RESEARCH ARTICLE

Comparative Efficacy of Homoeopathic and Antibiotic Growth Promoters on Performance of Commercial Broiler Chicken

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Abstract

The application of antibiotics as growth promoter in poultry has been banned, hence alternative growth promoters are required to be used. One of them is Homoeopathic remedies. The present study was conducted to evaluate the effect of Homoeopathic and Antibiotic growth promoters on growth performance and feed efficiency of commercial broiler chicken. A total of 144 straight-run day-old commercial broiler chicks were randomly distributed to three treatments (T_1, T_2, T_3). Each treatment consisted of eight replicates and in each replicate, six chicks were there, leading to 48 chicks per treatment. Birds in T_1 (Control), received basal diet, while birds of T_2 group were provided with Antibiotic Growth Promoters (AGP, Avilamycin, 10 g/100 kg) through feed and T_3 group provided with Homoeopathic Growth Promoter (HGP, 2 mL/L) through drinking water. Up to 6 weeks of age, the body weight in birds of control group was significantly ($p<0.05$) higher as compared to AGP and HGP, which were at par with each other. The body weight gain of control group during the whole experimental period was significantly ($p<0.05$) higher than AGP, and that of HGP was intermediate between Control group and AGP. At the end of experiment, the feed consumption in Control group was significantly ($p<0.05$) higher compared to AGP and HGP, which were at par with each other. The FCRs of control and HGP were at par, and significantly ($p<0.05$) improved as compared to that of AGP. Livability was found better in control group and HGP than AGP. The higher ROFC was obtained in the birds fed with control diet followed by AGP and HGP groups. The beneficial effect on performance was found better in the birds of control group. From the results, it can be concluded that there was no beneficial effect of Antibiotic as well as Homeopathic growth promoters on performance of commercial broiler chicken as compared to control.

Keywords: Antibiotic growth promoter, Homoeopathic growth promoter, Commercial broiler chicken, Growth performance.

Ind J Vet Sci and Biotech (2025): 10.48165/ijvsbt.21.2.06

Introduction

Chicken rearing is one of the most intensive types of poultry farming for meat and egg production, which is valuable strategy for combatting poverty and malnutrition. Currently, the modern broiler industry focuses on achieving high production levels and maximizing feed conversion efficiency. Feed is a critical and expensive component, representing more than 75% of poultry production costs. Various feed additives such as enzymes, probiotics and antibiotic growth promoters (AGPs) are used to enhance bird's growth and improve feed efficiency. However, the excessive use of antibiotics has led to environmental contamination and increased antibiotic resistance. As a result, the European Union banned use of antibiotic growth promoters in 2006 (Castanon, 2007). So, the poultry industry is now moving towards safer alternatives of antibiotic growth promoters. One of them is homoeopathic remedies, which are safer and environmental friendly. Homoeopathy is an effective and safe medicine which does not leave drug residues in meat and eggs. Another advantage is that it does not trigger antibiotic resistance in bacterial populations (Camerlink *et al.,* 2010).

Many veterinarians around the world currently use homoeopathic medicines as first-line or referral practice (Mathie *et al.,* 2010). In poultry production, homoeopathic remedies are mainly used as preventive or therapeutic intent (Amalcaburio *et al.,* 2009). Research on Homoeopathic growth promoter has been carried out by very few researchers (Doehring and Sundrum, 2016). Homoeopathic remedies function on principle of *similia similibus curentur* means let like be cured by like. Homoeopathic remedies consumed

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How to cite this article: Gameti, C. B., Savaliya, F. P., Mali, A. G., Patel, A. B., Bhagora, N. J., & Shekh, M. A. (2025). Comparative Efficacy of Homoeopathic and Antibiotic Growth Promoters on Performance of Commercial Broiler Chicken. Ind J Vet Sci and Biotech, 21(2), 28-31.

Source of support: Nil

Conflict of interest: None

Submitted 24/12/2024 **Accepted** 22/01/2025 **Published** 10/03/2025

by a healthy person, it would cause symptoms similar to the patient's presenting symptoms. This similia principle is the heart of Homoeopathy. According to Hahnemann, Homoeopathy may act by releasing some kind of energy that stimulates the body's defense mechanism, the vital force (Madrewar, 2004). Homoeopathic drugs are believed to act on the vital force, possibly through the hypothalamic-hypophyseal axis (Galli *et al.,* 2022). They may regulate essential functions such as hunger, thirst, thermoregulation and metabolism and in turn they influence directly growth performance. So, they may be a better substitute for AGP in commercial broiler chicken. Homoeopathic remedies have boosted poultry health and performance, but scientific evidence supporting their effectiveness remains limited (Mathie, 2003). Therefore, this study was planned to evaluate the comparative efficacy of homoeopathic and antibiotic growth promoters on performance of commercial broiler chicken.

