

Vitazyme® Pro Significantly Improved Broiler Production Performance

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Conclusion

- 1- From 1 to 42 days, the use of 100g /T of Vitazyme Pro resulted in higher BWG and lower FCR compared to the NC diet, whereas the use of 100g/T of VitaPro resulted in similar BWG and FCR than the PC group.
- 2- The addition of 100g/ton restored FC (5.1% improvement) to positive control level, which leads to a significant cost saving.
- 3- There was no difference in cecal bacterial counting among treatments. The supplementation of 100g/T of Vitazyme Pro numerically decreased cecal *E Coli* counting.
- 4- The addition of 100g/T of Vitazyme Pro had better production performance than competitor product (HC).

Experiment design and procedure

A total of 840 1-day old broiler chicks (Name of breed: Cobb500™) (7 trt x 6 rep x 20 birds/pen) were randomly allocated to 7 treatment groups as following (Table 1).

Table 1. Experimental design

Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6	Treatment 7
Positive control (PC)	Negative control (NC*)	50g/T Vitazyme Pro	100g/T Vitazyme Pro	200g/T Vitazyme Pro	400g/T Vitazyme Pro	200g/T HC

NC=PC-100kcal/kg-1%CP

The trial was conducted for 42days. Basic diet formulation was presented in Table 2. Body weight gain, feed intake, and FCR were measured at 14, 28, and 42days. At 22 day, bacterial counting for cecal digesta was conducted.

Table 2. Composition and calculated nutrient content of basal diets

item	0-14 d		15-28 d		29-42 d	
	PC	NC	PC	NC	PC	NC
Ingredients						
Corn, Grain	52.66	58.05	56.35	60.40	59.48	63.20
Soybean meal -48%	29.57	26.65	25.46	22.74	23.77	21.15
DDGS	10	10	10	10	10	10
Soybean oil	2.78	0.45	3.39	1.50	3.45	1.60
Dical. Phos.	1.47	1.50	1.34	1.35	1.13	1.16
Limestone	1.23	1.23	1.18	1.19	1.10	1.09
Common salt	0.30	0.30	0.35	0.35	0.30	0.30
Mineral premix	0.08	0.08	0.08	0.08	0.08	0.08
Vitamin Premix	0.25	0.25	0.25	0.25	0.25	0.25
DL-methionine	0.27	0.24	0.23	0.22	0.17	0.16
L-lysine-HCL	0.31	0.32	0.30	0.31	0.18	0.18
L-Threonine	0.08	0.08	0.07	0.07	-	0.01
Product Space/Sand	1.00	0.85	1.00	1.54	0.05	0.82
Nutrients						
ME, kcal/kg	3010	2910	3090	2990	3150	3050
protein	21.33	20.33	19.61	18.61	19	18
Lysine %	1.31	1.24	1.19	1.13	1.05	0.99
Methionine %	0.63	0.59	0.57	0.54	0.50	0.47
TSAA %	0.97	0.92	0.89	0.85	0.82	0.78
Threonine %	0.85	0.81	0.78	0.74	0.71	0.67
Ca %	0.90	0.90	0.84	0.84	0.76	0.76
avP %	0.45	0.45	0.42	0.42	0.38	0.38

Results

Table 3: Feed intake (FI, kg), body weight gain (BWG, kg), and feed conversion ratio (FCR) from birds according to the treatments at 14 and 28 days of age.

Treatment	1-14 days			14-28 days		
	FI	BWG	FCR	FI	BWG	FCR
PC	0.639	0.364 ^a	1.761 ^b	1.838 ^{bc}	1.109 ^a	1.660 ^c
NC (-1% CP/-100kcal/kg)	0.628	0.317 ^c	1.982 ^a	1.819 ^c	1.033 ^b	1.760 ^{ab}
NC + 50g/T VitaPro	0.644	0.333 ^{bc}	1.942 ^a	1.915 ^a	1.074 ^{ab}	1.788 ^a
NC + 100g/T VitaPro	0.632	0.347 ^{ab}	1.822 ^b	1.830 ^{bc}	1.079 ^{ab}	1.696 ^{bc}
NC + 200g/T VitaPro	0.625	0.319 ^c	1.969 ^a	1.890 ^{ab}	1.071 ^{ab}	1.766 ^{ab}
NC + 400g/T VitaPro	0.631	0.317 ^c	1.994 ^a	1.867 ^{abc}	1.070 ^{ab}	1.744 ^{ab}
P value	0.9059	0.0025	0.0009	0.0314	0.1101	0.0242
SE	0.0056	0.0052	0.0224	0.0110	0.0079	0.0126

^{ab}Means followed by superscript letters are significantly different by Duncan's test (P<0.05)

Table 4: Feed intake (FI, kg), body weight gain (BWG, kg), and feed conversion ratio (FCR) from birds according to the treatments at 42 days of age.

