A, **Hummel J.** 2008. The influence of natural diet composition, food intake level, and body size on ingesta passage in primates. Comparative Biochemistry and Physiology A 150: 274-281.
- Clauss M, Wittenbrink MM, Castell JC, Kienzle E, Dierenfeld ES, Flach EJ, Macgregor SK, Hoppe T, **Hummel J.**, Streich WJ, Hatt JM. 2008. Quantification of Enterobacteriaceae in faeces of captive black rhinoceros (*Diceros bicornis*) in relation to dietary tannin supplementation. Journal of Animal Physiology and Animal Nutrition 92: 29-34.
- Clauss M, **Hummel J.**, Schwarm A, Steuer P, Fritz J, Martin Jurado O, Tschudin A, Hatt JM. 2008. An isthmus at the caecocolical junction is an anatomical feature of domestic and wild equids. European Journal of Wildlife Research 54: 347-351.
- Hofmann RR, Streich WJ, Fickel J, **Hummel J.**, Clauss M. 2008. Convergent evolution in feeding types: Salivary gland mass differences in wild ruminant species. Journal of Morphology. Volume 269: 240-257.
- Hummel J.**, Fritz J, Kienzle E, Medici EP, Lang S, Zimmermann W, Streich WJ, Clauss M. 2008. Differences in fecal particle size between free-ranging and captive individuals of two browser species. Zoo Biology 27: 70-77.
- Hummel J.**, Clauss M. 2008. Megaherbivores as pacemakers of carnivore diversity and biomass: distributing or sinking trophic energy? Evolutionary Ecology Research 10: 925-930.
- Hummel J.**, Steuer P, Südekum K-H, Hammer S, Hammer C, Streich WJ, Clauss M. 2008. Fluid and particle retention in the digestive tract of the addax antelope (*Addax nasomaculatus*) - adaptations of a grazing desert ruminant. Comparative Biochemistry and Physiology A 149: 142-149.
- Hummel J.**, Gee CT, Südekum K-H, Sander PM, Nogge G, Clauss M. 2008. In vitro digestibility of fern and gymnosperm foliage: implications for sauropod feeding ecology and diet selection. Proceedings of the Royal Society B 275: 1015-1021.
- Munn A, Streich WJ, **Hummel J.**, Clauss M. 2008. Modelling digestive constraints in non-ruminant and ruminant foregut-fermenting mammals. Comparative Biochemistry and Physiology A 151: 78-84.
- 2007:**
- Clauss M, Streich WJ, Schwarm A, Ortmann S, **Hummel J.** 2007. The relationship of food intake and ingesta passage predicts feeding ecology in two different megaherbivore groups. Oikos 116:209-216.
- Clauss M, Schwarm A, Ortmann S, Streich WJ, **Hummel J.** 2007. A case of non-scaling in mammalian physiology? Body size, digestive capacity, food intake, and ingesta passage in mammalian herbivores. Comparative Biochemistry and Physiology A 148: 249-265.
- Clauss M, Castell JC, Kienzle E, Dierenfeld ES, Flach EJ, Behlert O, Ortmann S, Streich WJ, **Hummel J.**, Hatt JM. 2007. The influence of tannin supplementation on digestive performance in captive black rhinoceros (*Diceros bicornis*). Journal of Animal Physiology and Animal Nutrition 91: 449-458.
- Clauss M, Castell JC, Kienzle E, Schramel P, Dierenfeld ES, Flach EJ, Behlert O, Streich WJ, **Hummel J.**, Hatt JM. 2007. Mineral absorption in the black rhinoceros (*Diceros bicornis*) as compared to the domestic horse. Journal of Animal Physiology and Animal Nutrition 91: 193-204.
- 2006:**

Clauss M, Castell JC, Kienzle E, Schramel P, Dierenfeld ES, Flach EJ, Behlert O, Hatt JM, Streich WJ, **Hummel J.** 2006. Macromineral absorption in the black rhinoceros (*Diceros bicornis*) as compared to the domestic horse. *The Journal of Nutrition* 136:2017S-2020S.

Clauss M, Steinmetz HP, Eulenberger U, Ossent P, Zingg R, **Hummel J**, Hatt JM. 2006. Observations on the length of the intestinal tract of African *Loxodonta africana* (Blumenbach 1797) and Asian elephants *Elephas maximus* (Linné 1735). *European Journal of Wildlife Research* 53:68-72.

Clauss M, Pellegrini N, Castell JC, Kienzle E, Dierenfeld ES, **Hummel J**, Flach EJ, Streich WJ, Hatt JM. 2006. Antioxidant status of feces of captive black rhinoceros (*Diceros bicornis*) in relation to dietary tannin supplementation. *Journal of Veterinary Medicine Series A* 53:319-322.

