

CURRICULUM VITAE

Emma Brunberg, Agr. Dr.

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Specialization

I have a broad scientific interest in animal welfare, ethology and genetics with a particular focus on how the combination of environment, ethology and genetics affects animal welfare. My current focus is animal welfare issues in extensive production systems.

Education

Research education

2006-2011 Section of ethology and animal welfare, Department of animal environment and health, Swedish University of Agricultural Sciences, Uppsala Thesis: "Tail biting and feather pecking – using genomics and ethology to explore motivational backgrounds" was defended 30.09.2011

Supervisors:

Professor Linda Keeling, Department of animal environment and health, Swedish University of Agricultural Sciences, Uppsala, Sweden

Professor Per Jensen, IFM Biology, Linköping University, Linköping, Sweden

Dr. Anders Isaksson, Department of Medical Sciences, Uppsala University, Uppsala, Sweden.

During my PhD education my main research area was animal welfare, behaviour and genetics in pigs and poultry. The aim was to explore why abnormal and injurious behaviours occur to increase the welfare of pigs and poultry.

Teaching

Lectures:

Basic ethology (2007)

Applied ethology (2008)

Behaviour genetics (2009, 2010, 2011, 2012)

Genome analysis (2012)

Supervision of master students:

2009: Lizette van Dijk, The Netherlands.

2007: Sanna Gille, Sweden.

Basic education

2006 Scholarship in molecular genetics, Uppsala University, Uppsala, Sweden.

2001-2006 Master of Science in Agriculture (Animal Science), Swedish University of Agricultural Sciences, Uppsala, Sweden.

Employments in selection

2016-present **Researcher, Norwegian Centre for Organic Agriculture, Tingvoll, Norway.** My research covers all aspects of animal welfare and ethology in

both food producing animals as well as animals for sports and companionship, with a focus on extensively held animals.

- 2016-present** **Adviser in animal welfare, Djurskyddet Sverige, Stockholm, Sweden**
- 2012-2015** **Researcher, Bioforsk, Section for Organic food and farming, Tingvoll, Norway**
- 2011** **Course leader in Genome analysis, Department of Animal Genetics, Uppsala University, Uppsala**
- 2003-2005** **Insurance handling officer, Agria Animal Insurances, Stockholm, Sweden.**

Publications and conference presentations.

- Brunberg, E.I.**, Rodenburg, T.B., Rydhmer, L., Kjaer, J.B., Jensen, P., & Keeling, L.J. 2016. Omnivores Going Astray: A Review and New Synthesis of Abnormal Behavior in Pigs and Laying Hens. *Frontiers of Veterinary Science*, 22 July.
- Sayyab, S., Viluma, A., Bergvall, K., **Brunberg, E.**, Jagannathan, V., Leeb, T., Andersson, G. & Bergström, T.F. 2016. Whole-Genome Sequencing of a Canine Family Trio Reveals a FAM83G Variant Associated with Hereditary Footpad Hyperkeratosis. *G3*, 6, 521-527.
- Brunberg, E.I.**, Bøe, K.E. & Sørheim, K.M. 2015. Testing a new virtual fencing system on sheep. *Acta Agriculturae Scandinavica, Section A – Animal Science*, 65, 168-175.
- Brunberg, E.I.**, Grøva, L & Serikstad, G.L. 2014. Genetics and welfare in organic poultry production. A discussion on the suitability of available breeds and hybrids. *Bioforsk Report 9*, No 10.
- Brunberg, E.**, Gille, S., Mikko, S., Lindgren, G. & Keeling, L. 2013. Icelandic horses with the Silver coat colour show altered behaviour in a test measuring fear reactions. *Applied Animal Behaviour Science* 146, 72-78.
- Brunberg E.**, Jensen, P., Isaksson, A. & Keeling L. 2013. Behavioral and brain gene expression profiling in pigs during tail biting outbreaks – Evidence of a tail biting resistant phenotype. *PLoS ONE* 8, e66513.
- Brunberg, E.**, Jensen, P., Isaksson, A. & Keeling, L. 2013. Brain gene expression differences are associated with abnormal tail biting behaviour in pigs. *Genes, brain & behaviour*, 12, 275-281.
- Brunberg, E.**, Bøe, K.E., Jørgensen, G. & Sørheim, K. 2013. Can sheep learn the virtual fencing system NoFence using operant conditioning? Proceedings of the 64th Annual meeting of the European Federation of Animal Science, Nantes, France (Oral presentation).
- Münsterhjelm, C., **Brunberg, E.**, Heinonen, M., Keeling, L. & Valros, A. 2013. Stress measures in tail biters and bitten pigs in a matched case-control study. *Animal Welfare* 22, 331-338.
- Brunberg, E.I.**, Bergslid, E. & Sørheim, K.M. 2013. The virtual fencing system Nofence – trials 2013. *Bioforsk Report 8*, No 176.
- Brunberg, E.** 2012. Sheep welfare in the virtual fencing system NoFence. *Bioforsk Report 7*, No 174.
- Brunberg, E.**, Jensen, P., Isaksson, A. & Keeling, L. 2012. Tail biting resistant pigs – a new approach towards abnormal animal behaviour? Proceedings of the 24th Nordic symposium of the International Society for Applied Ethology, Siilinjärvi, Finland (Oral presentation)

