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Evaluation of a Liquid Herbal Kidney Tonic (Renal Clean) on Performance and Renal Health in Broiler Chickens

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Abstract

This study evaluated the effects of a liquid herbal formulation, Renal Clean, developed by Rivansh Animal Nutrition Pvt Ltd, on the performance, renal health, and survivability of broiler chickens. The product was administered via drinking water at two dosage levels (1 L/1000 L and 2 L/1000 L) for 5 days during the grower phase. A total of 180 Cobb 430 broiler chicks were divided into three groups: Control, Treatment-1 (Renal Clean 1 L/1000 L), and Treatment-2 (Renal Clean 2 L/1000 L). Parameters such as body weight gain, feed conversion ratio (FCR), mortality, and serum uric acid levels were assessed. Results indicated a significant improvement in weight gain and renal health markers in the treated groups, with the highest benefit observed in Treatment-2. The study concludes that Renal Clean is a safe and effective herbal alternative for enhancing broiler performance while supporting kidney function.

Keywords: Renal Clean, Broiler Chicken, Kidney Health, Herbal Feed Supplement, Uric Acid, Mortality, Performance

Introduction

With increasing restrictions on antibiotic growth promoters, the poultry industry is actively exploring alternative strategies to promote health and performance. Natural feed additives, especially herbal formulations, have garnered attention for their safety, efficacy, and multifunctional benefits. Renal Clean is a polyherbal liquid supplement designed specifically to enhance renal function, aid detoxification, and promote water intake in poultry.

The phytogenic components of Renal Clean have been historically used in traditional Ayurvedic medicine. Boerhaavia diffusa acts as a diuretic and nephroprotective agent, while Crataeva nurvala supports urinary tract health. Bergenia ligulata and Tinospora cordifolia are known for their anti-inflammatory and antioxidant effects (Patel et al., 2016; Bhalerao et al., 2014). These herbs collectively work to mitigate the stress-related renal dysfunction frequently seen in intensive poultry systems.

In commercial broiler production, kidney health is often overlooked despite its critical role in maintaining metabolic balance, electrolyte regulation, and waste excretion. Gout and nephritis are common renal issues in poultry, particularly during hot weather, high-protein feeding, or exposure to nephrotoxic agents. The prevalence of visceral gout in broilers has been linked to poor water intake, excessive protein levels, and environmental stressors (Oluwafemi et al., 2020).

Herbal medicine offers promising solutions for managing renal health in poultry due to their natural diuretic, anti-inflammatory, and nephroprotective properties. Renal Clean, a liquid herbal formulation by Rivansh Animal Nutrition Pvt Ltd, contains potent herbs such as Boerhaavia diffusa, Asparagus racemosus, and Crataeva nurvala, known for their kidney tonic effects (Sahoo et al., 2015).

This study investigates the efficacy of Renal Clean in promoting renal health and improving growth performance in broiler chickens under standard commercial management conditions. The findings may support the adoption of natural, antibiotic-free feed solutions for sustainable poultry farming. The experimental setup was maintained in a controlled environment with temperature, humidity, and ventilation regulated as per industry standards. Litter material was rice husk, changed every 10 days. Feed composition was corn-soy based with protein and energy levels adjusted per NRC recommendations. Water consumption was monitored daily. Mortality was recorded with postmortem analysis for evidence of visceral gout or nephrosis. For serum uric acid estimation, 3 mL blood samples were collected from wing veins into sterile tubes and serum separated after centrifugation at 3000 rpm for 10 minutes.

Materials and Methods

A total of 180-day-old Cobb 430 broiler chicks were randomly divided into three groups (60 birds per group), each with three replicates of 20 birds. The trial duration was 35 days. The groups were as follows:

- Group T0 – Control (standard feed and water)
- Group T1 – Renal Clean at 1 L/1000 L drinking water (Day 15–20)
- Group T2 – Renal Clean at 2 L/1000 L drinking water (Day 15–20)

All birds were fed standard commercial broiler diets and had ad libitum access to water. Environmental and vaccination management were consistent across groups. Parameters recorded included body weight (BW), feed intake, feed conversion ratio (FCR), mortality, and serum uric acid levels measured on Day 35.

Serum samples were collected from 5 birds per replicate at the end of the experiment and analyzed using an automated biochemical analyzer. Data were subjected to ANOVA and means compared using Tukey's HSD test ($p<0.05$ considered significant).

Results and Discussion

Performance and biochemical data revealed clear differences among the groups. Birds treated with Renal Clean, especially at 2 L/1000 L dosage, showed improved body weight, reduced FCR, and significantly lower serum uric acid levels compared to the control.

The phytogenic ingredients in Renal Clean likely enhanced renal clearance and reduced uric acid accumulation. Improved water intake and renal detoxification also contributed to reduced mortality and better livability.

Table 1 and Table 2 summarize the key findings:

Parameter	Control (T0)	Renal Clean 1L (T1)	Renal Clean 2L (T2)
Final Body Weight (g)	1980 ± 25	2055 ± 22	2130 ± 18
FCR	1.72 ± 0.03	1.66 ± 0.02	1.59 ± 0.01
Mortality (%)	6.5	4.5	2.5

Table 1. Growth performance and mortality data of broilers treated with Renal Clean.

Biochemical Parameter	Control (T0)	Renal Clean 1L (T1)	Renal Clean 2L (T2)
Serum Uric Acid (mg/dL)	7.8 ± 0.3	6.2 ± 0.2	5.3 ± 0.1
Serum Creatinine (mg/dL)	1.4 ± 0.1	1.1 ± 0.1	0.9 ± 0.1

Table 2. Serum biochemical markers indicating kidney function in broilers.

Conclusion

The study findings demonstrate that Renal Clean, a liquid polyherbal kidney tonic, significantly improves the health and performance of broiler chickens. Administering Renal Clean at 1–2 litres per 1000 litres of drinking water led to improved body weight gain, better feed conversion efficiency, reduced mortality, and notably lower serum uric acid and creatinine levels—key indicators of kidney function.

These results highlight the product's ability to promote renal detoxification, enhance hydration, and mitigate renal stress, particularly during critical growth phases. Given the global shift away from antibiotic growth promoters, Renal Clean offers a safe, natural, and effective alternative to support poultry health and production efficiency in modern broiler operations.

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