

## SCD Probiotics®

### Case Study Summary – Impact of SCD Bio Livestock® on the Productivity of Broiler Chickens in Lithuania

Livestock – Poultry (CSS-002-2012)

Page | 1

**Industry:** Poultry  
**Application:** SCD Bio Livestock® applied as water additive  
**Where:** Lithuania  
**When:** 2012  
**Product:** SCD Bio Livestock  
**Customer:** PATC, LLC (Licensee of SCD Probiotics®)

## Background

There have been discussions on the use of probiotics in animal feed as a supplemental way to promote immunity while also assisting with animal growth. Probiotics are ecological products with their mechanism of action being competing for nutrient consumption within the digestive tract. . The essence of the efficiency of probiotics lies in the stimulation of positive metabolic changes in the digestive tract of animals, improvement of absorption of nutrients, enhancement of the organism's resistance and antagonistic effect on harmful microflora. To test this theory, SCD Probiotics conducted a study in Lithuania concerning the impact of SCD Bio Livestock - on poultry. The goal of the study is to demonstrate the positive effects of the liquid probiotic solution on broilers' growth, physiological condition, and economic efficiency.

## Methodology

The experiment was carried out at the X poultry farm in Lithuania. 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 1 to 41 days, the only difference being that probiotic preparation was mixed into the water intended for the experimental group of broiler chickens. The experiment was conducted according to the scheme presented in the Table I. The dose of SCD Bio Livestock was 1:5000 on the 1-21 days age and 1:3000 on the 22-41 days of age. The two groups were fed and treated for the same amount of time until fully prepped for slaughter.

**Table I:** Experiments scheme

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

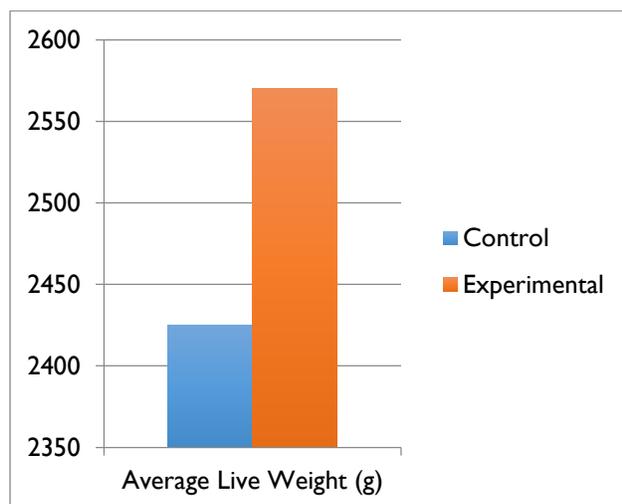


Daily gain was calculated based on the data of the control weights. At the end of the experiment, 100 chickens from each group best corresponding to the average mass were selected, their blood was collected for the hematological test, and the control slaughter was carried out. During slaughter, the content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

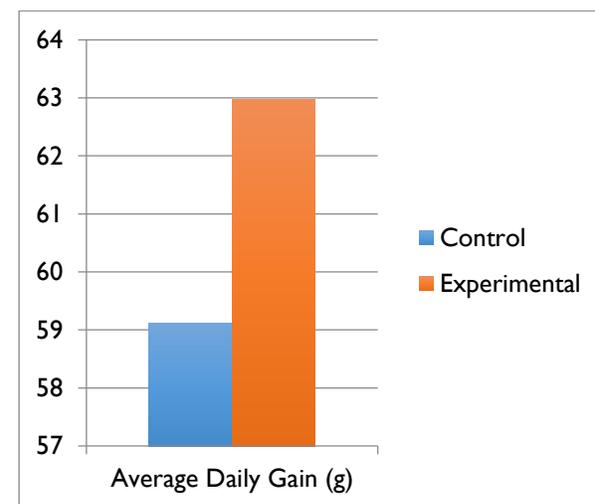
## Results

Broiler chickens that received the probiotic product during the experiment grew faster than the analogue animals of 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)



Pre-slaughter weight of the experimental group of broiler chickens was 13.56% higher than the weight of the control group of chickens. Accordingly, carcass weight of the experimental group was 254.4 g or 14.69% greater and slaughter output 0.75% higher than the control group of chickens. It was also observed that there's a tendency that probiotic preparation affects the formation of the muscle tissue of separate body parts. The leg muscles developed more than chest muscles, leg muscles also developed faster, and chest muscles in the carcasses of the experimental group of birds was 1.62% greater than the control group. Additionally, probiotic preparation activates the vital processes of the birds stimulating the development of internal organs.



This experiment showed the increase in the treatment groups' microflora and 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 that showed 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.

Page | 3

One of the most important finding in this experiment was the conclusion of how SCD Bio Livestock influences the Feed Conversion Ratio (FCR) that is the measurement of poultry's efficiency in converting consumed feed into physical output as weight gain of birds (consumed feed : total weight gain). On this experiment, the FCR of 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 was 20.452 in Lithuanian Litas (LTL) while it was 16.316 LTL for control group.

## Conclusions

Based on the results of the experiments, it can be concluded that the probiotic preparation activates the growth rate of boiler chickens, has positive effect on the microflora of the digestive tract, and enhances the immune system. The daily gain of the broiler chickens that had received the probiotic was 6.02% pre-slaughter weight was 13.56%, the carcass weight was 14.69%, the carcass output was 0.75% higher in comparison with the chickens that had not received the preparation, and additional revenue in the amount of 4,136 LTL was received.

