

# 56<sup>th</sup> Congress of the International Society for Applied Ethology ISAE 2023

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## BOOK OF ABSTRACTS



## Piling characteristics of individual laying hens in small experimental flocks.

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Thursday, 3rd August - 14:45: PLF and Other New Techniques for Measuring Animal Behaviour (Bolero hall) - Oral

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Piling behaviour (PB) is a common yet not well-understood behaviour that has been reported to occur in non-cage commercial laying hen flocks. During piling, birds press together tightly for an extended period, which may lead to smothering, a problem regarding welfare and production. To understand PB characteristics on the individual hen-level, we conducted a study in an experimental barn equipped with eight pens, where each held between 67 - 73 laying hens (569 birds in total) of a commercial white hybrid between 17 and 33 weeks of age (woa). Pens were equipped with nest boxes, perches, drinkers and feeders in the pen center. On both sides of each pen, six antennas of a radio frequency identification system (RFID) were placed to cover the pen floor between the two corners. Each bird was equipped with a RFID transponder that registered whenever it stepped onto an antenna. Recording cameras were positioned in a manner that allowed a full view of the areas where RFID antennae were placed to confirm piles (defined as three or more hens pressed together for a minimum of one minute) on one day each at 20 and 27 woa. Based on the pile time and location detected by video, the associated RFID data were used to extract information on the individual hens involved per pile. For each hen, piling frequency, the average latency to join a pile, and the average arrival order per pile (i.e., order of a hen joining a pile) were extracted. Data were analysed descriptively and using Pearson correlation coefficients. More piles occurred at 27 compared to 20 woa (woa 20:  $\bar{0}$  5.6 piles per pen [min. 2, max. 10] vs. woa 27:  $\bar{0}$  14.5 piles per pen [min. 12, max. 18]). Piles lasted on average  $5.4 \pm 2.8$  min and  $4.1 \pm 2.5$  min in woa 20 and 27, respectively. On average  $10.3 \pm 3.9$  and  $10.8 \pm 5.6$  hens were involved per pile in woa 20 and 27, respectively. Across the two days, 28 out of 569 birds (4.9 %) never engaged in piling and each hen piled on average 7.25 times, with one hen engaging in a maximum of 19 piles. Average latency to join a pile correlated with pile frequency ( $r = -0.216$ ,  $p < 0.001$ ) as well as average arrival order in the pile ( $r = 0.125$ ,  $p = 0.0036$ ). Further analysis will provide insight into hen-individual differences in PB.