ASPA 26th Congress

Turin (ITALY), June 17–20, 2025

#ASPA2025

ASPA 26th Congress Book of Abstract

The 26th Congress of the Animal Science and Production Association

"Innovations in animal sciences: shaping the way for a sustainable future" is under patronage of Loghi Patrocini

Turin (ITALY),

June 17 –20, 2025

Venue

Campus SAMEV (Scuola di Agraria e medicina Veterinaria)
Largo Braccini 2, Grugliasco (TO)– ITALY

active behaviour (run, walking, interaction) was exhibited and no differences in productive performance were observed due to the induced movement. Concluding, SG demonstrated a very good response to the exercise and no stress behaviour was registered, MG showed an intermediate trend between the other two genotypes, while FG showed stressed behaviour and an increased DFI.
Funded by NextGenerationEU_PRIN2022 Prot. 20228ANBKH.

O461

Effect of ramps on space use of laying hens in a cage-free system

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The effect of the presence of ramps in a three-tiers aviary system was evaluated on space use, as for animal distribution and egg laying position, and animal welfare, as for the occurrence of foot pad and keel bone lesions. To this purpose, 1800 Hyline Brown laying hens were housed in 8 modules (each with 225 hens), half with two ramps (one between the ground and the first tier; one between the second and the third tiers) and half without, and controlled from 18 to 47 weeks of age. Data were submitted to analysis of variance using a model with the main effects of the presence of ramps and the weeks of age (when relevant) and the PROC MIXED or GLIMMIX of SAS, depending on the data distribution; the module was used as a random effect. As for animal distribution measured once a week by direct observation around 11 a.m., the presence of ramps significantly decreased the number of hens on the first tier (28.1% to 22.3% of observed hens), the third tier (11.3% vs 8.71%), and the perches of the first tier (3.01% vs 2.85%), while increasing the number of animals observed on the ground and the second tier (4.92% to 5.11%) ($p < 0.001$), this latter where nests were located. Accordingly, in modules with ramps, more eggs were laid in the nests (97.8% vs. 97.1% of total eggs) and less eggs were found on the wire nets of the third tiers (0.33 vs. 1.16%) ($p < 0.001$). As regards foot pad and keel bone lesions, on average of all observations, no significant effect of the presence of ramps was recorded on their occurrence which significantly increased with age (foot pad lesions from 0% to 31.5% and keel bone lesions from 1.75% to 24.5% from 21 to 47 weeks of age). Nevertheless, when foot pad lesions firstly appeared (i.e. week 30) due to a degradation of litter quality because of unsuitable management of ventilation inside the barn, their occurrence was lower in hens kept in modules with ramps compared to those without ramps (19.3% vs. 28.9%; $p < 0.01$). In conclusions, the presence of ramps facilitated the displacements of hens between the third and the second tiers of the aviary which increased the use of nests for laying; additionally, the displacements between the first tier and the ground were facilitated which potentially could increase opportunities for comfort behaviours, such as dust bathing in the litter, on one side, and the possibility of moving away from the litter when conditions are not optimal, on the other side.PNRR I.3.3 innovativi (CUP: C96E23000010005) funded the PhD grant of Mattia Pravato.

O053

Relationships between environmental conditions and behaviour of laying hens in an aviary system

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The study explored the relationships between environmental conditions and behaviour of laying hens of two genotypes (225 brown- and 225 white-feathered) kept in two pens of a multi-tier aviary system. During the month of January 2024, for 3 weeks (hens from 31 to 33 weeks of age), environmental conditions as for temperature, humidity, CO_2, NH_3, decibel, lux, and particulate matter (PM_1, $PM_{2.5}$, PM_4, PM_{10}), were recorded using a multi-sensor placed at the animal level across the various tiers of the aviary: litter level (10 cm above the ground), between first-second tier (180 cm), and third tier (270 cm). Hen behaviour was assessed through the analysis of daily video recordings for 3 days. Correlations between environmental data and the number of animals showing behaviours at different hours and for all available recordings were calculated using PROC CORR of SAS. As for behaviours at the litter level, pecking and scratching were correlated with relative humidity, NH_3, and lux ($r = +0.15$; $p < 0.001$), whereas dust bathing was correlated with air particulate ($PM_{2.5}$, PM_4, and PM_{10}) and temperature ($r = +0.26$ and $r = +0.21$, respectively; $p < 0.001$). On the first tier of the aviary, scratching and pecking were positively correlated with humidity, NH_3, lux, PM_{10} ($r = +0.30$; $p < 0.001$), whereas preening was significantly correlated with NH_3, lux, decibel, and particulate matter ($r = +0.23$; $p < 0.001$). Resting on perches was negatively correlated with NH_3 and decibel ($r = -0.32$; $p < 0.001$). On the second tier, resting on perches was negatively correlated with decibel, CO_2, lux, and