Clauss M, **Hummel J**, Streich WJ. 2006. The dissociation of the fluid and particle phase in the forestomach as a physiological characteristic of large grazing ruminants: an evaluation of available, comparable ruminant passage data. *European Journal of Wildlife Research* 52:88-98.

Clauss M, Hofmann RR, **Hummel J**, Adamczewski J, Nygren K, Pitra C, Streich WJ, Reese S. 2006. The macroscopic anatomy of the omasum of free-ranging moose (*Alces alces*) and muskoxen (*Ovibos moschatus*) and a comparison of the omasal laminal surface area in 34 ruminant species. *The Journal of Zoology (London)* 270:346-358.

Clauss M, Castell JC, Kienzle E, Dierenfeld ES, Flach EJ, Behlert O, Ortmann S, Streich WJ, **Hummel J**, Hatt JM. 2006. Digestion coefficients achieved by the black rhinoceros (*Diceros bicornis*), a large browsing hindgut fermenter. *Journal of Animal Physiology and Animal Nutrition* 90:325-334.

Hummel J, Südekum K-H, Streich WJ, Clauss M. 2006. Forage fermentation patterns and their implications for herbivore ingesta retention times. *Functional Ecology* 20:989-1002. <https://doi.org/10.1111/j.1365-2435.2006.01206.x>

Hummel J, Pfeffer E, Nørgaard C, Johanson K, Clauss M, Nogge G. 2006. Energy supply of the okapi in captivity: Intake and digestion trials. *Zoo Biology* 25:251-266.

Hummel J, Nogge G, Clauss M, Nørgaard C, Johanson K, Nijboer J, Pfeffer E. 2006. Energy supply of the okapi in captivity: Fermentation characteristics of feedstuffs. *Zoo Biology* 25:303 - 316.

Schwarm A, Ortmann S, Hofer H, Streich WJ, Flach EJ, Kühne R, **Hummel J**, Castell JC, Clauss, M. 2006. Digestion studies in captive Hippopotamidae: a group of large ungulates with an unusually low metabolic rate. *Journal of Animal Physiology and Animal Nutrition* 90:300-308.

2005:

Clauss M, **Hummel J**. 2005. The digestive performance of mammalian herbivores: Why big may not be that much better. *Mammal Review* 35:174-187.

Clauss M, Froeschle T, Castell J, Hatt JM, Ortmann S, Streich WJ, **Hummel J**. 2005. Fluid and particle retention times in the black rhinoceros *Diceros bicornis*, a large hindgut-fermenting browser. *Acta Theriologica* 50:367-376.

Clauss M, Robert N, Walzer C, Vitaud C, **Hummel J**. 2005. Testing predictions on body mass and gut contents: dissection of an African elephant *Loxodonta africana* Blumenbach 1797. *European Journal of Wildlife Research* 51:291-294.

Clauss M, **Hummel J**, Vercammen F, Streich WJ. 2005. Observations on the macroscopic digestive anatomy of the Himalayan Tahr (*Hemitragus jemlahicus*). Anatomia Histologia Embryologia 34:276-278

Hatt JM, Schaub D, Wanner M, Wettstein HR, Flach EJ, Tack C, Hässig M, Ortmann S, **Hummel J**, Clauss M. 2005. Energy and fibre intake in a group of captive giraffe (*Giraffa camelopardalis*) offered increasing amounts of browse. Journal of Veterinary Medicine Series A 52:485-490

Hummel J, Clauss M, Zimmermann W, Johanson K, Nørgaard C, Pfeffer E. 2005. Fluid and particle retention in captive okapi (*Okapia johnstoni*). Comparative Biochemistry and Physiology A 140:436-444.

2004:

Clauss M, Schwarm A, Ortmann S, Alber D, Flach EJ, Kühne R, **Hummel J**, Streich WJ, Hofer H. 2004. Intake, ingesta retention, particle size distribution and digestibility in the *hippopotamidae*. Comparative Biochemistry and Physiology A 139:449-459

Beiträge zu Büchern / nicht begutachteten Zeitschriften

2024:

Krone B, **Hummel J**. 2024. Partikelgrößenverteilung von Cobs – Wie viel physikalische Struktur steckt noch drin? VDLUFA-Schriftenreihe 81: 507-514.

Sarfo TS, **Hummel J**, Kuhla B, Hünerberg M. 2024. Nährstoffzusammensetzung und sekundäre Inhaltstoffe von Futterlaub. VDLUFA-Schriftenreihe 81: 515-521.

