

# CURRICULUM VITAE – JORIS MICHIELS

**JORIS MICHIELS**  
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Date and place of birth : 29-06-1972, Oostende, Belgium  
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Current position: Docent tenure track (Professor)  
Department of Applied Biosciences  
Faculty of Bioscience Engineering  
Ghent University  
Valentin Vaerwyckweg 1, 9000, Gent, Belgium

## Background

- Ambitious, dedicated, pragmatic, organiser
- Analytic and creative thinking
- Team-player, communicative
- Languages: Dutch (native language), English (excellent), Spanish and French (good notion), German (basic notion)
- IT-skills: Microsoft office, Endnote, Graphpad Prism, SPSS, SAS, Bestmix
- Affinity with the agricultural sector

## Education and diplomas

- **Mathematics-sciences Secondary education** (1984-1990)  
Onze-Lieve-Vrouw College, Oostende
- **Bioscience Engineer in Agricultural Sciences**, great distinction (1990-1995)  
Ghent University
- **Specific Teacher Training Programme in Educational Sciences** (1995)  
Ghent University
- **PhD in Applied Biological Sciences** (2004-2009)  
Effects of essential oils on gut bacteria and function in the pig  
Promoters: Prof. Stefaan De Smet, Dr. Noël Dierick and Prof. Dirk Fremaut  
Ghent University
- **FELASA C-certificate (Laboratory Animal Science)** (2009-2010)  
Ghent University

## Professional career

- **Scientific collaborator**, Department of Agricultural Economics, Ghent University (1995-1996)  
Project: Scenario development for land use for agricultural and horticultural purposes in Flanders
- **Scientific collaborator**, Institute for Agricultural and Fisheries Research (1996-1998)  
Project: Mineral balances in dairy farming and nitrogen efficiency in fodder crops
- **Teacher** secondary education, KTA Vesaliusinstituut and Ensorinstituut in Oostende (1999-2003)  
Courses: chemistry, biology, anatomy, phytopharmacy, toxicology
- **Research assistant**, Department of Animal Production, University College Ghent (2004-2009)  
Phd research: Effects of essential oils on gut bacteria and function in the pig  
Education for students Master in Applied Biosciences
- **Doctor-assistant, Department of Animal Production, University College Ghent (2009-2013) and Department of Applied Biosciences, Ghent University (2013-2016)**
- **Docent tenure track (Professor), Department of Applied Biosciences, Ghent University (2016-current)**
  - 1/ Research, coordination of projects and public services in the field of pig and poultry nutrition, digestive physiology and feed analyses
  - 2/ Education for students Master in Applied Biosciences (courses: basic courses animal biology and physiology; digestive physiology, pig nutrition), promoter of Master theses and co-promotor of PhD theses

## Expertise and research statement

Currently, I'm heading the research group on nutrition and digestive physiology of monogastric farm animals (pigs and poultry), embedded in the Department of Applied Biosciences of the Faculty of Bioscience Engineering, Ghent University. The research group has built up over the years a strong expertise in understanding digestive processes, interaction with feed ingredients and microbiota and developing *in vitro* and *in vivo* tools to study the digestive physiology. This is the field where my expertise is situated, and will be extended in the future. I'm promoting innovative research to improve nutrient utilization and animal performances and health, in particular to optimize digestive function in the weaned piglet and broilers. This resulted in numerous research topics and projects in which I was involved, mostly related with feed additives: use of exogenous enzymes, medium-chain fatty acids, fermentable fibers, essential oils, fermented liquid feed, probiotics and more recently the study of oxidative stress in the gut and supplementation of antioxidants. Particular attention goes to disadvantaged stages of animal production such as the intra-uterine growth restricted pig or the heat stressed finishing broiler. I'm (co)author of more than 40 articles published in journals indexed in WoS . By now, I'm tutoring and co-promoting 5 PhD students and leading several research projects. I'm member of the International Steering Committee of the tri-annual Digestive Physiology of Pigs symposium (2012-current), member of the editorial board of Journal of Animal Science and Biotechnology, frequent reviewer for several journals, frequent member of examination and reading committees of PhD thesis and I have well elaborated contacts with industrial and scientific partners world-wide.

