

Using probiotic *Bacillus licheniformis* to support high-performing layers

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The problem

The use of probiotics in animal production is well-accepted, but the application is not equal in all species. Many probiotics currently focus solely on improving technical performance in fast growing animals. However, certain probiotic strains also have their use in other poultry species focused on different production goals, such as laying hens. In these species, probiotic benefits can be seen in parameters ranging from improved feed conversion ratio (FCR; expressed as per amount of eggs produced for example) to reduced incidences of wet litter.



How we researched the problem

To confirm the benefit of probiotics *Bacillus licheniformis* DSM 28710 in layers, a trial was carried out at Roslin Nutrition (Scotland). Using 768 Hy-line Brown laying hens, 192 cages were randomly filled according to two treatments (96 cages/treatment, 4 birds/cage). Treatments consisted of a control group fed a commercial basal diet and a *B. licheniformis* DSM 28710 (B-Act®, Huvepharma®) group, fed the same commercial basal diet but supplemented with 1.6×10^{12} CFU *B. licheniformis* DSM 28710 per metric ton of feed. The trial ran for 168 days, equal to 24 weeks (week 21 to 45 post hatch). To evaluate the impact of the strain on technical performance, average daily feed intake (ADFI, g/hen/day), egg production (expressed as percentage, amount of eggs per day/hens on that day) and egg numbers (total eggs/cage) were measured and reported on a four-weekly basis.

Results

Egg production over the whole trial period was significantly better for the probiotic group compared to the control, recorded as 93.9% and 92.5% respectively ($P = 0.007$; Figure 1). This was reflected in a significant difference in egg numbers as well, with birds supplemented with *B. licheniformis* DSM 28710 producing 630.9 eggs versus the control's 621.8 (total number of eggs/cage over the 168 days; $P = 0.01$; Figure 2). These results were achieved without an increase in ADFI: control animals consumed 123.2 g of feed per hen per day, with animals in the probiotic group consuming a comparable 123.4 g of feed per hen per day ($P = 0.48$). The probiotic supplementation thus resulted in more eggs being produced with the same amount of feed.

Conclusions

The trial confirmed that *B. licheniformis* DSM 28710 not only has its use in production animals focusing on rapid growth, but also in laying hens. Previously conducted studies recorded improved digestibility parameters when probiotic *B. licheniformis* DSM 28710 was supplemented. As such, the results in the trial above are in line with how the probiotic improves feed utilisation, beneficially impacting performance parameters not solely expressed in terms of growth.

