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Research Article

INFLUENCE OF GLUCONASE ON GROWTH PERFORMANCE OF NANDANAM COLOUR BROILERS

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ABSTRACT
Individual supplementation of corn-based broiler diets with exogenous gluconase was studied in 289 straight run day old Nandanam colour broiler chicks, which were randomly distributed to four treatments, of two replicates, each containing around 36 chicks. The broilers were fed with standard broiler starter and finisher ration without, 25, 50 and 100g of β Gluconase enzyme per tonne of feed (β Gluconase – 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 were significantly influenced by gluconase enzyme supplementation at all inclusion levels in all age groups. It can be concluded that the inclusion of gluconase in feed had a significant influence on the growth performance in Nandanam colour broilers.

Key Words: *Broiler, Enzyme, Gluconase, Growth Performance*

INTRODUCTION
At basic level, feedstuffs consist of protein, starch, fat and fiber. In monogastric animals the fiber component has been considered to be wasted and in some instances, compounds called Non-starch polysaccharides (NSP) can exert anti-nutritive activity on the animal. The NSP of barley, wheat and rye has been the most intensively investigated. Beta glucan in concentrations ranging from 30-60 g/kg dry matter has been shown to depress production in broilers and cause sticky droppings (pasted vents). Hence, the present study was undertaken to analyse the effect of gluconase on growth performance of Nandanam colour broilers.

MATERIALS AND METHODS
The biological trial of eight weeks duration (0-8 weeks) was carried out with 289 day old straight run chicks of Nandanam colour 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 (6-8 wks)
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 β gluconase enzyme per tonne of feed (β Gluconase - 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 Snedcor and Cochran (1989).

RESULTS AND DISCUSSION

The means for live body weights observed to range from 145.73 to 160.24, 291.59 to 323.93, 614.39 to 653.44 and 881.79 to 941.76 g for 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**
2^{nd} week	2964.21^{**}	145.73 ± 2.25^{a} (73)	158.10 ± 2.57^{b} (73)	155.27 ± 2.87^{b} (73)	160.24 ± 2.24^{b} (70)
4^{th} week	13236.13^{**}	291.59 ± 5.79^{a} (73)	302.38 ± 5.46^{ab} (73)	310.23 ± 6.00^{b} (73)	323.93 ± 5.24^{b} (70)
6^{th} week	21092.62^{*}	621.66 ± 10.64^{a} (73)	653.44 ± 12.11^{b} (73)	614.39 ± 10.01^{a} (73)	632.29 ± 8.40^{a} (65)
8^{th} week	47559.27^{*}	919.65 ± 15.58^{b} (69)	941.76 ± 22.87^{b} (66)	881.79 ± 20.76^{a} (72)	931.04 ± 12.37^{b} (64)

*Means bearing the same superscript within classes do not differ significantly. **(P<0.015),*(P<0.05).*

Mean body weights at 2^{nd} and 4^{th} week age groups in different treatments showed highly significant variation (P<0.01) and the effect is significant (P<0.05) for other age groups. Similar findings were reported by Aravind Bhat (1991), Ananda kumar (1993), Raju *et al.,* (2004) and Rekhate *et al.,* (2010). It can be concluded that the inclusion of biocellulase in feed has not significantly influenced the growth performance in Nandanam colour broilers.

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