- Brunberg, E.** 2011. Tail biting and feather pecking: Using genomics and ethology to explore motivational backgrounds. *Acta Universitatis Agriculturae Sueciae*. Doctoral thesis No 2011:76.
- Brunberg, E.**, Wallenbeck, A. & Keeling, L. 2011. Tail biting in fattening pigs: Associations between frequency of tail biting and other abnormal behaviours. *Applied Animal Behaviour Science* 133, 18-25.
- Brunberg, E.**, Wallenbeck, A. & Keeling, L. 2011. Characterisation of pigs performing and receiving tail bites - associations to other abnormal behaviours. Proceedings of the 23rd Nordic symposium of the International Society for Applied Ethology, Tartu, Estonia (Oral presentation, winner of the Klaus Westergaard prize for the best presentation of the conference).
- Munsterhjelm, C., **Brunberg, E.**, Palander, P., Sihvo, H-K., Valros, A., Keeling, L. & Heinonen, M. 2010. Pathological findings in tail biters and bitten pigs in a matched case-control study. Proceedings of the 22nd Nordic symposium of the International Society for Applied Ethology, Siilinjärvi, Finland.
- Brunberg, E.**, Jensen, P., Isaksson, A. & Keeling, L. 2010. Feather pecking behavior in laying hens: Hypothalamic gene expression in birds performing and receiving pecks. *Poultry Science* 90, 1145-1152.
- Palander, P., **Brunberg, E.**, Munsterhjelm, C. Sihvo, H-K., Valros, A. and Heinonen, M. Morphological intestinal health and its implications to tail biting behavior. Proceedings of the 44th congress of the International Society for Applied Ethology, Uppsala, Sweden.
- Munsterhjelm, C, **Brunberg, E.**, Palander, P., Sihvo, H-K., Valros, A. Keeling, L. and Heinonen, M. Health in tail biters and bitten pigs in a matched-case control study. Proceedings of the 44th congress of the International Society for Applied Ethology, Uppsala, Sweden.
- Brunberg, E.**, Jensen, P., Isaksson, A. & Keeling, L. 2010. Hypothalamic gene expression differences in feather pecking chickens. Proceedings of the 44th congress of the International Society for Applied Ethology, Uppsala, Sweden (Oral presentation).
- Brunberg, E.**, Jensen, P., Isaksson, A. & Keeling, L. 2009. Gene expression differences in feather pecking chickens. Proceedings of the 21st Nordic symposium of the International Society for Applied Ethology, Bjerringbro, Denmark (Oral presentation).
- Brunberg, E.**, Gille, S., Mikko, S., Lindgren, G. & Keeling, L. 2008. The influence of coat colour and temperament BLUP on fear reactions in Icelandic horses. Proceedings of the 42nd Congress of the International Society for Applied Ethology, Dublin, Ireland (Poster presentation).
- Brunberg, E.**, Andersson, L., Cothran, G., Sandberg, K., Mikko, S. & Lindgren, G. 2006. A missense mutation in PMEL17 is associated with the Silver coat color in the horse. *BMC genetics* 7, 46.