920 The use of a Hens' Odorant Analogue to control stress consequences in Broilers. I. Madec*[1], J. F. Gabarrou[2], A. Bruneau[1], L. Bougrat[1], D. Saffray[1], B. Silliart[3], and P. Pageat[1], [1]*Pherosynthese, Saint Saturnin Apt, France,* [2]*Esa Purpan, Toulouse, France,* [3]*Env Nantes, Nantes, France.*

In poultry, stress has consequences such as pecking behavior, increased feed to gain ratio, high mortality or bad carcass quality. Indicators of stress include: high H/L (Heterophil/Lymphocyte) ratio and elevated corticosterone secretion. We have identified in the uropygial glands in laying hens a secretion (named HOA: Hens Odorant Analogue, under patent). To test the hypothesis that HOA has stress-preventive actions and improves general performance, a trial was conducted (HOA vs control) using two similar buildings, each housing 24,000 chickens. Chickens were maintained on the ground floor under similar conditions. Males were separated from females. The HOA was administered by passive diffusion in the building atmosphere (one diffuser for 1000 chickens). After treatment, HOA-treated animals were heavier than controls: 2.22 vs 2.06 ($p < 0.0001$) for males and 1.13 vs 1.09 ($p < 0.0001$) for females. Percentage of scratched animals was lower in the HOA treated group than in controls: 8% vs 22% ($p<0.001$) for males, 10% vs 19% ($p<0.001$) for females. Results concerning suffocated chickens were more ambiguous. Indeed there were more suffocated females in the control group: 6.36% vs 3.25% ($p < 0.001$), whereas there were more suffocated males in the HOA treated group: 1.36% vs 1.11% ($p < 0.05$). Treated animals had a lower H/L ratio: 0.81 vs 1.11 ($p<0.01$) for males, 0.77 vs 0.85 ($p<0.001$) for females. Corticosterone level was higher in the control group for males (3.40 vs 2.64, $p<0.05$) but not for females ($p > 0.05$). The observed differences between the two groups suggest that chickens treated with HOA are subject to less stress than control chickens. Conversely, the number of suffocated animals is generally related to physiological distress, which tends to show that HOA has no real influence on this phenomenon. Economic data indicated that the gross margin was higher for the treated building by 4.8%. Further studies are required to more clearly define the physiologic and economic impact of treating chickens with HOA.

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