Materials and Methods

The experimental study was conducted at Poultry Research Station, Veterinary and Animal Science Research and Extension Unit, Kamdhenu University, Anand, Gujarat. Total one hundred and forty-four (144) straight-run day-old commercial broiler chicks of a single hatch were purchased from a private hatchery for experiment and were housed in a separate deep litter pen. The duration of experiment was six weeks (16th March to 26th April, 2024). During the study period the average temperature was 30.18 °C and relative humidity 65.00 %. After arrival, chicks were wing-banded and weighed individually. The chicks were randomly distributed to three treatments. Each treatment consisted of eight replicates and in each replicate six chicks were there, leading to 48 chicks per treatment. Basal diet was formulated as per BIS specifications and provided *ad libitum* to the birds as pre-starter, starter, and finisher diets during 0-7 days, 8-21 days and 22-42 days of age, respectively. T_1 (control) group was provided with Basal diet without Antibiotic and Homoeopathic growth promoter, T_2 was provided with Basal diet + Antibiotic Growth Promoter Avilamycin @ 10 g/100 kg of feed, and T_3 with Basal diet + Homoeopathic Growth Promoter @ 2 mL/litre of water, three times a day. Homeopathic growth promoter used in experiment included *Alfalfa* M.T.*, Withania somniferra* M.T.*, Avena sativa* M.T.*, Calcarea phos* 30 CH*, Chelidonium* 30 CH and *Lycopodium* 30 CH. Standard medication protocols were followed. All essential biosecurity measures were implemented. The birds were immunized against Ranikhet Disease (RD) and Infectious Bursal Disease (IBD) according to the standard schedule. During the experiment, the feed consumption, weekly and total body weight and body weight gain, feed conversion ratio (FCR), livability and return over feed cost (ROFC) were recorded. The data were analyzed using Completely Randomized Design as per Snedecor and Cochran (1994). Means of replicates under each treatment were considered for analysis.

Results and Discussion

Body Weight

The mean body weight (BW) at day old age was found to be non-significantly different between three groups. At the end of the third week, non-significant differences were recorded in body weights of all groups. However, control group recorded higher mean body weight followed by AGP and HGP, groups. At the end of sixth week, body weight was significantly ($p<0.05$) higher in control group as compared to AGP and HGP groups. However, the body weight of later two groups was at par with each other (Table 1). The present findings contradicted with Hadipour *et al.* (2011), Rawat *et al.* (2018), Soumya and Leena (2018), and Galli *et al.* (2022), who observed significantly ($p<0.05$) higher body weight (BW6) in birds supplemented with Homoeopathic remedy as compared to control group, while Amalcaburio *et al.* (2009) observed non-significant differences in body weight (BW6) of treatment and control group.

Table 1: Body weight (BW, g) of broilers at different ages (0, 1, 2, 3, 4, 5 and 6 weeks) supplemented with various growth promoters

Treatments	Dietary treatment groups		
	T_1 (Control)	T_2 (AGP)	T_3 (HGP)
BW_0	42.48±0.46	42.50±0.40	43.33±0.45
BW_1	157.68 ± 2.57	159.63 ± 2.33	154.22 ± 1.98
BW_2	404.21 ± 6.46	405.71 ± 5.31	397.46 ± 5.05
BW_3	825.08±13.51	816.52± 11.20	797.29±11.56
BW_4	1346.90 ± 21.62	1315.65 ± 21.01	1315.40 ± 20.43
BW_5	1906.00 ± 36.18	1757.96 ± 35.49	1737.38 ± 31.37
BW_6	2389.58^a±46.59	2051.48^b±47.49	2148.67^b±50.21

Means with different superscripts within a row differ significantly ($p<0.05$).

Body Weight Gain

During the pre-starter phase, body weight gain (BWG) was non-significantly different for all the groups. In the starter phase, no significant differences were observed in body weight gain among all groups. However, higher body weight gain was recorded in control group followed by AGP and HGP groups, while in finisher phase, the body weight gain of control group was significantly ($p<0.05$) higher than AGP and HGP groups, which were at par with each other. The overall body weight gain (BWG_{0-6}) was significantly ($p<0.05$) higher in control group than the AGP group, while in HGP it was intermediate (Table 2). The present findings are in contrast with Hadipour *et al.* (2011), Rawat *et al.* (2018), Soumya and Leena (2018), and Galli *et al.* (2022), who observed significantly ($p<0.05$) higher body weight gain in birds supplied with homoeopathic remedy as compared to control group, while Amalcaburio *et al.* (2009) observed non-significant differences in body weight gain of treatments and control.

