Vitazyme XP Replaces High Dosage of DCP and Reduces Energy to Save Cost Without Affecting Broiler Growth Performance

Vitazyme XP. USA. 2018.01

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Conclusion

1- Although negative control diet had 0.13AP and 40kcal/kg ME lower than positive control diet, the addition of Vitazyme XP can restore body weight gain, FCR, bone weight, bone ash bone Ca, and bone Mg of negative control to the level of positive control.
2- As Vitazyme XP dosage increased from 50g to 200g/ton of feed, body weight gain showed a numerically increasing trend while FCR showed a numerically decreasing trend.
3- There were no difference among Vitazyme XP and a competitor XPtase product.

Experiment design and procedure

A total of 720 1-day old broiler chicks (Name of breed: Cobb500™) (6 trt x 6 rep x 20 birds/pen) were randomly allocated to 6 treatment groups as following (Table 1).

Table 1. Experimental design

Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Positive control (PC)*	Negative control (NC)**	NC+50g/T Vitazyme XP	NC+100g/T Vitazyme XP	NC+200g/T Vitazyme XP	NC+100g/T NV XPtase

* ** NC=PC-0.13%AP-40kcal/kg ME

The trial was conducted for 42days. Basic diet formulation is presented in Table 2 and 3. Body weight gain, feed intake, and FCR were measured at 14, 28, and 42days. At 42 d, bone ash and mineral composition evaluated.

Table 2. Feed formulation for positive control (PC) and negative control (NC) broiler starter, grower, and finisher diets (as-fed basis) (NC: Low aP -0.13% + Low energy: -40kcal/kg ME)

	Positive control (PC)			Negative control (NC)		
Item	Starter (0-14d)	Grower (15-28d)	Finisher (29-42d)	Starter (0-14d)	Grower (15-28d)	Finisher (29-42d)
Ingredient (% of diet)						
Corn	62.37	66.76	67.80	60.99	65.52	70.30
Soybean meal (48%)	30.83	26.66	25.14	31.00	26.89	24.67
Soybean oil	1.50	2.00	3.00	1.50	2.00	1.73
Limestone	1.22	1.16	1.07	1.60	1.53	1.44
DCP	1.70	1.56	1.36	1.00	0.85	0.65
Salt	0.30	0.30	0.30	0.30	0.30	0.30
Vitamin mix	0.25	0.25	0.25	0.25	0.29	0.25
Mineral mix	0.08	0.08	0.08	0.08	0.08	0.08
DL-Methionine	0.33	0.28	0.23	0.30	0.25	0.23
L-Lysine	0.33	0.31	0.18	0.33	0.30	0.19
Threoninie	0.10	0.09	0.04	0.16	0.09	0.05
Coban 90	0.05	0.05	0.05	0.05	0.05	0.05
Sand	0.94	0.51	0.50	2.40	1.85	0.07
Nutrients						
ME (kcal/kg)	3,000	3,090	3,170	2,960	3,050	3,130
CP (%)	21.02	19.32	18.49	21.02	19.32	18.49
Ca (%)	0.90	0.84	0.76	0.90	0.84	0.76
Available P (%)	0.45	0.42	0.38	0.32	0.29	0.25
Met + Cys (%)	0.98	0.89	0.82	0.98	0.89	0.82
Met (%)	0.64	0.57	0.52	0.65	0.58	0.52
Lys (%)	1.32	1.19	1.05	1.32	1.19	1.05

Results

Table 3. Body weight gain (BWG), Feed intake (FI), and Feed conversion ratio (FCR) from 1-42 days of age according to the treatments.

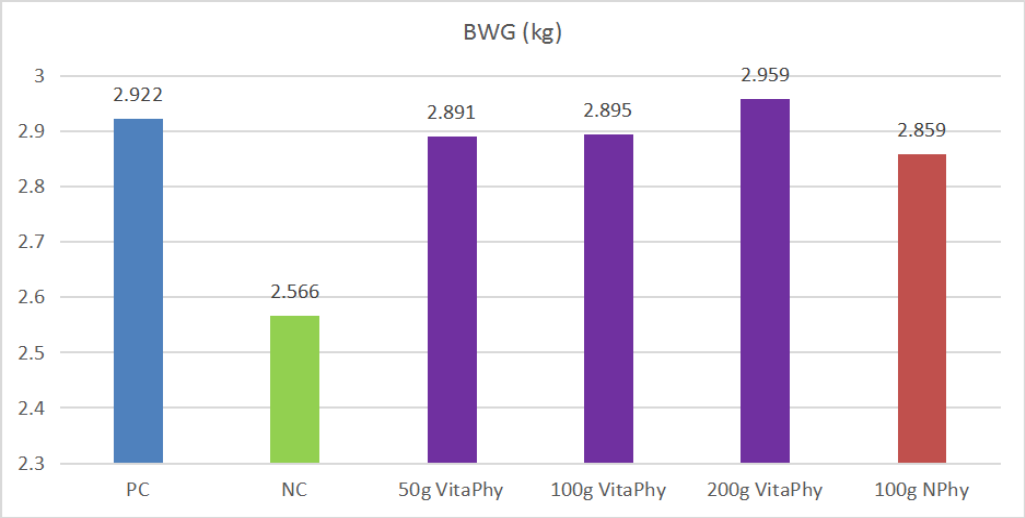
	1-42d		
	FI (kg)	BWG (kg)	FCR (kg/kg)
PC	4.905	2.922[a]	1.681[b]
NC	4.762	2.566[b]	1.854[a]
NC+50g/T VitaXP	4.983	2.891[a]	1.724[b]
NC+100g/T VitaXP	4.887	2.895[a]	1.689[b]
NC+200g/T VitaXP	4.837	2.959[a]	1.635[b]
NC+100g/T NVXP	4.839	2.859[a]	1.693[b]
P Value	0.6562	<.0001	0.0003
SE	0.0366	0.0269	0.0160

