

BioPlus 2B
Efficacy Trials - Broilers



*Effect of different levels of BioPlus 2B on broilers performance**Location:*

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Karaj-Iran.

Period of trial:

42 days.

Materials and methods:

This experiment was conducted in a randomized complete block design (RCBD) and included 600 Ross broiler chicks (male and female) which were divided into four groups with five replicates. This experiment was conducted in two period's starter 0-21, and grower 22-42, days. All of the diets were isocaloric and is nitrogenous. In this experiment, the birds received 0, 800, 1000, 1200 gr probiotic/ton diets in the starter period, and 0, 320, 400, 480 gr probiotic/ ton diets in the grower period, which were termed T₁, T₂, T₃ and T₄, respectively. The used probiotic (BioPlus 2B) was a powder in which the active ingredient is an equal mixture of spray-dried spore-forming bacteria, *Bacillus licheniformis* and *B. subtilis*, at a minimum concentration of 3.2×10^9 viable spores/g. Our measurements were, weight gain, feed intake, feed efficiency, mortality, carcass quality, serum cholesterol, blood hemoglobin and number of white blood cells.

| <i>Ingredients and analysis of diets</i> | | |
|--|-----------------------|----------------------|
| Ingredients (%) | Starter (0-21) | Grower(22-42) |
| Corn | 65.5405 | 70.6602 |
| Soybean meal (44%) | 27.4554 | 21.3754 |
| Fish meal | 3.3748 | 4.7156 |
| Oyster shell | 1.4086 | 1.7756 |
| DCP | 1.24 | 0.637 |
| Salt | 0.34 | 0.21 |
| Premix (Vit & Min) | 0.5 | 0.5 |
| DL- Methionine | 0.11 | 0.028 |
| Hcl-Lysine | 0.0308 | 0.0908 |
| Total | 100 | 100 |
| <i>Analysis</i> | | |
| CP (%) | 20.1 | 18.75 |
| ME(kcal/kg) | 2900 | 2970 |
| Ca (%) | 0.85 | 0.85 |
| Avai. Phosphors (%) | 0.43 | 0.35 |
| Met (%) | 0.4823 | 0.3987 |
| Met + Cys (%) | 0.79 | 0.68 |
| Lys (%) | 1.15 | 1.1 |

Results:

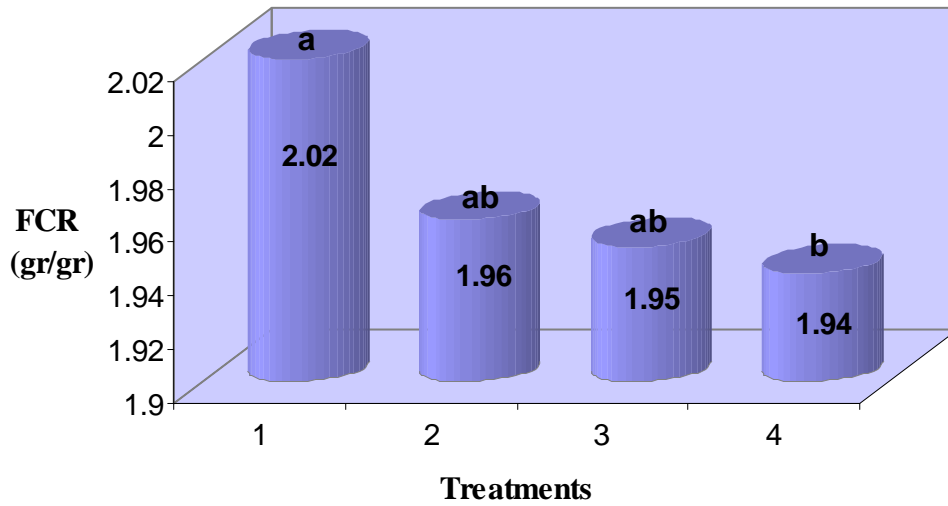
Weight gain at starter period was significantly affected by dietary treatments ($P<0.05$), but weight gain at grower period was not affected by using probiotic supplement ($P>0.05$). At the end of trial, the T_4 had maximum weight gain, and T_1 had minimum weight gain. The feed intake and mortality were not affected by experimental diets ($P>0.05$). Analysis of variance showed no significant difference between treatments for feed efficiency ($P>0.05$), but there was significant difference between mean of treatments that were derived from Duncan's multiple range test ($P<0.05$). There were no significant difference between groups in dressing, breast meat and thigh percent, at the end of 6th week ($P>0.05$). The first treatment had the highest abdominal fat (3.04 percent) and fourth treatment had the lowest abdominal fat (2.43 percent), but among them, there was no significant difference ($P>0.05$). Analysis of variance showed no significant difference between treatments for serum cholesterol content ($P>0.05$), but significant difference between mean of treatments were derived from Duncan's multiple range test ($P<0.05$). The blood hemoglobin content was not affected by experimental diets ($P>0.05$). The number of white blood cells were significantly affected by dietary treatments ($P<0.05$), the T_4 had maximum number of white blood cells, and T_1 had minimum number of white blood cells.

