

# ENTEROSURE™

## A multi-strain probiotic for backyard poultry

ENTEROSURE™ is an effective proprietary *Bacillus* blend that supports a resilient microbiome by inhibiting pathogen growth while promoting, restoring, and maintaining healthy bacteria. This study was conducted to investigate the effect of ENTEROSURE on **egg quality, tibia traits, and cecal microflora of young layers.**<sup>1</sup> These traits are increasingly important to the egg producer and consumer and will continue to be a focus as the industry strives for continuous improvement.

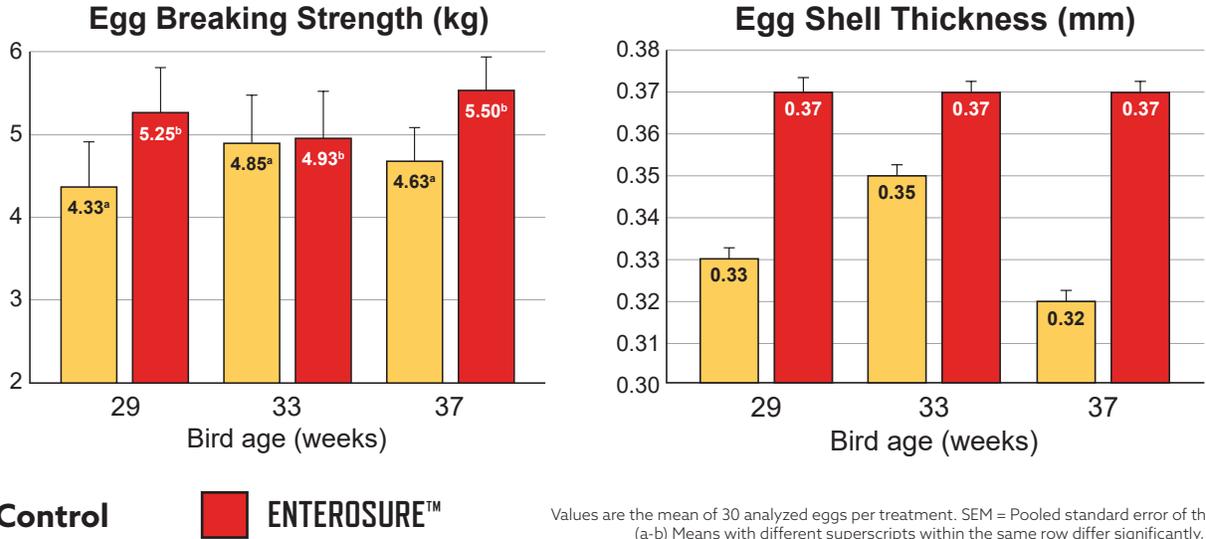


## Experimental Design

In a 12-week feeding trial, a total of 216 Hy-line® Brown laying hens (23 weeks old) were randomly allocated to one of two dietary treatments (6 birds/pen; 12 replicate cages/treatment): a standard mash diet that was formulated to meet or exceed the nutrient requirements of layers and standard diet plus ENTEROSURE (1 lb/ton) for a total of 14 weeks (98 days).<sup>1</sup>

## Egg Quality

A total of 90 eggs (30 eggs per replicate) were collected and evaluated for egg quality. Eggshell breaking strength was evaluated using a texture analyzer, and shell thickness was measured by a micrometer at three different parts (upper, lower, and middle; excluding the inner shell membrane).



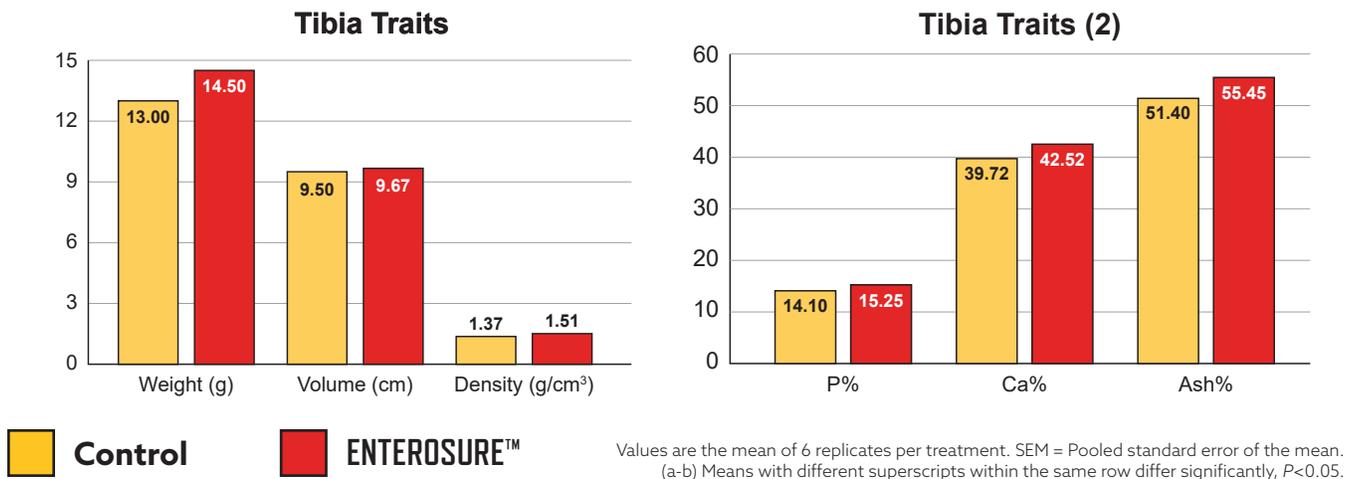
ENTEROSURE significantly increased egg breaking strength on d42 and d98 compared to control. Shell thickness was significantly improved at d42, d70, and at the end of the trial (d98) compared to control.





## Tibia Analysis

At 37 weeks of age (end of trial), the left and right tibia from a total of 12 birds (6 hens per treatment) were removed, de-fleshed, and dried for tibia analyses. The tibia mass per unit volume (density) was then calculated from the weight and volume figures obtained. The tibiae were further analyzed for their total ash, Ca, and P content using standard procedures.



ENTEROSURE numerically improved tibia weight 11% and density 10% compared to the control diet with a marginal improvement in tibia length. Tibial calcium was significantly greater compared to control.

ENTEROSURE promoted a healthy (or resilient) gut microbiome by increasing the beneficial lactobacilli and bifidobacteria populations as well as demonstrating improved egg quality and tibia characteristics. Results from this study indicate that the colonization of beneficial intestinal microflora from ENTEROSURE could have contributed to the improvements in the internal egg and eggshell quality and tibia characteristics of the supplemented hens.

### References:

1. The effect of multi-strain probiotic ENTEROSURE™ on egg quality, tibia traits and cecal microflora composition in layers. TL-24-21750
2. Tajudeen, H., Ha, S. H., Hosseindoust, A., Mun, J. Y., Park, S., Park, S. I., Choi, P., Hermes, R. G., Taechavasonyoo, A., Rodriguez, R., & Kim, J. (2024). Effect of dietary inclusion of Bacillus-based probiotics on performance, egg quality, and the fecal microbiota of laying hen. *Animal Bioscience*, 37(4), 689-696.



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