## List of publications

### a1 Articles in peer-reviewed journals included in Web of Science (impact factor and ranking)

1. **Michiels J**, Missotten J, Fremaut D, De Smet S & Dierick Na (2007) In vitro dose-response of carvacrol, thymol, eugenol and trans-cinnamaldehyde and interaction of combinations for the antimicrobial activity against the pig gut flora. *Livestock Science* **109**, 157-160. [IF(2007) = 0.610; Rank 29/47 in Agriculture, Dairy & Animal Science; Times cited WoS = 33]
2. Missotten J, **Michiels J**, Goris J, Herman L, Heyndrickx M, De Smet S & Dierick Na (2007) Screening of 2 probiotic products for use in fermented liquid feed. *Livestock Science* **108**, 232-235. [IF(2007) = 0.610; Rank 29/47 in Agriculture, Dairy & Animal Science; Times cited WoS = 11]
3. **Michiels J**, Missotten J, Dierick N, Fremaut D, Maene P & De Smet S (2008) In vitro degradation and in vivo passage kinetics of carvacrol, thymol, eugenol and trans-cinnamaldehyde along the gastrointestinal tract of piglets. *Journal of the Science of Food and Agriculture* **88**, 2371-2381. [IF(2008) = 1.333; Rank 6/35 in Agriculture, Multidisciplinary; Times cited WoS = 43]
4. Missotten JAM, Goris J, **Michiels J**, Van Coillie E, Herman L, De Smet S, Dierick Na & Heyndrickx M (2009) Screening of isolated lactic acid bacteria as potential beneficial strains for fermented liquid pig feed production. *Animal Feed Science and Technology* **150**, 122-138. [IF(2009) = 1.866; Rank 4/52 in Agriculture, Dairy & Animal Science; Times cited WoS = 17]
5. **Michiels J**, Missotten JAM, Fremaut D, De Smet S & Dierick Na (2009) In vitro characterisation of the antimicrobial activity of selected essential oil components and binary combinations against the pig gut flora. *Animal Feed Science and Technology* **151**, 111-127. [IF(2009) = 1.866; Rank 4/52 in Agriculture, Dairy & Animal Science; Times cited WoS = 22]
6. **Michiels J**, Missotten JAM, Van Hoorick A, Owyn A, Fremaut D, De Smet S & Dierick Na (2010) Effects of dose and formulation of carvacrol and thymol on bacteria and some functional traits of the gut in piglets after weaning. *Archives of Animal Nutrition* **64**, 136 – 154. [IF(2010) = 1.165; Rank 20/56 in Agriculture, Dairy & Animal Science; Times cited WoS = 16]
7. Missotten JAM, **Michiels J**, Willems W, Owyn A, De Smet S & Dierick Na (2010) Effect of fermented liquid feed on morpho-histological parameters in the piglet gut. *Livestock Science* **134**, 155-157. [IF(2010) = 1.295; Rank 12/56 in Agriculture, Dairy & Animal Science; Times cited WoS = 3]
8. **Michiels J**, Missotten J, Dierick N, Fremaut D & De Smet S (2010) Thymol and trans-cinnamaldehyde reduce active nutrient absorption and chloride secretion in the pig jejunal Ussing chamber model. *Livestock Science* **134**, 27-29. [IF(2010) = 1.295; Rank 12/56 in Agriculture, Dairy & Animal Science; Times cited WoS = 4]
9. Missotten JAM, **Michiels J**, Owyn A, De Smet S & Dierick Na (2010) Fermented liquid feed for pigs. *Archives of Animal Nutrition* **64**, 437 - 466. [IF(2010) = 1.165; Rank 20/56 in Agriculture, Dairy & Animal Science; Times cited WoS = 9]
10. Neirinckx E, Vervaeke C, **Michiels J**, De Smet S, Van Den Broeck W, Remon Jp, De Backer P & Croubels S (2011) Feasibility of the Ussing chamber technique for the determination of in vitro jejunal permeability of passively absorbed compounds in different animal species. *Journal of Veterinary Pharmacology and Therapeutics* **34**, 290-297. [IF(2011) = 1.181; Rank 45/145 in Veterinary Sciences; Times cited WoS = 7]
11. **Michiels J**, Missotten J, Owyn A, Dierick N, Fremaut D & De Smet S (2012) Effect of dose of thymol and supplemental flavours or camphor on palatability in a choice feeding study with piglets. *Czech Journal of Animal Science* **57**, 65-74. [IF(2012) = 0.922; Rank 24/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 1]
12. **Michiels J**, Skrivanova E, Missotten J, Owyn A, Mrazek J, De Smet S & Dierick N

