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Title Effects of a semiochemical analogue on stress parameters of four weeks old broilers (preliminary results)

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Abstract Text

Stress has influences on chicken performance parameters and can be assessed by measuring Corticosterone (CS) (Post et al, 2003) or Heterophil to Lymphocyte Ratio (HLR) in blood (Campo and Davila, 2002). In aves, scent glands are encountered in the uropygial gland (Bohnet et al, 1991). In this gland, a secretion has been identified in laying hens with chicks. We hypothesized that this secretion (Mother Hen Uropygial Secretion or MHUS) may influence chickens' reaction to stress. We studied CS and HLR blood level on four weeks old broilers. These animals were bred in two similar buildings. On a first batch building 1 received a placebo (P) and building 2 the semiochemical (S). Following a cross over design, building 1 was perfused by S and building 2 by P for the second batch (same animal strain: ROSS PM3). For each of the two parameters, we observed 25 animals of each sex for each batch (i.e. 100 chickens in total). We observed the results for males, females and mixed sexes (mixed). Both stress parameters showed significant differences in favour of S treated batches. CS was more elevated in the P group for males and mixed (4.75ng/ml vs 6.73ng/ml, $p<0.05$; 2.63ng/ml vs 7.21ng/ml, $p<0.001$; 4.75ng/ml vs 6.73ng/ml, $p<0.05$ respectively), showing a more short term stress influence. HLR was more elevated in the P group for males, females and mixed (0.18 vs 0.24, $p<0.05$; 0.21 vs 0.27, $p<0.01$; 0.26 vs 0.20, $p<0.001$; respectively), showing a more long run (chronic) stress influence. We conclude that an analogue of MHUS (or MUSHA) has an influence on reducing stress. Thus, constant exposure to MHUSA might enhance chicken welfare.

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Presentation POSTER

Keywords semiochemical; MHUSA; chicken; stress; welfare