

COST/STSM Scientific report

University of Helsinki, 11.-22.06.2018, Christina Veit

1. Aims and objectives of the STSM

My PhD focuses on the link between immune activation, pharmacological intervention and social behaviour in finishing pigs. In our first experiment, we challenged pigs with LPS to describe changes in neurotransmitters and neuromodulators in the brains, record changes in social behaviour after overt sickness has ended and test the effect of an NSAID intervention on the effects of LPS. The pigs were individually marked and filmed during the trials. The aim of my stay at the Research Centre for Animal Welfare at the University of Helsinki was to establish an ethogram and a sampling scheme for video analysis of behaviour data gained in the LPS-experiment.

2. Description of work undertaken

In several meetings, we discussed a reasonable sampling scheme for continuous observation of social behaviour on individual level for different experimental days (baseline, day of injection, and days after injection). We established a detailed ethogram based on the experience of the working group and former publications. I screened randomly several pens on different days of the experiment to gain an idea about the main activity patterns of the pigs, as active periods during the day are the focus of our observation. Based on that we decided the final analysis schedule. In the following, I made several trial observations to practice using the software (The Observer 14.1, Noldus, Wageningen) and to test the feasibility of the established ethogram. I discussed the scored behaviour patterns with my host and we agreed on final adjustments regarding the ethogram.

Apart from the video analysis, I visited the laboratories of the Veterinarian Faculty of the University of Helsinki and learnt about their protocol for preparing brain samples for analysis. The homogenisation of brains is a procedure we are going to use to analyse the brain samples collected in the LPS-experiment at NMBU and in which we did not have sufficient experience so far.

Furthermore, I was able to visit a finisher farm together with a PhD-candidate, which did a STSM at NMBU and supported the LPS-experiment. Her PhD focus on factors contributing to antimicrobial usage in pigs. It was very useful to see the housing conditions in Finland, as it widens my view to get a general understanding of possible relationships between health and damaging behaviour in pigs.

3. Main results

We established a sampling scheme and an ethogram for continuous observation of social behaviour on individual level, which is currently used for analysis of all pens throughout the LPS-experiment. I started with the first observations of the available video data. Additionally, we discussed further evaluation methods and agreed on a sampling scheme for sickness behaviour on the day of injection as well as explorative behaviour after provision of enrichment material.

4. Future collaboration possibilities with the host institution

As the host is a co-supervisor of my PhD, she is going to be strongly involved in future experiments. We are going to start a field experiment in the autumn of this year in order to confirm the findings of our present study. It is planned to include either direct or video observation in the

fieldwork so that we can build on my experience from the current STSM and implement it in the next project.

5. Future plans, including potential future publications

The available video data is under analysis and the results are a fundamental part of an article, which links the behavioural data with physiological parameters collected in the LPS-experiment. The article is going to be submitted to an international, peer-reviewed journal.

6. Outputs produced, e.g. academic paper, funding application, new dataset etc.

The video data is going to be used by a veterinary student at the University of Helsinki to address the question if sickness has an influence on tail posture.