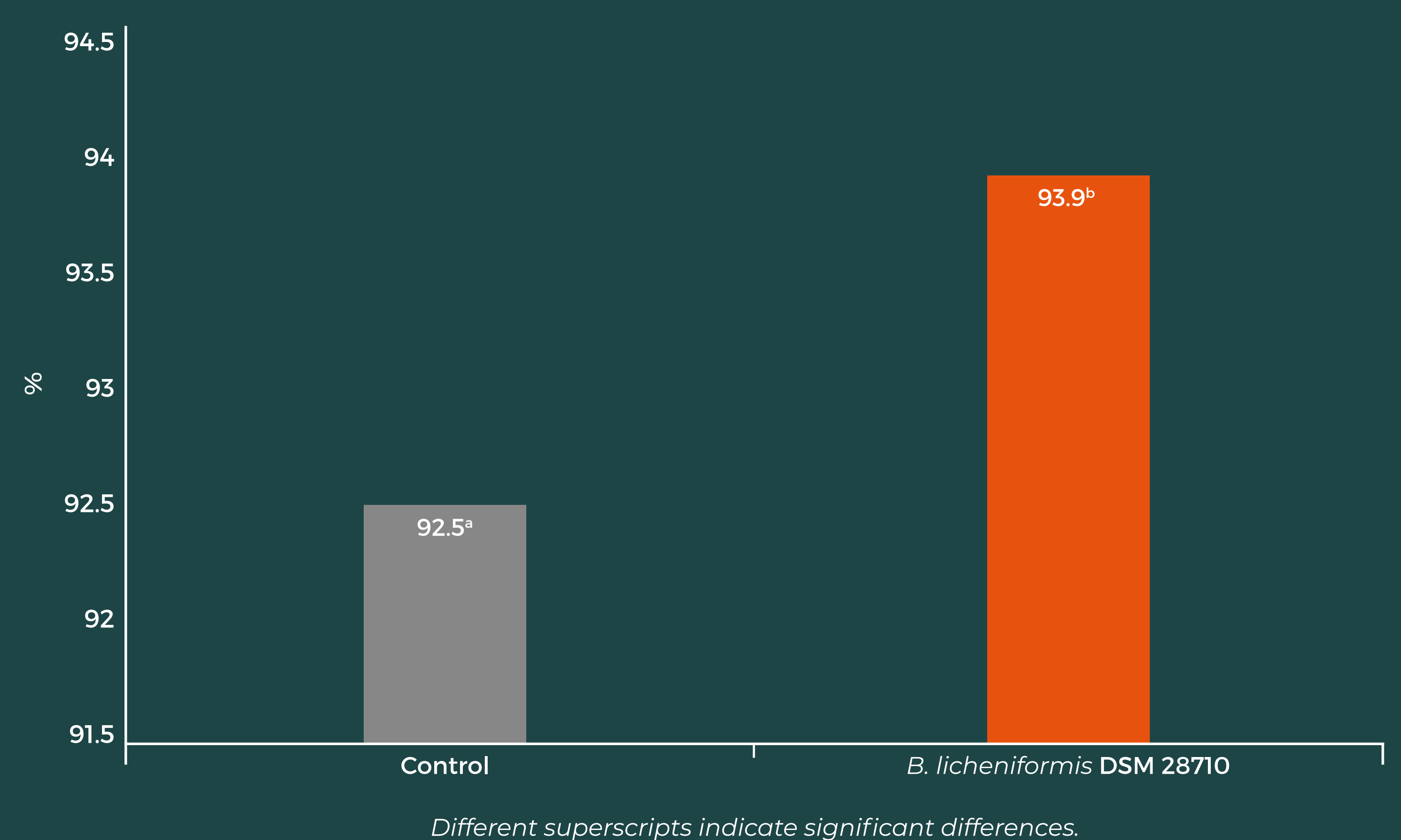


Figure 1. Egg production for both groups over the course of the study

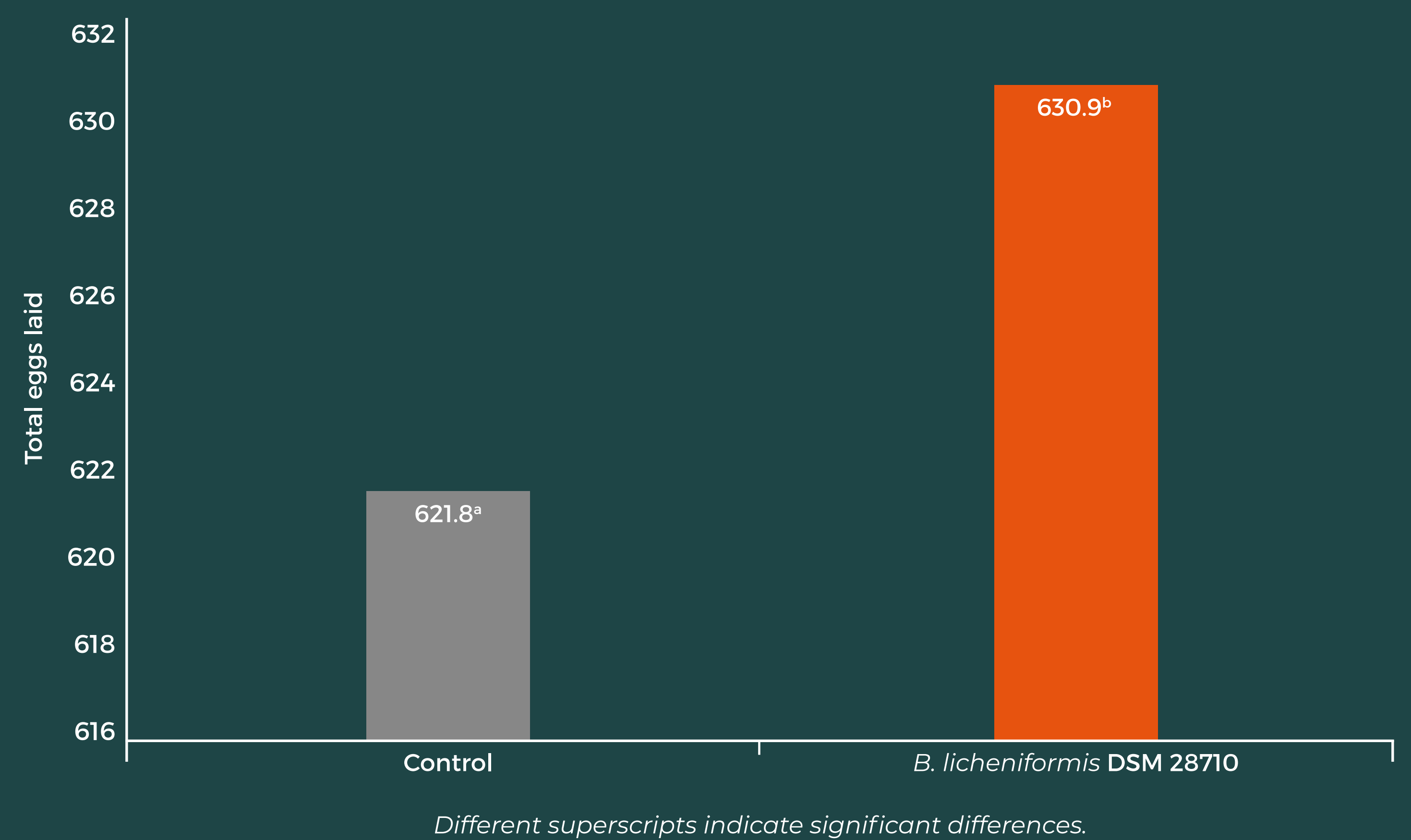


Figure 2. Total amount of eggs laid for both groups over the course of the study

