

SCD Probiotics®

Case Study Summary – Impact of SCD Bio Livestock® on Broiler Chicken Productivity

Livestock – Poultry (CSS-002-12)

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Industry: Poultry
Application: SCD Bio Livestock® applied as water additive
Product: SCD Bio Livestock

Highlight

- Positive effects of the liquid probiotic solution on broilers' growth, physiological condition, and overall economic efficiency

Introduction

Probiotics in animal feed have been discussed as a supplemental way to promote immunity while also assisting with animal growth. Probiotics are biological products whose mechanism of action is competing for nutrient consumption within the digestive tract. The essence of probiotics' efficiency lies in their ability to stimulate positive metabolic changes in animals' digestive tracts, improve nutrient absorption, and enhance the organism's resistance to harmful microflora.

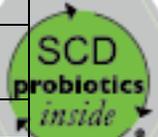
To test this theory, SCD Probiotics conducted a study examining SCD Bio Livestock's impact on poultry. The study's goal is to demonstrate the positive effects of the liquid probiotic solution on broilers' growth, physiological condition, and overall economic efficiency.

Methodology

At a poultry farm, two analogous groups of chickens were established: the control group (26,800) and the treatment group (26,690). Both groups were fed and kept under the same conditions during Days 1 to 41—the only difference being that the treatment group received water with the probiotic preparation mixed into it. The experiment was conducted according to the scheme presented in the Table I. The dose of SCD Bio Livestock was 1:5000 on 1-21 days age and 1:3000 on 22-41 days of age. The two groups were fed and treated for the same amount of time until they both were fully prepped for slaughter.

Table I: Experiment Scheme.

Broiler chickens cross ROSS-308
Normal Ration (NR)
NR + probiotic added into chickens' drinking water (ratio of 1:5000 on 1–21 days of age)
NR + probiotic added into chickens' drinking water (ratio of 1:3000 on 22–41 days of age)



Daily gain was calculated based on the control weight data. At the end of the experiment, 100 chickens from each group best corresponding to the average mass were selected, their blood was collected for the hematological test, and the control slaughter was carried out. During slaughter, content samples from the glandular stomach and the cecum were taken for the purpose of microbiological tests. During the control slaughter, the carcass output and the output of the carcasses' chest, legs and other muscles were assessed. The internal and digestive organs were evaluated during the control slaughter. Chest and leg muscles were taken for meat quality tests. Muscle chemical composition and physical and chemical properties were assessed according to commonly accepted methods.

Results

Broiler chickens that received the probiotic product during the experiment grew faster than the analogue animals in the control group. The data showed that the chickens in the treatment group **grew faster** and **gained 145 g** or **5.98% more** than the control group (Figure 1). Likewise, the average daily weight gain was **3.86 g** or **6.02% higher** in the treatment group (Figure 2).

Figure 1: Average Live Weight (in grams).

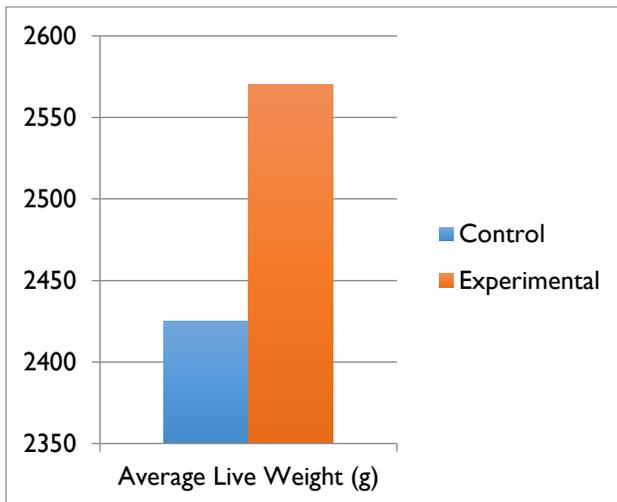
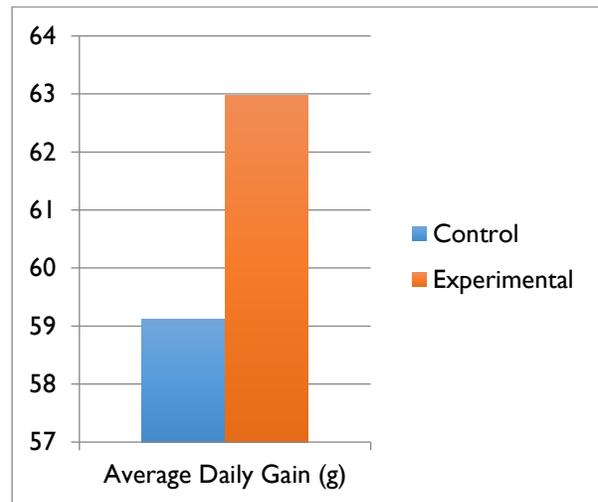


Figure 2: Average Daily Gain (in grams).



The experimental group's pre-slaughter weight was 13.56% higher than the weight of the control group of chickens. Accordingly, the experimental group's carcass weight was 254.4 g or 14.69% greater than the control group's weight, and slaughter output was 0.75% higher than the control group's output. It was also observed that there is a tendency for the probiotic preparation to affect the formation of the muscle tissue of separate body parts.

The leg muscles not only developed more than chest muscles, they also developed faster, and the chest muscles in the experimental group carcasses were 1.62% greater than the control group.



Additionally, the probiotic preparation activates the birds' vital processes, stimulating the development of internal organs.

This experiment showed an increase in the treatment group's microflora as well as their overall growth, as the probiotic treatment caused a significant increase in the average lactic acid bacteria, the *Bifidobacteria*, and the yeast counts in the birds' glandular stomach and cecum. Biological indicators were also measured in the study, and showed that the levels of erythrocytes, leukocytes, and hemoglobin in the blood of tested chickens were within the normal physiological range, but in the experimental group, they were higher than in the control group of chickens. The trial concluded that the use of probiotics has a positive effect on the microflora of the digestive tract of the birds as well as biological indicators that increase birds' growth and their ability to combat illnesses, eliminating the need for regular antibiotic treatment for growth purposes.

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One of the most important findings in this experiment was the conclusion of how SCD Bio Livestock influences the Feed Conversion Ratio (FCR), which is the measurement of poultry's efficiency in converting consumed feed into physical output measured as bird weight gain (consumed feed: total weight gain). On this experiment, the FCR of the treatment group was 1.63 while the control group's FCR was 1.65 with the findings of average weight gain as 2570 gr of treatment group and 2425 gr of the control group.

Related to the economic efficiency of probiotics usage on this experiment, it is concluded that the benefit of the treatment group for the overall operation was generating a revenue of \$1,346 (Total carcass sold – Total expenses) when compared to the control group.

Conclusions

Based on the experiment's results, it can be concluded that the probiotic, SCD Bio Livestock, activates broiler chickens' growth rates, has a positive impact on their digestive tracts' microflora, and enhances their immune systems. The daily gain of the broiler chickens that had received the probiotic averaged 6.02%, their pre-slaughter weight, 13.56%, their carcass weight, 14.69%, and their carcass output averaged 0.75% higher in comparison with the chickens that had not received the preparation. An additional \$3560 in revenue was observed.