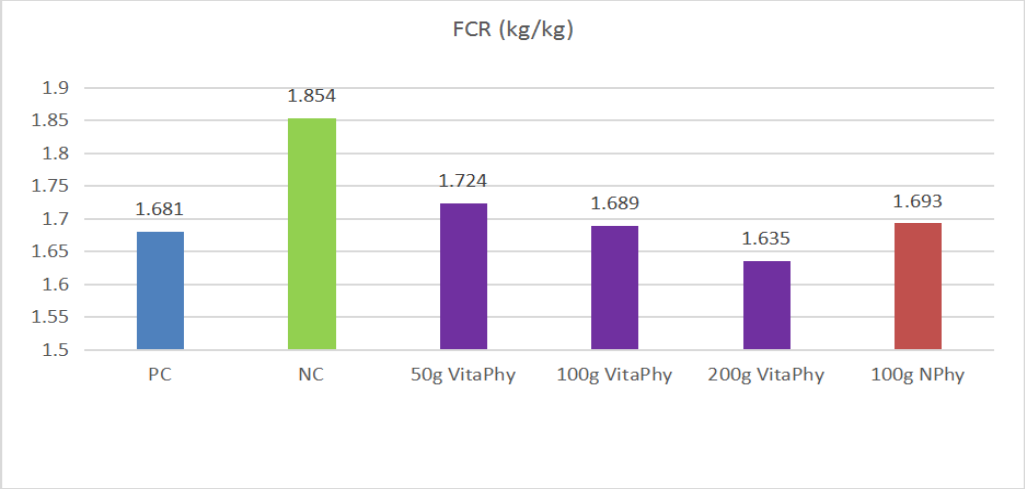
[ab] Means followed by different letters differ by Tukey`s test ($p<0.05$)

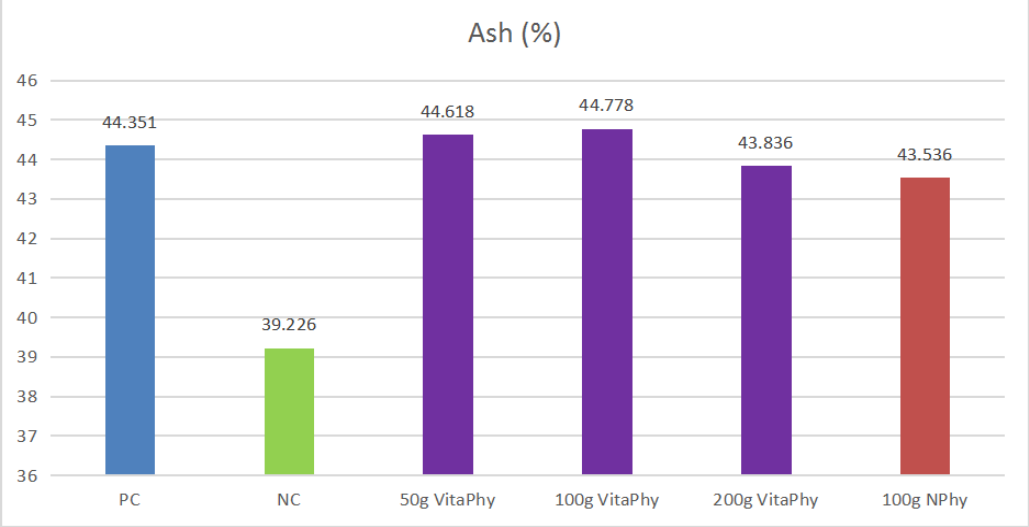
Table 4. Bone weight, ash, Ca, Mg, P, and Zn at 42 days of age according to the treatments

	Bone weight (g)	Ash (g)	Ash (%)	Ca (mg/g)	Mg (mg/g)	P (mg/g)	Zn (mg/g)
PC	7.823[ab]	3.464[ab]	44.351[a]	410.90	8.679[ab]	185.175	0.297
NC	7.325[b]	2.874[b]	39.226[b]	405.27	7.696[b]	177.898	0.294
NC+50g/T VitaXP	8.811[a]	3.933[a]	44.618[a]	392.61	8.144[ab]	176.688	0.302
NC+100g/T VitaXP	8.491[ab]	3.803[a]	44.778[a]	407.10	8.703[ab]	184.255	0.295
NC+200g/T VitaXP	8.570[ab]	3.755[a]	43.836[a]	408.12	8.907[a]	185.120	0.297
NC+100g/T NVXP	8.053[ab]	3.505[ab]	43.536[a]	399.49	8.500[ab]	181.312	0.303
P Value	0.0213	0.0002	0.0003	0.6705	0.0217	0.4669	0.9951
SE	0.1427	0.0797	0.4399	3.3211	0.1185	1.5622	0.0047

[ab] Means followed by different letters differ by Tukey`s test ($p<0.05$)


BWG (kg)
3
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.922
2.566
2.891
2.895
2.959
2.859
PC
NC
50g VitaPhy
100g VitaPhy
200g VitaPhy
100g NPhy


FCR (kg/kg)
1.9
1.85
1.8
1.75
1.7
1.65
1.6
1.55
1.5
1.681
1.854
1.724
1.689
1.635
1.693
PC
NC
50g VitaPhy
100g VitaPhy
200g VitaPhy
100g NPhy


Ash (%)
46
45
44
43
42
41
40
39
38
37
36
44.351
39.226
44.618
44.778
43.836
43.536
PC
NC
50g VitaPhy
100g VitaPhy
200g VitaPhy
100g NPhy