- (2012) Intact brown seaweed (*Ascophyllum nodosum*) in diets of weaned piglets: effects on performance, gut bacteria and morphology and plasma oxidative status. *Journal of Animal Physiology and Animal Nutrition* **96**, 1101-1111. [IF(2012) = 1.254; Rank 15/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 4]
13. **Michiels J**, Maertens L, Buyse J, Lemme A, Rademacher M, Dierick Na & De Smet S (2012) Supplementation of guanidinoacetic acid to broiler diets: Effects on performance, carcass characteristics, meat quality, and energy metabolism. *Poultry Science* **91**, 402-412. [IF(2012) = 1.516; Rank 11/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 17]
  14. Rasschaert G, **Michiels J**, Arijs D, Wildemauwe C, De Smet S & Heyndrickx M (2012) Effect of farm type on within-herd *Salmonella* prevalence, serovar distribution, and antimicrobial resistance. *Journal of Food Protection* **75**, 859-866. [IF(2012) = 1.832; Rank 44/124 in Food Science & Technology; Times cited WoS = 8]
  15. **Michiels J**, Missotten J, Rasschaert G, Dierick N, Heyndrickx M & De Smet S (2012) Effect of organic acids on *Salmonella* colonization and shedding in weaned piglets in a seeder model. *Journal of Food Protection* **75**, 1974-1983. [IF(2012) = 1.832; Rank 44/124 in Food Science & Technology; Times cited WoS = 4]
  16. Degroote J, **Michiels J**, Claeys E, Owyn A & De Smet S (2012) Changes in the pig small intestinal mucosal glutathione kinetics after weaning. *Journal of Animal Science* **90**, Supplement 4, 359-361. [IF(2012) = 2.093; Rank 4/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 3]
  17. **Michiels J**, De Vos M, Missotten J, Owyn A, De Smet S & Van Ginneken C (2013) Maturation of digestive function is retarded and plasma antioxidant capacity lowered in fully weaned low birth weight piglets. *British Journal of Nutrition* **109**, 65-75. [IF(2013) = 3.342; Rank 21/79 in Nutrition & Dietetics; Times cited WoS = 10].
  18. Missotten Jam, **Michiels J**, Dierick N, Owyn A, Akbarian A & De Smet S (2013) Effect of fermented moist feed on performance, gut bacteria and gut histo-morphology in broilers. *British Poultry Science* **54**, 627-634. [IF(2013) = 0.782; Rank 28/52 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
  19. Akbarian A, Golian A, Gilani A, Kermanshahi H, Zhaleh S, Akhavan A, De Smet S & **Michiels J** (2013) Effect of feeding citrus peel extracts on growth performance, serum components, and intestinal morphology of broilers exposed to high ambient temperature during the finisher phase. *Livestock Science* **157**, 490-497. [IF(2013) = 1.249; Rank 16/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 4]
  20. Akbarian A, Golian A, Kermanshahi H, Farhoosh R, Raji Ar, De Smet S & **Michiels J** (2013) Growth performance and gut health parameters of finishing broilers supplemented with plant extracts exposed to daily increased temperature. *Spanish Journal of Agricultural Research* **11**, 109-119. [IF(2013) = 0.659; Rank 28/57 in Agriculture, Multidisciplinary; Times cited WoS = 4]
  21. **Michiels J**, Tagliabue Mm, Akbarian A, Owyn A & De Smet S (2014) Oxidative status, meat quality and fatty acid profile of broiler chickens reared under free-range and severely feed-restricted conditions compared with conventional indoor rearing. *Avian Biology Research* **7**, 74-82. [IF(2014) = 0.928; Rank 25/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 2]
  22. De Vos M, Huygelen V, Willemen S, Fransen E, Casteleyn C, Van Cruchten S, **Michiels J** & Van Ginneken C (2014) Artificial rearing of piglets: Effects on small intestinal morphology and digestion capacity. *Livestock Science* **159**, 165-173. [IF(2014) = 1.171; Rank 18/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 1]
  23. Akbarian A, **Michiels J**, Golian A, Buyse J, Wang Y & De Smet S (2014) Gene expression of heat shock protein 70 and antioxidant enzymes, oxidative status, and meat oxidative stability of cyclically heat-challenged finishing broilers fed *Origanum compactum* and *Curcuma xanthorrhiza* essential oils. *Poultry Science* **93**, 1930-1941. [IF(2014) = 1.672; Rank 12/54 in Agriculture, Dairy & Animal Science; Times cited WoS = 2]