2023:

Hummel J. 2023. Nebenprodukte der Zuckerindustrie. In: Handbuch der Futtermittel (Dänicke S, Flachowsky G, Isselstein J, Jeroch H, Schöne F, Windisch W). S. 368-376. Agrimedia Verlag.

Hummel J. 2023. Knollen und Wurzeln. In: Handbuch der Futtermittel (Dänicke S, Flachowsky G, Isselstein J, Jeroch H, Schöne F, Windisch W). S. 223-246. Agrimedia Verlag.

Schöne F, **Hummel J**. 2023. Grünfutter als Koppelprodukt. In: Handbuch der Futtermittel (Dänicke S, Flachowsky G, Isselstein J, Jeroch H, Schöne F, Windisch W). S. 178-182. Agrimedia Verlag.

2022:

Engelhard T, Zschiesche M, Meyer A, Albers C, Hünerberg M, Albers D, **Hummel J**. 2022. Einsatz von Ackerbohnen als hofeigenes Eiweißfuttermittel in Milchkuhrationen zur anteiligen Substitution von Rapsextraktionsschrot. Tagungsband 22. Forum Angewandte Forschung. S. 80-83.

Jansen H, Zschiesche M, Sharifi AR, Albers D, **Hummel J**. 2022. Indikatoren für die subklinische Ketose in Praxisbetrieben. Tagungsband 22. Forum Angewandte Forschung. S. 42-45.

Sünder A, **Hummel J**. 2022. Methodenvergleich für die Ermittlung des NDLXP-Gehaltes am Beispiel von Esparsette- und Luzerneproben. VDLUFA-Schriftenreihe 78: 556-563.

2021:

Brandes J, **Hummel J**, Sünder A. 2021. Untersuchungen zu Futterwertkennzahlen von Esparsette und Luzerne für den Einsatz in Pferderationen. VDLUFA-Schriftenreihe 77: 282-290.

2020:

Gerlach K, **Hummel J**. 2020. Use of by-products in ruminants. Proceedings of the Society Nutrition Physiology 29: 158-161.

Hummel J, Clauss M, Südekum K-H. 2020. Aspects of food comminution in ungulates and their consequences for energy budget. In: Mammalian Teeth – Form and Function. T. Martin u. W. v. Koenigswald (eds.). Verlag Dr. Friedrich Pfeil, München. S. 87-101. ISBN 978-3-89937-266-3

2016:

Albers D, Behrendt A, **Hummel J**. 2016. Beim Futter ist noch Luft nach oben. Land & Forst 39: 38-39.

2015:

Hummel J. 2015. Faserreiche Nebenprodukte in der Wiederkäuerernährung. Tagungsband 14. BOKU-Symposium Tierernährung. 24-28.

Kardel S*, Gorniak T, **Hummel J**, Spiekers H, Südekum K-H. 2015. Ammoniumbestimmung aus dem erweiterten Hohenheimer Futterwerttest – ein Vergleich von Analysemethoden. VDLUFA Schriftenreihe 71: 500-508.

Sander J, Gorniak T, **Hummel J**. 2015. peNDF Werte in Praxisrationen – eine Erhebung in 40 Betrieben in Niedersachsen und Nordhessen. Forum angewandte Forschung Fulda 14./15.04.2015. 114-117.

2014:

Augustin D, Walz M, **Hummel J**. 2014. Augen auf beim Maissilagekauf. Biogasjournal 2: 70-74.

Gussek I, **Hummel J**, Südekum K-H. 2014. Qualitätsmerkmale von Luzerneheu als Grobfutter für Laub fressende Wiederkäuer. VDLUFA Kongressband 2014 Hohenheim. 462-468.

Gussek I, **Hummel J**, Südekum K-H. 2014. Getrenntes und sequentielles Verfahren zur Analyse der Säure-Detergenzien-Faser bei pektinhaltigen Futtermitteln. VDLUFA Kongressband 2014 Hohenheim. 497-504.

2013:

Taylor, LA, Rudd J, **Hummel J**, Clauss M, Schwitzer C. 2013. Weight loss in pygmy hippos (*Choeropsis liberiensis*). In: Steck B. International Studbook for the year 2012 – Pygmy Hippopotamus. Basel, Zoo Basel, 20-25.

2011:

Clauss M, Hatt J-M, **Hummel J**. 2011. Greengrocery guide. Zooquaria (Special edition Nutrition News): 22-23.

Hummel J, Clauss M. 2011. Sauropod feeding and digestive physiology. In: Klein N, Remes K, Gee CT, Sander M (eds) Biology of the Sauropod Dinosaurs. Understanding the life of giants. Pp. 11-33. Indiana University Press, Bloomington and Indianapolis.

