

ZooBioR-INDUCED CHANGES IN EGG PRODUCTION AND MORPHOMETRIC PARAMETERS OF QUAILS

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Background: Process-related stress negatively affects animal health, welfare, productivity, and the quality of animal-derived products, contributing to disease emergence and increased risks to both animal and human health. This has led to growing interest in sustainable strategies to mitigate stress, particularly the use of natural alternatives to antibiotic growth promoters. The use of antibiotics in poultry feed is associated with the development of antibiotic-resistant bacteria and the accumulation of residues in eggs and meat.

Aim of the study: Evaluation of the effects of ZooBioR, a natural product derived from *Arthrospira platensis*, on egg production and morphometric characteristics in quails.

Materials and methods: ZooBioR contain amino acids and oligopeptides (4.5-10%), proteoglycans including sulphated polysaccharides (15-20%), proteins (45-50%), phospholipids (0.2-0.25%), zinc (2.5-5 mg), and selenium (25-50 µg). The study was conducted under poultry farm conditions using 200 quails divided into two groups: control (n=100) and experimental (n=100). The experimental group received a basal diet supplemented with 0.15 mg ZooBioR/kg feed, while the control group received only the basal diet. Birds had ad libitum access to feed and water for 71 days. Egg production was recorded daily, and eggs were collected and analyzed separately for each group.

Results: ZooBioR was well tolerated and contributed to improved overall bird condition. The supplementation resulted in approximately a 7% increase in egg production and a 4.5% increase in average egg weight compared with the control group. Consequently, total egg mass production was about 11% higher in the experimental group. Feed conversion efficiency (kg feed per 10 eggs and per 1 kg egg mass) was also improved. Egg quality analysis showed higher albumen and yolk weights and heights, as well as more favorable proportions in the experimental group. Additionally, lower pH values of both albumen and yolk were recorded at the end of the study and during storage (evaluated at ~2-week intervals), indicating improved egg freshness and quality.

Conclusions: ZooBioR demonstrated clear efficacy as a functional feed additive, significantly improving productive performance, egg quality, and feed efficiency in quails. These findings support its potential as a sustainable alternative to antibiotic growth promoters in poultry production systems.

Keywords: *Arthrospira platensis*, ZooBioR, quails, egg production, egg quality, morphometric traits, feed efficiency.

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