



Effect of Supplementation of Multi Enzyme on Production Performance of White Leghorn Layers

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The primary ingredients of poultry diets are of plant origin especially from seed part of plants. The Non-Starch Polysaccharides (NSP) in plants viz. cellulose, hemicelluloses, pectins, glucans and arabinoxylans affect nutritive values of feed ingredients in many ways [1]. One of the primary reasons is the NSP compounds cannot be digested by chicken due to lack of NSP hydrolyzing enzymes. Dietary NSP inhibits digestion of starch, fat and protein [2] and amount of emulsified lipids. NSP enzymes break the NSP of plant cell wall and release the entrapped nutrients into the gut [3]. Review of literature reveals that the combination of Lysophospholipids along with exogenous enzymes complex have positive effects on nutrients digestibility and absorption which is reflected on feed efficiency and production performance [4]. Based on that, this study was carried out to investigate the effects of combination of exogenous enzymes with lysophospholipids (NutriKEM L dry) on production performance in White Leghorn Layers.

Material and Methods

An experiment for a period of 10 weeks duration was conducted to study the effects of supplementation of Exogenous Enzymes Complex in combination with Lysophospholipids (EEC-L) on production performance of pure line White Leghorn (Forsgate strain) layers at Poultry Research Station, TANUVAS, Chennai in the year 2013. A total of 180 WLH pullets at 25 weeks of age were weighed individually, randomly divided into three groups (T1, T2 and T3) with three replicates of 20 birds each. An Isonitrogenous and isocaloric experimental layer diets were formulated as per the recommended nutrients level and supplemented with EEC-L at the rate of 0, 0.05 and 0.1 per cent respectively (Control diet-0, T1-0.05 and T2-0.10 per cent). Diets were offered ad libitum from 25 to 35 weeks of age and the birds were maintained in cage system of rearing with standard managerial condition. The parameters such as Hen Housed Egg Produc-

tion (HHEP), feed intake, egg weight were recorded and feed intake per egg, feed cost per egg and net receipt over total feed cost were calculated. The data were analyzed as per standard statistical procedure described by Snedecor and Cochran (1994) [5].

Results and Discussion

The effect of different levels of exogenous enzymes with lysophospholipids supplementation on production performance of WLH is presented in Table.

Body weights prior and after the experiment did not differ significantly across the experimental diets. Irrespective of the dietary treatments, the birds gained 3.83 per cent of live weight relative to its initial body weight. Mean per cent Hen housed egg production was significantly ($P < 0.05$) high in diet supplemented with 0.10 EEC-L per cent (67.32 ± 1.62) than other two groups. This was in line with report of increased egg production in commercial layers due to dietary multi enzyme supplementation [6,7]. The improved performance of layers with enzyme supplementation might be due to increased in ileal digestibility and released bound or entrapped dietary nutrients [8]. As Bedford (1996) [9] reported the action of enzymes supplementation may be improving the overall nutrients digestion and reducing endogenous amino acid losses. Mean egg weight and average daily feed consumption during 25 to 35 weeks of age indicated no significant effect of EEC-L supplementation. Average daily feed consumption per bird in control, 0.05% and 0.1% EEC-L supplemented groups were 108.13, 105.66 and 107.67g respectively and birds offered control diet recorded numerically more feed intake than EEC-L supplemented groups. Similar trend was observed by Rama Rao., et al. (loc. cit) in commercial layers. Comparatively low feed per egg (179 g) was observed in 0.10 per cent group followed by 0.05 per cent group (183 g) which offers economic benefits than control diets

The cost of feed per egg was significantly low (Rs. 3.30) in diet with 0.10 per cent followed by 0.05 per cent (Rs.3.35) EEC-L supple-

mented group. A net receipt over total feed cost was better in EEC-L supplemented groups (18.89 to 20.70%) than control group (12.9%). These findings are also in agreement with the number research studies observation on positive responses due to the addition of exogenous enzymes in terms of reduced feed per egg, feed cost per egg, improved efficiency. [10-12].

Summary

The study indicated that the supplementation of Exogenous Enzymes Complex in combination with Lysophospholipids to WLH layer diet at 25-35 weeks of age is beneficial in terms of higher egg production reduced feed intake there by benefiting relative cost economics in feeding of commercial layers.

Bibliography

1. Souffrant WB. *Animal Feed Science and Technology* 90 (2001): 93-102.
2. Choct M. "Enzyme supplementation of poultry diets based on various cereals". In: *Enzymes in farm animal nutrition*. Ed: M.R. Bedford and G.G. Partridge, CABI Publishing, UK, (2001): 145-160.
3. Kocher A., et al. *Applied Poultry Research* 12 (2003): 275-283.
4. Santos AA., et al. *International Journal of Poultry Science* 3.1 (2004): 20-32.
5. Snedecor GW and Cochran WG. *Statistical Methods*. 9th ed. Oxford and IBH publishing Co., Calcutta (1994).
6. Scheideler SE., et al. *Journal of Applied Poultry Research* 14 (2005): 77-86.
7. Malekian Gh., et al. *Poultry Science Journal* 1(2013): 36-45.
8. Rama Rao SV., et al. "Proceeding of Animal Nutrition Association world Conference". (2005): 14-17.
9. Bedford MR. *The Journal of Applied Poultry Research* 5 (1996): 86-95.
10. Cook ME., et al. *Poultry Science* 79.7 (2000): Abstract 126.
11. Gonzalez NJ., et al. *Poultry Science* 79.7 (2001): Abstract 151.
12. Saleh SY., et al. *Avian and Poultry Bio Reviews* 17.2 (2006): 1470-1478.

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