24. De Vos M, Che L, Huygelen V, Willemsen S, **Michiels J**, Van Cruchten S & Van Ginneken C (2014) Nutritional interventions to prevent and rear low-birthweight piglets. *Journal of Animal Physiology and Animal Nutrition* **98**, 609-619. [IF(2014) = 1.406; Rank 15/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
25. Akbarian A, Golian A, Kermanshahi H, De Smet S & **Michiels J** (2015) Antioxidant enzyme activities, plasma hormone levels and serum metabolites of finishing broiler chickens reared under high ambient temperature and fed lemon and orange peel extracts and *Curcuma xanthorrhiza* essential oil. *Journal of Animal Physiology and Animal Nutrition* **99**, 150-162. [IF(2015) = 1.212; Rank 18/58 in Agriculture, Dairy & Animal Science; Times cited WoS = 1]
26. Chen H, Wang W, Degroote J, Possemiers S, Chen D, De Smet S & **Michiels J** (2015) Arabinoxylan in Wheat is More Responsible Than Cellulose for Promoting the Intestinal Barrier Function in Weaned Male Piglets. *The Journal of Nutrition* **145**, 51-58. [IF(2015) = 3.740; Rank 17/80 in Nutrition & Dietetics; Times cited WoS = 3].
27. Hashemi Smb, **Michiels J**, Asadi H & Hosseini M (2015) Kolkhoung (*Pistacia khinjuk*) kernel oil quality is affected by different parameters in pulsed ultrasound-assisted solvent extraction. *Industrial Crops and Products* **70**, 28-33. [IF(2015) = 3.449; Rank 6/83 in Agronomy; Times cited WoS = 0]
28. Missottten JAM, **Michiels J**, Willems W, Ovyne A, De Smet S & Dierick N (2015) Fermented liquid feed for weaned piglets : impact of sedimentation in the feed slurry on performance and gut parameters. *Czech Journal Animal Science* **60**, 195-207. [IF(2015) = 0.809; Rank 27/58 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
29. Vergauwen H, Tambuyzer B, Degroote J, De Smet S, **Michiels J** & Van Ginneken C (2015) Assessment of oxidative stress in the gastrointestinal tract: An *in vitro* IPEC-J2 model. *PLoS ONE* **10**, e0120485. [IF(2015) = 3.057; Rank 11/63 in Multidisciplinary Sciences; Times cited WoS = 2]
30. Chen H, Xiangbing M, Lianqiang C, Jia Y, Bing Y, Jun H, Zhiqing H, Jie Y, Ping Z, **Michiels J**, De Smet S & Daiwen C (2015) Comparison of jejuna digestive enzyme activities, expression of nutrient transporter genes, and apparent fecal digestibility in weaning piglets fed diets with varied sources of fiber. *Journal of Animal and Feed Sciences* **24**, 41-47. [IF(2015) = 0.511; Rank 41/58 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
31. Missotten J, **Michiels J**, Ovyne A, Dierick N & De Smet S (2015) Fermented liquid feed for pigs: an ancient technique for the future. *Journal of Animal Science and Biotechnology* **6**, 4. [IF(2015) = 2.037; Rank 5/58 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
32. Pauwels J, Coopman F, Cools A, **Michiels J**, Fremaut D, De Smet S & Janssens GPJ (2015) Selection for growth performance in broiler chickens associates with less diet flexibility. *PLoS ONE* **10**, e0127819. [IF(2015) = 3.057; Rank 11/63 in Multidisciplinary Sciences; Times cited WoS = 0]
33. Rasschaert G, **Michiels J**, Tagliabue M, Missotten J, De Smet S & Heyndrickx M (2016) Effect of organic acids on *Salmonella* shedding and colonization in pigs on a farm with high *Salmonella* prevalence. *Journal of Food Protection* **79**, 51-58. [IF(2014) = 1.849; Rank 40/123 in Food Science & Technology; Times cited WoS = 0]
34. Wang W, Degroote J, Van Ginneken C, Van Poucke M, Vergauwen H, Dam TMT, Vanrompay D, Peelman LJ, De Smet S & **Michiels J** (2016) Intrauterine growth restriction in neonatal piglets affects small intestinal mucosal permeability and mRNA expression of redox-sensitive genes. *The FASEB Journal* **30**, 863-873. [IF(2014) = 5.043; Rank 9/85 in Biology; Times cited WoS = 0]
35. De Smet S, **Michiels J**, Ovyne A, Dierick N, Laget M, Cools A & Lauwaerts A (2016) Gut antibacterial effects of C7 and C9 carboxylic acids in the diet of piglet. *Journal of Animal Science* **94**, supplement 3, 54-57. [IF(2014) = 2.018; Rank 5/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]