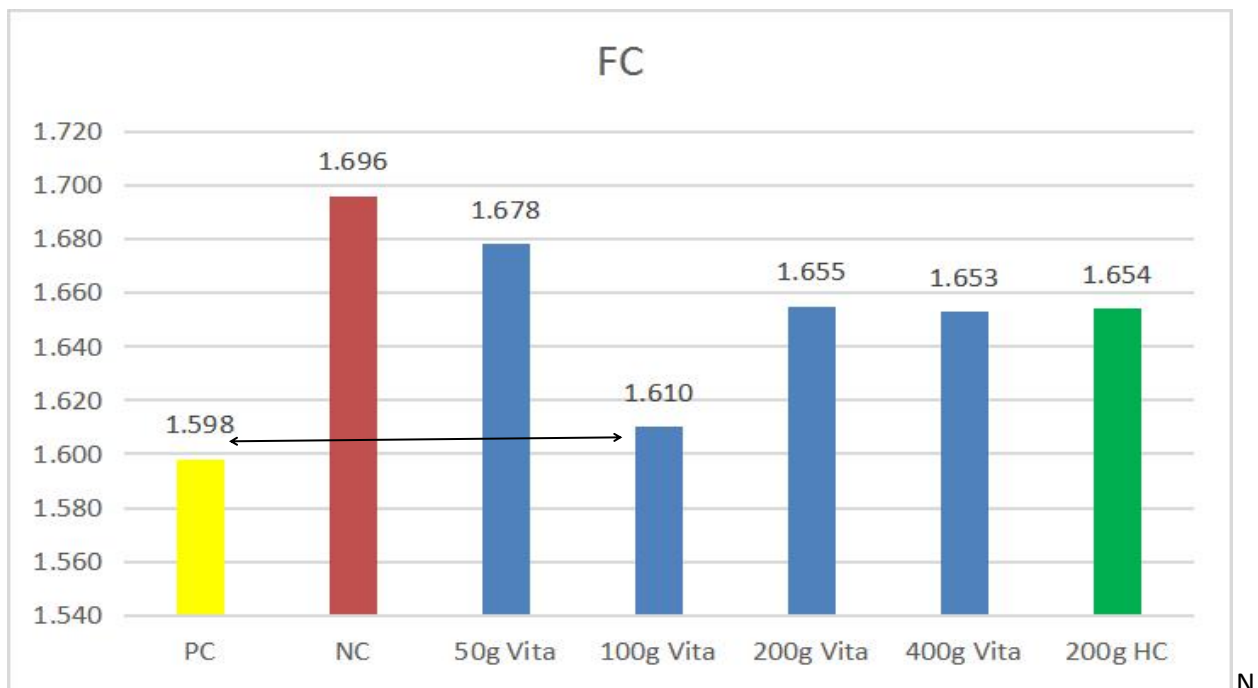
Treatment	28-42 days			1-42 days		
	FI	BWG	FCR	FI	BWG	FCR
PC	2.633 ^b	1.728 ^d	1.525 ^b	5.110 ^b	3.201 ^{ab}	1.598 ^b
NC (-1% CP/-100kcal/kg)	2.843 ^a	1.768 ^{cd}	1.608 ^a	5.289 ^a	3.119 ^b	1.696 ^a
NC + 50g/T VitaPro	2.812 ^a	1.798 ^{bcd}	1.564 ^{ab}	5.371 ^a	3.205 ^{ab}	1.678 ^a
NC + 100g/T VitaPro	2.836 ^a	1.86 ^{ab}	1.521 ^b	5.299 ^a	3.290 ^a	1.610 ^b
NC + 200g/T VitaPro	2.919 ^a	1.895 ^a	1.541 ^b	5.435 ^a	3.285 ^a	1.655 ^{ab}
NC + 400g/T VitaPro	2.823 ^a	1.834 ^{abc}	1.539 ^b	5.321 ^a	3.221 ^{ab}	1.653 ^{ab}
P value	0.0015	0.0027	0.0082	0.0180	0.1690	0.0057
SE	0.0214	0.0142	0.0080	0.0285	0.0212	0.0092

^{ab}Means followed by superscript letters are significantly different by Duncan's test (P<0.05)

Table 5. *E. Coli* and *Lactobacilli* counting from ceca according to the treatments at 22 days of age (log FCU/mL)

Treatment	E. Coli	Lactobacilli
PC	6.982	5.926
NC (-1% CP/-100kcal/kg)	6.174	6.068
NC + 50g/T VitaPro	6.178	6.611
NC + 100g/T VitaPro	5.027	5.976
NC + 200g/T VitaPro	6.303	5.982
NC + 400g/T VitaPro	6.813	6.510
P value	0.2093	0.2199
SE	0.2195	0.1101

^{ab}Means followed by superscript letters are significantly different by Duncan's test (P<0.05)



NC=PC-100kcal/kg-1%CP