2010:

Sander M, Gee C, **Hummel J**, Clauss M. 2010. Mesozoic plants and dinosaur herbivory. In: Gee CT (ed) Plants in Mesozoic Time. Pp. 331-359. Indiana University Press, Bloomington and Indianapolis.

2009:

Hummel J, Bickel D, Ziegler T, Fidgett A. 2009. Herbaceous forages as components in diets of herbivorous reptiles. In: Clauss M, Fidgett A, Janssens G, Hatt J-M, Huisman T, Hummel J, Nijboer J, Plowman A: Zoo Animal Nutrition IV. pp 105-115. Filander-Verlag, Fürth.

2008:

Clauss M, Kaiser T, **Hummel J**. 2008. The morphophysiological adaptations of browsing and grazing mammals. In: Gordon IJ, Prins HHT (eds) The ecology of large mammalian herbivore browsing and grazing. Pp 47-88. Springer, Heidelberg.

2007:

Sander M, **Hummel J**, Klein N, Clauss M. 2007. Die Grenzen des Wachstums. Forschung 1/2007: 20-23.

2006:

Clauss M, **Hummel J**. 2006. The next meal is today: feeding recommendations in the absence of scientifically sound results – the question of iron availability. In: Zoo Animal Nutrition III (Fidgett A, Clauss M, Eulenberger K, Hatt JM, Hume I, Janssens G, Nijboer J; eds.). Filander Verlag Fürth. 103-106.

Clauss M, **Hummel J**, Völlm J, Lorenz A, Hofmann RR. 2006. The allocation of a ruminant feeding type to the okapi (*Okapia johnstoni*) on the basis of morphological parameters. In: Zoo Animal Nutrition III (Fidgett A, Clauss M, Eulenberger K, Hatt JM, Hume I, Janssens G, Nijboer J; eds.). Filander Verlag Fürth. 253-270.

Clauss M, Hänichen T, **Hummel J**, Ricker U, Block K, Grest P, Hatt JM. 2006. Excessive iron storage in captive omnivores? The case of the coati (*Nasua* spp.). In: Zoo Animal Nutrition III (Fidgett A, Clauss M, Eulenberger K, Hatt JM, Hume I, Janssens G, Nijboer J; eds.). Filander Verlag Fürth. 91-99.

Clauss M, **Hummel J**, Eloff P, Willats R. 2006. Sources of high iron content in manufactured pelleted feeds: a case report. In: Zoo Animal Nutrition III (Fidgett A, Clauss M, Eulenberger K, Hatt JM, Hume I, Janssens G, Nijboer J; eds.). Filander Verlag Fürth. 101-102.

Clauss M, Hatt J-M, **Hummel J**. 2006. Fütterung großer Pflanzenfresser. In: Arbeitstagung der Zootierärzte im Deutschsprachigen Raum, Frankfurt, 3. – 5. November 2006. 61-74.

Giraffe EEP (2006): EAZA Giraffe Husbandry and Management Guidelines; Nutrition Chapter.

Hummel J, Clauss M, Baxter E, Flach EJ, Johansen K. 2006. The influence of roughage intake on the occurrence of oral disturbances in captive giraffids. In: Zoo Animal Nutrition III (Fidgett A, Clauss M, Eulenberger K, Hatt JM, Hume I, Janssens G, Nijboer J; eds.). Filander Verlag Fürth. 235-252.

2005:

Clauss M, **Hummel J**. 2005. Bemerkungen zur Ernährung von Zootieren. Kraftfutter 12: 12-17.

Hummel J. 2005. Brockhaus Enzyklopädie der Tiere - Giraffen (Allgemein, Giraffe, Okapi). Band 8, 348-351.

2003:

Hummel J, Hörhager A, Nawrocki D. 2003. Selektive Laubfresser – Angemessene Fütterung von Okapis und Giraffen. Zeitschrift des Kölner Zoo 46, 67-80.

Hummel J, Kolter L. 2003. Passage rate and digestion in captive okapi (*Okapia johnstoni*). In: Zoo Animal Nutrition II (Fidgett A, Clauss M, Gansloßer U, Hatt JM, Nijboer J; eds.). Filander Verlag Fürth. 181-192.

Hummel J, Hovenjürgen M, Niess E, Johansen K, Nijboer J, Zimmermann W. 2003. Considerations on feeds used for zoo ruminants. EAZA News (Special issue 3 Zoo Nutrition News).

Hummel J. 2003. Ernährung und Nahrungsaufnahmeverhalten von Okapis (*Okapia johnstoni*) in Zoologischen Gärten. Dissertation Universität Köln.

2001:

Hummel, J. 2001. Regulation der Nahrungsaufnahme. Praxis der Naturwissenschaften 50, 6-13.