

PS1 - Nutrition for sustainability in broiler, layer and turkey production**PS1-104 Utilising a strain of probiotic *Bacillus licheniformis* to support high-producing layers**N. Ceylan¹, W. Van der Veken², V. Hautekiet²¹Faculty of Agriculture / Ankara University, Ankara, Turkey, ²Huvepharma N.V., Antwerpen, Belgium

Broiler applications dominate the probiotic research in literature. However, layers should not be neglected: high-producing laying hens must also be as efficient as possible, using their diet to the fullest whilst withstanding health challenges. From that perspective the importance of a proper functioning gastro-intestinal tract cannot be underestimated, indicating the value a probiotic supplementation can bring to a layer operation. A total of 250 Lohmann Brown layers were divided at random over a control and a probiotic group (25 replicates/treatment, 5 hens/replicate). The latter were supplemented with 1.6×10^9 CFU *Bacillus licheniformis* per kg of feed (strain DSM28710; B-Act®, Huvepharma) between 25 and 45 weeks of age and compared to a control fed a standard commercial diet. FCR and dirty egg percentage were recorded. Egg quality parameters were evaluated for 100 eggs per treatment, collected from each replicate biweekly (on the same day of the week) and analysed within 24 hours after collection. Moisture and protein levels in the manure were recorded at the start and at the end of the experiment, as an indication of how well the animal was using the respective diets. Supplementing *B. licheniformis* DSM28710 to these high-performing layers significantly improved FCR and egg mass ($P < 0.05$) compared to the control, with values of respectively 1.805 vs. 1.847 and 60.78 vs. 59.35 (g/hen/day). Egg quality parameters were also significantly improved in the probiotic group, including eggshell weight (6.83 vs 6.74 g) and shell thickness (0.393 vs. 0.389 mm; $P < 0.05$). Similarly, Haugh units significantly increased up to 82 in the probiotic group compared to the control's 80.6 ($P < 0.05$). Finally, the percentage of dirty eggs significantly reduced to 7.44 in the probiotic group compared to the control's 8.97%. These numbers could potentially be explained by the significant decrease in excreta moisture noted in the probiotic group (moisture reduction of 5.3% compared to the control's 4.5%; $P < 0.05$), as this could be seen as a better functioning of the gastrointestinal tract. The hypothesis is supported further as manure protein in the probiotic group was significantly lower compared to the control's (20.5 vs. 24.1, $P < 0.05$). In conclusion, the results here clearly show that *B. licheniformis* DSM28710 supports high-performing layers in utilising the provided nutrients from the diet as much as possible, in turn leading to improved FCR, egg quality and secondary feed efficiency parameters.