

Efficacy of Feeding Yeast and Acidifier on Performance of Japanese Quails

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Abstract

The present study was carried out for six weeks on 135 day old quail chicks to study the effect of supplementation of yeast and acidifier on growth performance. The dietary treatments comprised of T₁ – control i.e. corn - soya based diet as control, whereas T₂ and T₃ supplemented with yeast and acidifier respectively. The body weight gain and feed conversion efficiency was significantly (P<0.01) better in yeast and acidifier fed groups. Similarly, dressing percentage was also significantly (P<0.05) better in these groups. Also, N₂ retention was found maximum in acidifier group whereas in yeast group it is low as compared to control. It is concluded that yeast and acidifier can be incorporated in diet of Japanese quail as a growth promoter.

Keywords: Yeast, Efficacy, Japanese Quail, Performance, Acidifier.

Introduction

Introduction of quail is one of the important milestones to achieve the goal in this aspect, which has an enormous potentiality of eggs and meat production (Biswas and Sinha, 1989). A breakthrough was achieved by the scientist by means of supplementation of growth promoters such as acidifier and yeast in improving the growth rate and feed efficiency of quails. Acidifiers reduce the gastric P^H which results in retardation of growth of pathogenic microorganism. This feed additive plays a significant role in quail's production and helps in reduction in cost of production.

Therefore, an effort has been made to study the effect of yeast and acidifier on performance of Japanese quails.

Materials and Methods

One hundred and thirty five day old quail chicks were randomly divided into three treatment groups comprising three replications and fifteen chicks in each. The dietary treatments were comprising of T₁ control diet with corn-soya based and T₂ supplemented with T₁ + Yeast @ 200 gm / ton of feed, and T₃ with acidifier @ 1000 gm / ton of feed. Diets were prepared as per ICAR standards (Panda *et al.*, 2002). The chemical analysis of the experimental diets was carried out as

per AOAC (1990) which is presented in Table 1. The data collected during the study and analyzed as per "Snedecor and Cochran (1994) by using, "Factorial and Completely Randomized Design" (FCRD).

Results and Discussion

The significant (P<0.01) improvement in live body weight of quails as compared to control was reported on diet containing yeast and acidifier. The observations are consistent with Ali *et al.* (2000) and Khati (2006) who reported significantly increased live weights of Japanese quails due to dietary supplementation of yeast. Similar findings are observed by Sehu *et al* (1997). However Saha (2000) reported significant improvement in live body weight of quails by inclusion of acidifier in diets. The feed consumption did not differ due to supplementation of yeast and acidifier. These findings are in accordance with Shyam Sunder *et al* (1988) and Sehu *et al* (1997) who revealed non significant effect on feed consumption due to acidifier was reported by Saha (2002). Similarly Yalcin *et al* (1997) reported non significant effect on feed intake by inclusion of lactic acid in diet. Significantly (P<0.05) better feed conversion efficiency was reported on yeast and acidifier supplemented group than the control. These findings are in accordance with Khati (2005) and Ali (2000) who

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Table 1. Percent composition of experimental diets

Sr. No.	Feed Ingredients	Starter (0-3 weeks)	Finisher (0-4 weeks)
1.	Maize, yellow	43.00	52.00
2.	Soyabean meal, DOC	52.50	44.00
3.	Dicalcium Phosphate	1.45	1.50
4.	Limestone Powder	1.50	1.75
5.	Minerals and Feed Supplement	0.30	0.30
6.	Vitamin Premix	0.15	0.15
7.	Vegetable Oil	0.50	—
8.	CP (%)	26.95	24.04
9.	M.E. Kcal / Kg (Calculated)	2740	2785

Table 2. Performance of Japanese Quails on Probiotic and Enzymes supplementation

Groups	Initial b.wt. (gms)	Final b.wt.** (gms)	Weekly b.wt. gain**(gms)	Total feed consumption (gms)	Feed Conversion Ratio*	Dressing (%)	N ₂ Retention (%)
T ₁ Control	8.84± 0.20	221.55 ^a ±2.30	35.45 ^a ± 3.07	121.95 ±1.51	3.33 ^a ±0.14	69.06 ^a ±0.66	59.00
T ₂ Yeast	9.24± 0.22	236.00 ^b ± 1.89	38.59 ^b ±3.641	20.66± 1.48	3.02 ^b ± 0.12	70.92 ^{ab} ±0.38	60.00
T ₃ Acidifier	9.57± 0.11	237.00 ^c ±2.79	36.84 ^a ±2.951	20.28±1.45	3.15 ^b ± 0.13	73.46 ^b ± 0.75	61.00

a, b, c mean values having different superscript in column differ significantly,

** - (P<0.01) and * - (P<0.05)

reported that yeast culture significantly improves feed efficiency of quails than that of control. Saha (2002) and Schumacher *et al* (2007) reported significantly (P<0.05) better feed efficiency on 1.25% fumaric acid. The dressing percentage was significantly (P<0.05) better acidifier fed group, however it was comparable with yeast fed group. Khati (2005) also observed the improved dressing yield.

N₂ retention was significantly more in acidifier group comprising with yeast and control. Thirumeignanam *et al* (2006) revealed higher N₂ retention in 1.0 % and 1.5 % organic acid.

It was concluded that yeast and acidifier can be successfully incorporated in diet of Japanese quails as a growth promoter.

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