| Measurements | Unite | Treatments | | | |
|---------------------------|----------------------|-----------------------------|------------------------------|------------------------------|-----------------------------|
| | | 1 | 2 | 3 | 4 |
| Weight gain (0-21) | (gr) | 427.52 ^b ±11.013 | 436.32 ^{ab} ±10.356 | 451.92 ^a ±10.697 | 453.86 ^a ±19.703 |
| Weight gain (22-42) | (gr) | 1141.49±23.488 | 1148.27±19.446 | 1168.48±69.493 | 1174.64±70.036 |
| Weight gain (0-42) | (gr) | 1569.01±29.056 | 1584.59±25.445 | 1620.40±66.159 | 1628.50±52.566 |
| FCR (0-21) | (gr/gr) | 1.83 ^a ±0.0323 | 1.74 ^b ±0.0131 | 1.72 ^b ±0.0337 | 1.72 ^b ±0.0912 |
| FCR (22-42) | (gr/gr) | 2.09±0.0738 | 2.05±0.0136 | 2.04±0.1027 | 2.04±0.1008 |
| FCR (0-42) | (gr/gr) | 2.02 ^a ±0.0505 | 1.96 ^{ab} ±0.0072 | 1.95 ^{ab} ±0.0770 | 1.94 ^b ±0.0548 |
| Dressing | (%) | 68.497±1.486 | 68.383±3.151 | 70.166±2.302 | 70.302±3.084 |
| Breast meat | (%) | 30.227±2.375 | 29.500±2.878 | 29.544±2.100 | 30.197±1.691 |
| Thigh | (%) | 30.182±1.194 | 30.999±2.009 | 30.394±1.302 | 30.659±1.260 |
| Abdominal fat | (%) | 3.040±0.249 | 2.598±1.007 | 2.764±0.309 | 2.431±0.455 |
| Serum cholesterol content | (mg/dl) | 129.62 ^a ±17.752 | 125.85 ^{ab} ±12.745 | 117.34 ^{ab} ±11.367 | 115.51 ^b ±11.900 |
| Blood hemoglobin content | (g/dl) | 13.33±1.135 | 13.44±0.911 | 13.21±0.597 | 13.49±0.706 |
| White blood cells | (n/mm ³) | 24280 ^b ±3746.94 | 27500 ^{ab} ±5142.42 | 26900 ^{ab} ±5591.66 | 30950 ^a ±3911.88 |

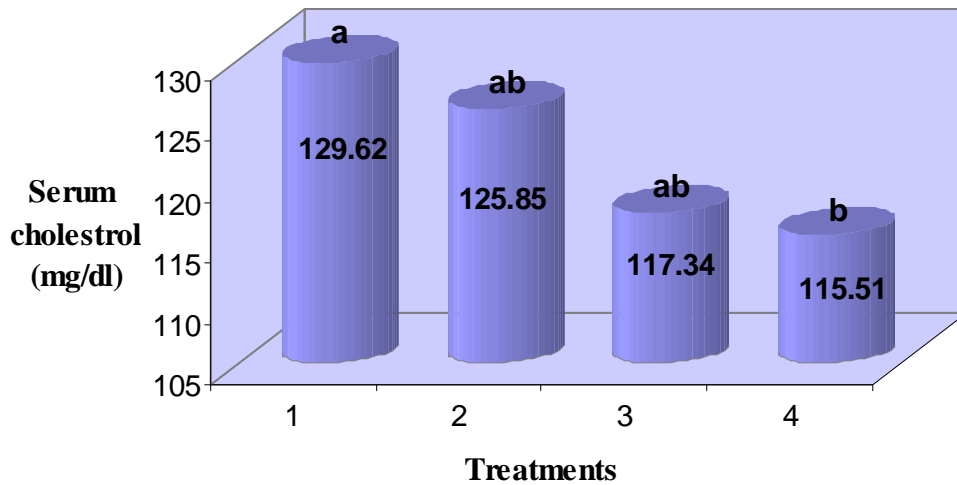
a, b means without a common letter differ at $P<0.05$

The results from this study show that supplementation of BioPlus 2B(bacillus subtilis and bacillus licheniformis) in broiler feed not only caused improvement in performance, but also decreased serum cholesterol content and stimulated the immune system of broilers.

