

## SCD Probiotics®

### Case Study Summary – Effect of SCD Probiotics® Products to Poultry Outputs Compared with Control Treatment Applications

*Poultry – Livestock (CSS-036-15)*

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<b>Industry:</b>	Broiler
<b>Application:</b>	Feed additive
<b>Products:</b>	SCD Bio Livestock®, SCD Bio Livestock Dry™ and SCD Dry Bio Livestock – For Poultry™

### Highlights

- All SCD Probiotics products' cumulative feed ranges from 1334.65 – 1423.46 which is an increasing trend for each treatment
- From the 1<sup>st</sup> to the 6<sup>th</sup> week among the treatments, all SCD Probiotics products showed higher FCR values (1.31) than the control (1.34)

### Introduction

Probiotics are useful microorganisms that beneficially affect the host animal; its supplementation in feed of chickens, for example, results a better broiler performance through improved weight gain and feed conversion ratio. In animal husbandry, feed conversion ratio (FCR) or feed conversion rate is a measure of an animal's efficiency in converting feed mass into increases of the desired output.

Collaborating with a US-based Biotechnology Company called SCD Probiotics, LLC located in Missouri, products were administered for poultry operations. Their product line includes lactic acid bacteria, yeast, and *B. subtilis*, with each product containing more than 10 strains of microorganisms. The products are all natural, produced through a natural fermentation process and are not chemically synthesized or genetically engineered or modified. These features improve desired outputs in poultry operation using SCD Probiotics products supplementation.

In this study, the researchers measured the effect of probiotics supplementation on 1,760 broilers. Comparing performances through output parameters among treatment and controlled groups include weekly feed, cumulative feed, daily body weight gain, weekly body weight gain, and cumulative FCR.



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## Methodology

For this trial, there were four groups 1,760 broilers with four hundred forty (440) birds per group. The first three groups with three different SCD Probiotics products (SCD Bio Livestock, SCD Bio Livestock Dry™ and SCD Dry Bio Livestock – For Poultry™) while the fourth group was the control (Table I). All of the four groups were under same conditions during the trial (42 days). The probiotics products were at a 1:1000 ratio for all three-experiment groups. Parameters to observe were weekly feed consumption, cumulative feed consumption, daily body weight gain, weekly body weight gain and cumulative FCR. There were no antibiotics in any treatment groups or the control group. The entire trial was 6 weeks in total.

**Table I:** Experimental Treatments Given to Broiler for 42 days (6 weeks).

<b>Trial Groups</b>	Group 1	Group 2	Group 3	Group 4
<b>Number of broilers</b>	440	440	440	440
<b>Product + Feed</b>	SCD Bio Livestock + Basal Feed	SCD Bio Livestock Dry™ + Basal Feed	SCD Dry Bio Livestock–For Poultry™ + Basal Feed	Basal Feed

## Results

### *Feed utilization*

Weekly feed intake including cumulative feed per bird is in Table II. Feed utilization from the 1<sup>st</sup> week towards the 6<sup>th</sup> week normally has an increasing trend for each treatment. Looking at the average of weekly feed per bird, SCD Probiotics products showed lower feed usage than the control (535.53 g) with SCD Bio Livestock at 529.39g, SCD Bio Livestock Dry – For Poultry at 501.57 g, and SCD Bio Livestock Dry at 504.78 g, the lowest value. Corresponding to each of the treatments cumulative feed, it showed that there is much increase in the case of control group on the 6<sup>th</sup> week; although in average SCD Bio Livestock has the highest value. Overall average on all SCD Probiotics Products' cumulative feed ranges from 1334.65 – 1423.46 (SCD Bio Livestock Dry – SCD Bio Livestock, according to Table II).

### *Weight gain and feed conversion ratio*

Weekly body weight gain as well as cumulative FCR is in Table III on the next page. SCD Bio Livestock test group showed the best FCR result inn 6<sup>th</sup> week (1.67) with the highest body weight comparing with the control group (1.71). SCD Bio Livestock Dry showed better results



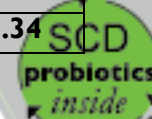
on FCR (1.68) comparing with control (1.71) on 6<sup>th</sup> week. Calculating the average from the 1<sup>st</sup> to the 6<sup>th</sup> week among the treatments, all SCD Probiotics products showed higher FCR values (1.31) than the control (1.34)

**Table II:** Weekly Feed and Cumulative Feed per Bird for the 6 Weeks Trial with the 4 Groups.

Week #	Treatments							
	SCD Bio Livestock Dry		SCD Bio Livestock Dry - For Poultry		SCD Bio Livestock		Control	
	Weekly Feed/Bird GM	Cumulative Feed/Bird GM	Weekly Feed/Bird GM	Cumulative Feed/Bird GM	Weekly Feed/Bird GM	Cumulative Feed/Bird GM	Weekly Feed/Bird GM	Cumulative Feed/Bird GM
1st week	138.35	138.35	130.19	130.19	157.43	157.43	152.82	152.82
2nd week	265.98	404.33	278.56	408.76	268.8	426.23	258.45	411.27
3rd week	443.94	848.27	446.9	855.65	494.32	920.55	504.55	915.27
4th week	601.68	1449.95	595.98	1451.63	655.41	1575.97	585.56	1500.83
5th week	688.36	2138.3	763.77	2215.41	708.31	2284.27	761.13	2261.96
6th week	890.39	3028.69	847.99	3063.39	892.05	3176.32	951.24	3213.2
<b>Average</b>	<b>504.78</b>	<b>1334.65</b>	<b>510.57</b>	<b>1354.17</b>	<b>529.39</b>	<b>1423.46</b>	<b>535.53</b>	<b>1409.23</b>

**Table III:** Weekly Body Weight Gain and Cumulative FCR for the 6 Weeks Trial with the 4 Groups.

Week #	Treatments							
	SCD Bio Livestock Dry		SCD Bio Livestock Dry - For Poultry		SCD Bio Livestock		Control	
	Weekly body weight gain	Cum FCR	Weekly body weight gain	Cum FCR	Weekly body weight gain	Cum FCR	Weekly body weight gain	Cum FCR
1st week	122.92	0.84	116.21	0.82	144.84	0.84	121.88	0.93
2nd week	190.25	1.14	187.5	1.18	187.75	1.14	190.25	1.16
3rd week	304	1.29	330.5	1.26	344.5	1.28	371.25	1.26
4th week	377.5	1.4	380.25	1.37	434	1.37	329.75	1.42
5th week	373.75	1.52	389	1.53	331.25	1.54	382.5	1.57
<b>6th week</b>	<b>395.5</b>	<b>1.68</b>	<b>340.25</b>	<b>1.72</b>	<b>416.75</b>	<b>1.67</b>	<b>442.25</b>	<b>1.71</b>
<b>Average</b>	<b>293.99</b>	<b>1.31</b>	<b>290.62</b>	<b>1.31</b>	<b>309.85</b>	<b>1.31</b>	<b>306.31</b>	<b>1.34</b>



## Conclusions

SCD Probiotics products have positive effects toward the poultry outputs highlighted. Less feed usage and savings on feed highlighted the SCD Probiotics' product usage. Efficiency in converting feed mass into increases of the desired output through using SCD Probiotics product (SCD Bio Livestock) per FCR results.