36. **Michiels J**, Possemiers S, Degroote J, Owyn A, De Smet S & Nakamura N (2016) Feeding *Bacillus subtilis* C-3102 to sows and suckling piglets and to weaned piglets improves parameters of gut health and feed:gain ratio in weaners. *Journal of Animal Science* **94**, supplement 3, 135-137. [IF(2014) = 2.018; Rank 5/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
37. Akbarian A\*, **Michiels J\***, Degroote J, Majdeddin M, Golian A & De Smet S (2016) Association between heat stress and oxidative stress in poultry; mitochondrial dysfunction and dietary interventions with phytochemicals. *Journal of Animal Science and Biotechnology* **7**, 37. (\*, equal contribution as first-author) [IF(2015) = 2.037; Rank 5/58 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
38. van Kempen TATG, Reijersen MH, de Bruijn C, De Smet S, **Michiels J**, Traber MG & Lauridsen C (2016) Vitamin E plasma kinetics in swine show low bioavailability and short half-life of all-rac- $\alpha$ -tocopheryl acetate. *Journal of Animal Science* **94**, 4188-4195. [IF(2014) = 2.018; Rank 5/57 in Agriculture, Dairy & Animal Science; Times cited WoS = 0]
39. Chen H, Chen D, Qin W, Liu Y, Che L, Huang Z, Luo Y, Zhang Q, Lin D, Liu Y, Han G, De Smet S & **Michiels J** (online) Wheat bran components modulate intestinal bacteria and gene expression of barrier function relevant proteins in a piglet model. *International Journal of Food Sciences and Nutrition*, DOI: 10.1080/09637486.09632016.01212817.
40. Gunness P, **Michiels J**, Vanhaecke L, De Smet S, Kravchuk O, Van de Meene A & Gidley MJ (online) Reduction in circulating bile acid and restricted diffusion across the intestinal epithelium are associated with a decrease in blood cholesterol in the presence of oat  $\beta$ -glucan. *The FASEB Journal*, DOI: 10.1096/fj.201600465R
41. Spranghers T, Ottoboni M, Klootwijk C, Owyn A, Deboosere S, De Meulenaer B, **Michiels J**, Eeckhout M, De Clercq P & De Smet S (online) Nutritional composition of black soldier fly (*Hermetia illucens*) prepupae reared on different organic waste substrates. *Journal of the Science of Food and Agriculture*, DOI: 10.1002/jsfa.8081.
42. Vergauwen H, Degroote J, Prims S, Wang W, Fransen E, De Smet S, Casteleyn C, Van Cruchten S, **Michiels J** & Van Ginneken C (accepted) Artificial rearing influences the morphology, permeability and redox state of the gastrointestinal tract of low and normal birthweight piglets. *Journal of Animal Science and Biotechnology*.

