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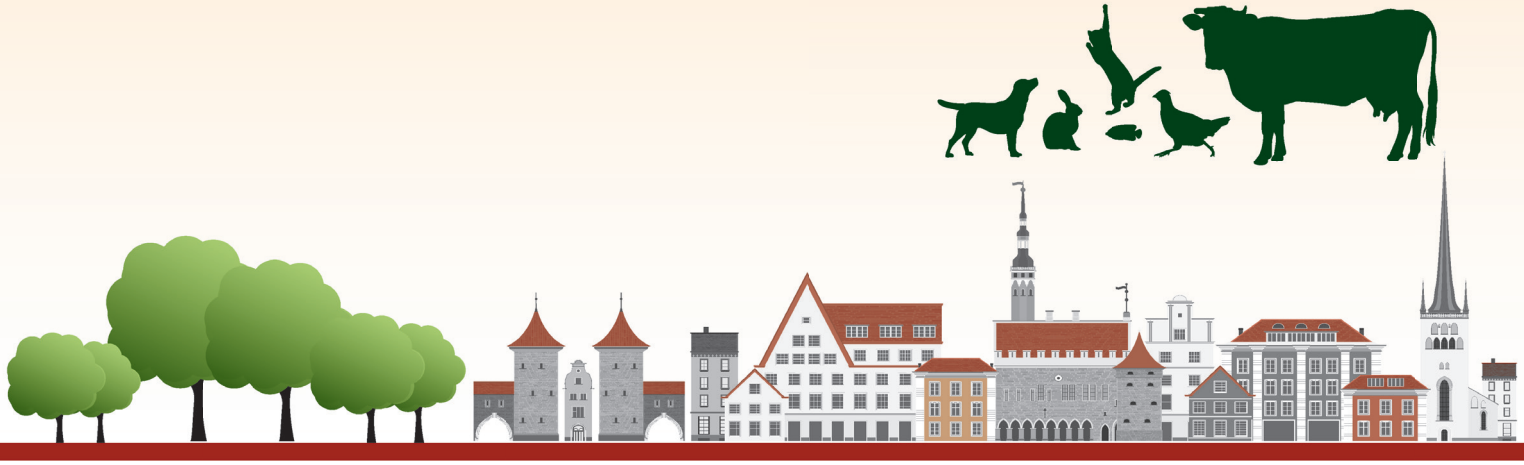
BOOK OF ABSTRACTS



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The individual assessment of responses of laying hens to a human stimulus and a novel object in relation to piling behaviour

Thursday, 3rd August - 15:00: PLF and Other New Techniques for Measuring Animal Behaviour (Bolero hall) - Oral

Ms. Maxine Rice [1], ***Dr. Peta Taylor*** [1], ***Prof. Paul Hemsworth*** [2], ***Dr. Ariane Stratmann*** [3], ***Dr. Michael J. Toscano*** [4]

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Piling in laying hens is a relatively common behaviour whereby hens press together in a tight group which can lead to mortality from smothering. Previous research has demonstrated relationships between smothering risk and curiosity or fearfulness of novel and human stimuli at a flock level. Piling occurs more frequently than smothering, and in a smothering event not all hens in the pile are smothered. This raises the question of smothering risk on an individual level. This study investigated individual behavioural responses of laying hens to different stimuli and explored relationships between those responses and the individual's piling behaviour. Eight flocks of 67-73 hens (n = 569 hens) of a commercial white hybrid were housed from 17 weeks of age (WOA) under experimental conditions in furnished pens with nest boxes, perches and dustbathing substrate. Individual hens were tagged with radio frequency identification (RFID) tags that registered with antennas on the floor where piling was most likely to occur (in corners) to record the identity of the hens in those areas. Video observations were used to detect the start and finish times of piles (defined as 3 or more hens pressed together for a minimum of 1 minute) occurring on the antennae on one day each at 20 and 27 WOA, respectively (161 piles). Two behavioural tests conducted in the same area as the RFID antennae from 26 WOA investigated the response to an unfamiliar human walking through the pen (stopping for 30 s in each corner) and a novel object (NO), one tall and one short blue coloured bucket. The RFID data were used to calculate the number of piles each hen was involved in, this information was compared with the RFID output from the behavioural tests. Data were analysed using Pearson correlation coefficients. Hens more frequently detected in or close to a piling incident were more frequently detected near the human ($r = 0.282$, $p<0.001$) and were quicker to approach the tall ($r=-0.264$, $p<0.001$) and the short NO ($r = -0.247$, $p<0.001$). A weak negative relationship was found between the order of the hen's arrival at the pile and the latency to approach the human ($r=-0.139$, $p=0.034$). Piling and smothering are likely to be multi-factorial aberrant behaviours and while further research is required, these results suggest that curiosity and fear may be implicated in piling, thus behavioural tests may be useful in the identification of individual hens at risk of smothering.