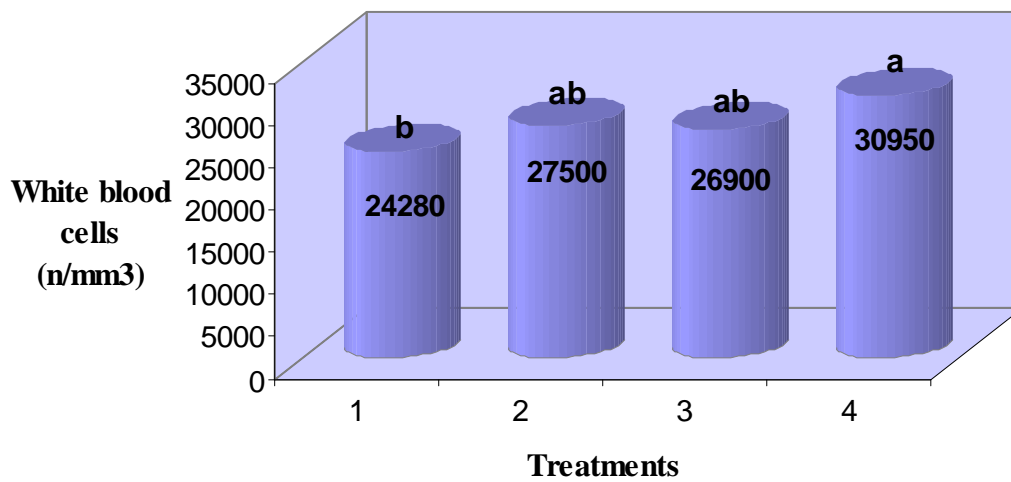
Effect of BioPlus 2B on FCR (0-42)



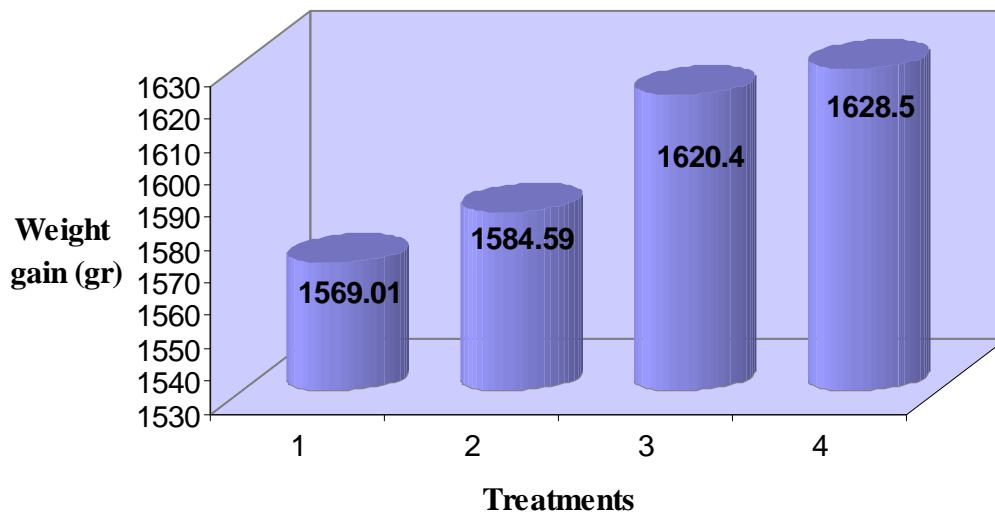
Effect of BioPlus 2B on serum cholesterol content at 35 days



Effect of BioPlus 2B on number of white blood cells at 35 days



Effect of BioPlus 2B on weight gain (0-42)



Some Chart about the effect of Bioplus 2B