**p1 Conference proceedings in peer-reviewed journals included in Web of Science (impact factor and ranking)**

1. **Michiels J**, De Vos M, Missotten J, Owyn A, De Smet S & Van Ginneken C (2011) Digestive function and plasma oxidative status of intra-uterine growth retarded fully-weaned piglets. *Journal of Animal Science* **89**, **E-Suppl. 1**, 738. [IF(2011) = 2.096; Rank 4/54 in Agriculture, Dairy & Animal Science]
2. **Michiels J**, Claeys E, Owyn A & De Smet S (2011) Age post-weaning but not birth-weight and sex affects the small intestinal glutathione redox status of piglets. *Journal of Animal Science* **89**, **E-Suppl. 1**, W131. [IF(2011) = 2.096; Rank 4/54 in Agriculture, Dairy & Animal Science]
3. Tagliabue M, Akbarian A, **Michiels J**, Owyn A & De Smet S (2012) The antioxidant system in broilers is altered under free-range conditions and fed restrictedly. *World's Poultry Science Journal* **68**, **Suppl. 1**, 3 p. [IF(2012) = 1.247; Rank 17/54 in Agriculture, Dairy & Animal Science]
4. Missotten J, **Michiels J**, Owyn A & De Smet S (2012) Effect of fermented liquid feed on performance, gut bacteria and morphology in broilers. *World's Poultry Science Journal* **68**, **Suppl. 1**, 3 p. [IF(2012) = 1.247; Rank 17/54 in Agriculture, Dairy & Animal Science]
5. Van Kempen T, Fevery S, **Michiels J**, De Smet S & Van Hees H (2014) Polyphenol blend reduces oxidative stress induced by heat stress in piglets. *The FASEB Journal* **28**, (830.819). [IF(2013) = 5.480; Rank 7/85 in Biology]
6. Gunness P, **Michiels J**, De Smet S, Vanhaecke L & Gidley M (2014) Effects of oat

beta-glucan on bile salts absorption across porcine intestinal mucosa using Ussing chamber system. *The FASEB Journal* **28**, (372.374). [IF(2013) = 5.480; Rank 7/85 in Biology]

#### **a2 Articles in peer reviewed journals not included in a1**

1. Dierick N, **Michiels J** & Van Nevel C (2004) Effect of medium chain fatty acids and benzoic acid, as alternative for antibiotics, on growth and some gut parameters in piglets *Communications in Agricultural and Applied Biological Sciences* **69**, 187-190
2. **Michiels J**, Missotten J, Dierick N, Fremaut D & De Smet S (2005) Antimicrobial activity of selected phytochemicals against the pig gut flora *Communications in Agricultural and Applied Biological Sciences* **70**, 191-194
3. **Michiels J**, Maene P, Missotten J, Dierick N, Fremaut D & De Smet S (2006) Gas-Chromatographic method for quantifying carvacrol, thymol, terpinen-4-ol, trans-anethole, eugenol and trans-cinnamaldehyde in media simulating pig gut conditons. *Communications in Agricultural and Applied Biological Sciences* **71**, 223-226
4. Missotten J, **Michiels J**, Goris J, Herman L, Heynderickx M, De Smet S & Dierick Na (2006) Fermented liquid feed for weaned piglets. *Communications in Agricultural and Applied Biological Sciences* **71**, 227-230
5. Tagliabue Mm, Akbarian A, **Michiels J**, Obyn A & De Smet S (2012) Oxidative status in free-range broilers compared to conventional indoors reared chickens. *Communications in Agricultural and Applied Biological Sciences* **77**, 243-249
6. Chen H, Chen D, **Michiels J** & De Smet S (2013) Dietary fiber affects intestinal mucosal barrier function by regulating intestinal bacteria in weaning piglets. *Communications in Agricultural and Applied Biological Sciences* **78**, 71-78
7. Degroote J, Vergauwen H, Wang W, Van Ginneken C, De Smet S & **Michiels J** (2015) Oxidative status in piglets is affected by the weaning process. *Communications in Agricultural and Applied Biological Sciences* **80**, 183-188
8. Vergauwen H, Prims S, Degroote J, Wang W, Casteleyn C, Van Cruchten S, De Smet **S**, **Michiels J** & Van Ginneken C (accepted) Protective antioxidant effects of rosmarinic acid, quercetin, gallic acid, lipoic acid, ethoxyquin and Se-methionine in a non-tumorigenic, porcine intestinal epithelial cell line. *Antioxidants*.