Table 2: Body weight gain (BWG), overall feed consumption (FC) and FCR at different weeks of life of broilers fed homoeopathic and antibiotic growth promoters

Parameter	Treatments	BWG_{0-1} (Day 0-7)	BWG_{2-3} (Day 8-21)	BWG_{4-6} (Day 22-42)	BWG_{0-6} (Day 0-42)
Body weight gain (BWG)	T_1	115.20±2.56	420.88±8.65	1564.50^{a}±40.07	2347.10^{a}±46.59
	T_2	117.13±2.32	410.81±6.81	1190.65^{b}±67.98	2008.98^{b}±41.25
	T_3	110.89±2.02	399.83±7.89	1351.38^{b}±33.42	2105.34^{ab}±40.17
		FC_{0-1}	**FC_{2-3}**	**FC_{4-6}**	**FC_{0-6}**
Overall feed consumption (FC)	T_1	134.69^{a}±2.72	971.33^{a}±9.55	2853.56±50.67	3959.60^{a}±50.29
	T_2	129.92^{ab}±1.60	967.67^{a}±8.26	2629.64±66.32	3727.23^{b}±106.38
	T_3	125.71^{b}±2.10	933.88^{b}±9.65	2628.50±44.89	3688.08^{b}±41.30
		FCR_{0-1}	**FCR_{2-3}**	**FCR_{4-6}**	**FCR_{0-6}**
Feed conversion ratio (FCR)	T_1	0.86±0.02	1.46±0.03	1.94^{b}±0.07	1.66^{b}±0.03
	T_2	0.82±0.02	1.48±0.03	2.37^{a}±0.15	1.83^{a}±0.04
	T_3	0.82±0.01	1.46±0.04	2.05^{b}±0.03	1.72^{b}±0.02

Means with different superscripts within a column differ significantly between treatment for a parameter ($p<0.05$).

Feed Consumption

During the pre-starter phase, the feed consumption of control group was significantly higher than HGP group. In the starter, finisher and overall period, mean feed consumption of birds fed with basal diet was significantly ($p<0.05$) higher than all other groups. There were no significant differences in mean feed consumption between birds of the AGP and HGP groups, though the values were apparently higher in AGP than HGP group (Table 2). These findings contradicted with Rawat *et al.* (2018), Soumya and Leena (2018), and Galli *et al.* (2022), who recorded significantly ($p<0.05$) higher feed consumption (FC_{0-6}) in treatments as compared to control group.

Feed Conversion Ratio

The difference in FCR was found to be non-significant during pre-starter phase among three groups. In the starter phase, the feed conversion ratio of control group, AGP group and HGP group did not differ significantly from each other. While in the finisher phase and during the overall period, improved FCR was observed in control and HGP groups followed by AGP group. However, the mean FCRs of control group and HGP group were at par with each other (Table 2). The present findings concurred well with Hadipour *et al.* (2011), Rawat *et al.* (2018), and Soumya and Leena (2018), who observed significantly ($p<0.05$) improved feed conversion ratio (FCR_{0-6}) in treatments supplemented with homoeopathic remedy as compared to control group. However, the present findings were not in accordance with Amalcaburio *et al.* (2009) and Galli *et al.* (2022), who observed non-significant differences in feed conversion ratio (FCR_{0-6}) of treatments and control groups.

Livability

Livability of birds of control, AGP and HGP groups was 100, 93.75 and 100 %, respectively (Table 3). Control and HGP groups recorded higher (*i.e.*, 100%) livability as compared to AGP group. This finding concurred well with Galli *et al.* (2022), who found no difference in the mortality rate of birds in treatment and control groups. However, the present findings are not in agreement with Hadipour *et al.* (2011), who found reduced mortality rate in treatment groups compared to control group.

Table 3: Livability (%) of broilers supplemented with various growth promoters

Particulars	Treatments		
	T_1 (Control)	**T_2 (AGP)**	**T_3 (HGP)**
No. of birds at day old age	48	48	48
No. of birds died	0	3	0
No. of birds at the end of 6th week	48	45	48
Livability (%)	**100**	**93.75**	**100**

Return over Feed Cost

ROFC (Rs./bird) of the birds fed with control, AGP and HGP diets was 114.74, 66.88 and 58.13, respectively (Table 4). The higher ROFC was observed in the birds fed with control diet followed by AGP and HGP diets, respectively. ROFC was better in birds fed with control diet, which showed higher body weight, body weight gain, feed consumption and feed conversion ratio as compared to AGP and HGP. Among Antibiotic and Homoeopathic growth promoters, Antibiotic growth promoter was found better in terms of economics, although both AGP and HGP did not show any beneficial effect as compared to control diet. Present findings contradicted the findings of Rawat *et al.* (2018), who reported higher net income on supplementation of Homeopathic remedy as compared to control group.

