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Research Article

INFLUENCE OF XYLANASE ON GROWTH PERFORMANCE OF NANDANAM COLOUR BROILERS

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ABSTRACT
Individual supplementation of corn-based broiler diets with exogenous xylanase was evaluated in 240 straight run day old Nandanamcolour broiler chicks, which were randomly distributed to four treatments, of two replicates, each containing 30 chicks. The broilers were fed with standard broiler starter and finisher ration without, 25, 50 and 100g of Xylanase enzyme per tonne of feed (Bioxylanase – 8000 units per g). This experimental diet was fed *adlibitum* up to 8 weeks of age. Performance was assessed for live body weight at biweekly intervals. Body weights at 2, 4 and 6 weeks of age were significantly influenced by xylanase enzyme supplementation at all inclusion levels. It can be concluded that the inclusion level of xylanase at 50g per tonne of feed was found to be effective up to six weeks in producing significantly higher body weight than all other inclusion levels.

Key Words: *Broiler, Enzyme, Xylanase, Growth performance*

INTRODUCTION
Inclusion of enzymes to the cereals has been interesting that the long backbones of the arabinoxylans are cleved into shorter fragments, thereby reducing their viscosity and thus the fullest utilization of carbohydrates in the feed is achieved. Supplementing broiler diets with xylanase minimizes the adverse effects of NSPs and increases the carbohydrate availability. Hence, the present study was undertaken to analyse the effect of xylanase on growth performance of Nandanam colour broilers.

MATERIALS AND METHODS
The biological trial of eight weeks duration (0-8 weeks) was carried out with 240 day old straight run chicks of Nandanamcolour broilers. The chicks were weighed, wing-banded and distributed equally and randomly into four treatment groups (T0, T1, T2 and T3), of two replicates.

Table 1: Composition of the ration

S. No.	Ingredients	Starter mash (0-5 wks)	Finisher mash (6-8wks)
1	Maize	56	53
2	Broken rice	-	7
3	Deoiled GNC	10	-
4	SFOC	12	13
5	Soyabean meal	10	15
6	Fishmeal	10	10
7	Mineral mixture	2	2
8	Total	100	100
9	CP (%)	22.96	21.02
10	ME (Kcal/kg)	2893.4	2904.8
11	Calcium (%)	1.23	1.22
12	Phosphorus (%)	0.85	0.86
13	Lysine (%)	1.10	1.10
14	Methionine (%)	0.55	0.57

All the birds were raised under deep litter system of management and standard feeding and other management practices were followed. The per cent ingredient and nutrient composition of the diet for treatment groups are furnished (Table 1). The dietary treatments were control – T0 with no enzyme, T1 T2 and T3 were 25, 50 and 100 g of xylanase enzyme per tonne of feed (Bioxylanase – F - 8000 units per g, Biocon India Ltd.) as supplementation. Feeding was carried out up to eight weeks of age. Data on body weight at 2, 4, 6 and 8 weeks were recorded and subjected to analysis of variance as per Snedcorand Cochran (1989).

RESULTS AND DISCUSSION

The means for live body weightsobserved to range from 34.7 to 35.0, 133.4 to 151.4, 297.6 to 326.7, 499.9 to 546.1 and 782.0 to 825.5 g for hatch, 2^{nd}, 4^{th}, 6^{th} and 8^{th} week age groups respectively (Table 2).

Table: 2 Growth performances of broilers

	Mean squares	**T0**	**T1**	**T2**	**T3**
Hatch weight	2.747^{NS}	34.76±0.36 (60)	34.99±0.33 (60)	34.59±0.29 (60)	35.03±0.32 (60)
2^{nd} week	3258.152^{**}	$147.36±3.09^{c}$ (59)	$133.40±3.38^{a}$ (60)	$142.92±3.09^{b}$ (59)	$151.41±2.97^{c}$ (59)
4^{th} week	5301.247^{*}	$302.22±7.10^{a}$ (59)	$297.58±5.74^{a}$ (60)	$326.68±7.20^{c}$ (59)	$313.85±6.24^{b}$ (59)
6^{th} week	15226.270^{**}	$499.98±9.71^{a}$ (57)	$503.85±9.39^{a}$ (59)	$546.09±10.49^{c}$ (59)	$519.14±10.04^{b}$ (59)
8^{th} week	5124.818^{NS}	799.00±14.73 (56)	782.05±13.11 (59)	825.53±14.90 (57)	814.86±15.54 (58)

Means bearing the same superscript within classes do not differ significantly.
(P<0.05),(P<0.01).*

Mean body weights at 2^{nd} and 6^{th} week age groups in different treatments showed highly significant variation (P<0.01); body weight at 4^{th} week age group showed significant variation (P<0.05) and the effect is not significant for other age groups. It was also observed that the inclusion level of xylanase at 50g per tonne of feed was found to be effective up to six weeks in producing significantly higher body weight than all other inclusion levels. Similar findings were reported by Fuente *et al.*, 1995; Juin *et al.*, 1995 and Yang *et al.*, 2008. However, non-significant effects on body weight were also recorded (Rekhate *et al.*, 2010).

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