#### **a4 Articles in national journals without peer review**

1. Fremaut D, D'hooghe K & **Michiels J** (2005) Koolzaadkoek in de diervoeding. *Landbouw & Techniek* **03**, 38-40
2. Fremaut D, Ghekiere D & **Michiels J** (2005) Eiwitten, een noodzakelijk kwaad in het voeder. *Landbouw & Techniek* **12**, 15-17
3. Fremaut D, **Michiels J** & Missotten J (2006) Antibioticatheorie wankelt. *De Molenaar* **22**, 10-12
4. Fremaut D & Michiels J (2007) Een lupinenmenu voor braadkippen. *Pluimvee*, 11-12

#### **c1 Articles and abstracts in proceedings of congresses**

1. Dierick N, **Michiels J** & Van Nevel C (2004) Effect of medium chain fatty acids and benzoic acid, as alternative for antibiotics, on growth and some gut parameters in piglets. In Proceedings of the 3rd AFAC Workshop on Alternatives to Feed Antibiotics and Anticoccidials In the Pig and Poultry Meat Production, September 19-20, 2004, Aarhus, Denmark.
2. **Michiels J**, Missotten J, Dierick N, Fremaut D & De Smet S (2005) In vitro effect of botanicals on gut flora of pigs. In Proceedings of the 30ste Studiedag van de Nederlandstalige Voedingsonderzoekers, 8 april 2005, Merelbeke, Belgium, 67-68.
3. **Michiels J**, Missotten J, Dierick N, Fremaut D & De Smet S (2005) Modifying gut flora in pigs by phytochemicals. In Proceedings of the 10th Symposium Vitamins and

- Additives, September 28-29, 2005, Friedrich Schiller University Jena, Germany, 230-235.
4. Fremaut D, **Michiels J**, De Smet S, Raes K, Van Oeckel M & Warnants N (2005) Toepassing van omega-3 vetzuren in de varkensvoeding: effect op vleeskwiteit en diergezondheid. Studiedag "Omega-3 vetzuren en CLA in de landbouw: perspectieven voor boer en consument", 9 maart 2005, Gent., 6
  5. Missotten J, **Michiels J**, Goris J, Herman L, Heynderickx M, De Smet S & Dierick N (2006) Fermented liquid feed for weaning piglets. In Proceedings of the 31ste Studiedag van de Nederlandstalige Voedingsonderzoekers, 7 april 2006, Rotterdam, Nederland, 16-17.
  6. **Michiels J** (2006) Inzichten en perspectieven voor botanische stoffen met antimicrobiële werking in de varkensvoeding. Studiedag "Alternatieven voor voederantibiotica: zoötechnie en voedselveiligheid verenigd?", 7 september 2006, Gent, 37 p.
  7. **Michiels J**, Missotten J, Fremaut D, De Smet S & Dierick N (2007) Fast intestinal absorption of free carvacrol and thymol compromises antibacterial effects against the pig gut flora. In Book of Abstracts of 38th International Symposium on Essential Oils, September 9-12, 2007, Graz, Austria, 57.
  8. Fremaut D, **Michiels J**, Wullepit N & Nollet L (2008) Effect of Yea-Sacc on the persistency of the milk production in late lactation of healthy and high performing dairy cattle on a high fiber feed. Alltech's European Lecture Tour February 11th, 2008, Zwijnaarde, Belgium.
  9. Missotten J, Willems W, **Michiels J**, De Smet S & Dierick N (2008) Effect of fermented liquid feed on the performance of weaned piglets. In Book of Abstracts of the 59th Annual Meeting of EAAP, August 24-27, 2008 Vilnius, Lithuania, 216.
  10. Van Hoorick A, **Michiels J**, Missotten J, Fremaut D, De Smet S & Dierick N (2008) Effect of dose and formulation of thymol on gut bacteria and indices of gut functionality of weaned piglets. In Proceedings of the 33ste Studiedag van de Nederlandstalige Voedingsonderzoekers, 25 april 2008, Wageningen, The Netherlands. .
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