Table 4: Return Over Feed Cost (Rs./bird) fed with different treatment diets

Particulars		Treatments		
		T_1 (Control)	T_2 (AGP)	T_3 (HGP)
Feed consumption (g)	Pre-Starter	134.69	129.92	125.71
	Starter	971.33	967.67	933.88
	Finisher	2853.56	2629.64	2628.50
	Total	3959.60	3727.23	3688.08
Cost of feed (Rs./kg feed)	Pre-Starter	40.19	40.26	40.19
	Starter	41.44	41.50	41.44
	Finisher	42.00	42.08	42.00
Cost of feed consumed (Rs./bird)	Pre-Starter	5.41	5.23	5.05
	Starter	40.25	40.16	38.70
	Finisher	119.84	110.65	110.40
Total cost of feed consumed (Rs./bird)		165.5	156.04	154.15
Average body weight (kg)		2.390	2.051	2.149
Cost of Antibiotic / Homoeopathic growth promoter (Rs./bird)		0.00	15.00	37.00
Income from selling of birds (@ 116 Rs./kg body weight)		277.24	237.92	249.28
ROFC (Rs./bird)		**111.74**	**66.88***	**58.13***

*Significantly lower from the control diet

Birds provided with AGP and HGP showed lower feed consumption due to poor palatability of HGP and AGP compared to a control diet. Also, cost of HGP and AGP diet was higher as compared to control diet.

Conclusions

From the study, it can be concluded that comparative efficacy in terms of performance of commercial broiler birds was better in birds fed with Homoeopathic growth promoter as compared to Antibiotic growth promoter, whereas, economics was better in birds fed with Antibiotic growth promoter as compared to Homoeopathic growth promoter due to higher cost of Homoeopathic growth promoter. However, both these diets did not show any beneficial effect in broiler birds as compared to control diet.

Acknowledgements

We gratefully acknowledge the Dean of the Veterinary College and the Director of Research, Kamdhenu University, Anand, Gujarat, for providing funds and facilities for the conduct of research work.

References

Amalcaburio, R., Machado Filho, L.C.P., Honorato, L.A., & Nelton, A.Ã. (2009). Homoeopathic remedies in a semi-intensive alternative system of broiler production. *International Journal of High Dilution Research, 8*(26), 33-39.

Camerlink, I., Ellinger, L., Bakker, E.J., & Lantinga, E.A. (2010). Homeopathy as replacement to antibiotics in the case of *Escherichia coli* diarrhoea in neonatal piglets. *Homeopathy*, *99*(01), 57-62.

Castanon, J.I.R. (2007). History of the use of antibiotic as growth promoters in European poultry feeds. *Poultry Science, 86*(11), 2466-2471.

Doehring, C., & Sundrum, A. (2016). Efficacy of homeopathy in livestock according to peer-reviewed publications from 1981 to 2014. *Veterinary Record*, *179*(24), 628-628.

Galli, G.M., Boiago, M.M., Glombowsky, P., Marchiori, M.S., Bissacotti, B.F., Copetti, P.M., & da Silva, A.S. (2022). Addition of seaweed flour (*Lithothamnium calcareum*) combined with Homoeopathic feed for broiler chicken decreases the toxic effects caused by aflatoxin B1. *Research, Society and Development*, *11*(11), e308111133305-e308111133305.

Hadipour, M.M., Habibi, G.H., Ghorashinejad, A., Olyaie, A., & Torki, M. (2011). Evaluation of the Homoeopathic remedies. *Journal of Animal and Veterinary Advances*, *10*(16), 2102-2105.

Madrewar, B.P. (2004). *Poultry Homoeopathy*. B. Jain Publishers, Lucknow, India.

Mathie, R.T. (2003). The research evidence base for homoeopathy: A fresh assessment of the literature. *Homeopathy*, *92*(2), 84-91.

Mathie, R.T., Baitson, E.S., Hansen, L., Elliott, M.F., & Hoare, J. (2010). Homeopathic prescribing for chronic conditions in feline and canine veterinary practice. *Homeopathy*, *99*(04), 243-248.

Rawat, D., Shah, R., Nepali, D.B., & Yadav, J.L. (2018). Effect of Homoeopathic medicine (alfalfa), methionine and lysine supplementation in low protein based diets on the performance of broiler chicken. *International Journal of Applied Sciences and Biotechnology*, *6*(2), 174-180.

Snedecor, G.W., & Cochran, W.G. (1994). *Statistical Methods*. Oxford and IBH Publishing Co. New Delhi, India, pp. 445-446.

Soumya, M.S., & Leena, N. (2018). Efficacy of alfalfa Q in enhancing the growth of chicken. Retrieved from: http://hdl.handle.net/123456789/2447.