



# Effect of Feeding Cow Urine Ark and Aloe Vera on Performance and Carcass Traits of Broilers

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## ABSTRACT

A study was carried out to find the effect of feeding Cow urine ark and Aloe vera extract on performance and carcass traits of broilers. For Performance Quality, Body Weight of birds were weighed on weekly basis till 6 weeks of age. Weight gain in different groups of broilers was calculated on weekly basis. Evaluation of Feed Intake was done on the basis of feed offered and left over feed recorded at the end of that week. Feed efficiency ratio (FER) and Performance index (PI) were also calculated. To study the carcass traits, two broilers in each replicate were slaughtered on termination of experiment. For Organ weight percentage various visceral organs like liver, heart gizzard and gible were weighed. Carcass yield percentage were evaluated by recording dressed weight and eviscerated weight. Aloe vera extract causes significant increase in body weight gain, feed consumption, FER and performance index of broilers. Significant increase was also reported in carcass trait of birds.

**Keywords:** Feed consumption, FER, Performance index, Dressed weight, Eviscerated weight, Cow Urine Ark and Aloe Vera Carcass Trait, Broilers

In poultry feed consumption play a major role in affecting net return from the poultry because about 65 to 70% of the total expenditure in terms of cash is spent on feed. To ensure more net return and to lessen the adverse effect of the synthetic feed additives on animal as well as on consumer's health; many of the herbal growth stimulators now a days are being used as an alternative feed additives in the poultry ration. There is some evidence from the earlier workers that the use of commercial blends of herbs can reduce the cost of poultry production and increase the body weight. Therefore, herbs can be included as feed additive in the poultry diet to utilize their benefits to the maximum extent. Mehala and Moorthy (2008) studied



the inclusion of Aloe vera and *Curcuma longa* and its combinations on production performance and biochemical parameters. Mmereole (2011) evaluated the effects of dietary inclusion of Aloe vera as a growth promoter on the performance and the haematological characteristics of the broiler chickens. Cow urine has been described in 'Sushrita Samhita' and 'Ashtanga Sangraha' to be the most effective substance/secretion of animal origin with innumerable therapeutic values (Kekuda *et al.*, 2010). *Aloe vera* (*Aloe barbadensis*) is a perennial succulent xerophyte, have been used since centuries for its curative and therapeutic properties. The present study was undertaken to evaluate the effect of feeding Cow urine ark and Aloe vera extract on performance and carcass traits of broilers.

## MATERIALS AND METHODS

### *Preparation of Cow urine ark and Aloe vera extract*

The cow urine was collected from Indigenous cows raised under standard feeding and managemental condition from Dayodaya Dairy Farm, Jabalpur. The ark of cow urine was prepared using as per the method of Khanuja *et al.* 2002. The alcoholic extract of Aloe vera was prepared as per the method described by Pandey and Shrivastava (1989).

Forty, day old healthy broilers chicks were procured from Phoenix poultry farm, Jabalpur and used in the study. They were divided into four groups A, B, C and D containing 10 birds in each. They were kept separately and maintained under similar hygienic conditions, standard ration and water was given *ad lib*.

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In treatment group B, C and D, 1 ml Cow urine ark, 1 ml Aloe vera and 0.5 ml Cow urine ark along with 0.5 ml of Aloe vera were given (orally) daily to birds for 45 days respectively. Birds of group A served as control.

### *Performance Quality*

- *Body Weight:* The birds were weighed on weekly basis to know the body weight gain of broilers till 6 weeks of age. Weight gain in different groups of broilers was calculated on weekly basis.
- *Feed Intake:* Weekly feed consumption of broilers was recorded on the basis of feed offered and left over feed recorded at the end of that week.
- *Feed efficiency ratio (FER):* To calculate FER, the body weight gain and feed consumption in each week of experiment were used and calculated by using formula:

$FER = \text{Body weight gain (gms)} / \text{Feed consumption (gms)}$

- *Performance index (PI):* It was calculated as per the formula proposed by Bird (1955)

PI = Body weight gain (gms) x FER

#### *Carcass quality traits*

To study the carcass traits, two broilers in each replicate were slaughtered on termination of experiment. Broilers were kept off feed for twelve hour before slaughter. During this period, they were provided with clean and fresh drinking water *ad-libitum*. Before slaughter, each broiler was weighed and then by giving severe cut to the jugular vein it was sacrificed.

- *Organ weight percentage*

Various visceral organs like liver, heart gizzard and gibleet were weighed.

- *Carcass yield percentage*

For complete bleeding, birds were hanged in inverted position on the iron rails. After complete bleeding, weight was recorded. The weight was again recorded after manual defeathering using hot water (50-55 °C).

*Dressed weight*= Live weight-weight loss as blood, feathers, head, shank and wing tips.

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After recording the dressed weight, a horizontal cut was applied posterior to keel bone. Breast was pushed forward to expose the viscus which was then pulled out. Weight of carcass was recorded again. The eviscerated weight was then recorded as follows:

Eviscerated weight = Dressed weight-Weight of viscera

#### *Statistical analysis*

Mean and SE of Research data were calculated according to the method of Snedecor and Cochran (1994). Significant effect of treatment and interval was analysed by Factorial Design. Significant differences between means of treatment & interval were compared by DMRT.

## **RESULTS AND DISCUSSION**

#### *Performance quality*

- *Body weight gain, feed intake, Feed Efficiency Ratio and Performance Index*

There were significant difference ( $P < 0.05$ ) in performance characteristic in terms of weight gain, feed intake, FER and PI. Higher value for the monitored performance characteristic were observed among birds on administration of Aloe vera and birds treated with combination of Cow urine ark and Aloe vera. However cow urine ark alone did not showed significant effect on performance of birds.

*Carcass quality trait*

*Organ weight percentage*

Cow urine ark and Aloe vera and their respective combinations did not put forth any significant ( $P < 0.05$ ) effect on organ weight of broilers.

At the end of the study period birds were slaughtered for the carcass yield. Birds on administration of Aloe vera extract also showed ( $P < 0.05$ ) increment in carcass yield. Higher value for the monitored carcass characteristic were observed for birds treated with combination of Cow urine ark and Aloe vera .However cow urine ark alone did not showed significant effect on carcass yield of broilers.

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**Table 1:** Effect of Cow urine ark and Aloe vera extract on Performance of Broilers (g) (1st-6th week)

Group	Body weight gain	Feed intake	FER	PI
A	1567.00±0.42	2436.00±0.22	0.64±0.02	1002.88±0.20
B	1580.30±0.40	2365.00±0.56	0.66±0.02	1042.99±0.14
C	1627.92±0.47	2261.00±0.42	0.72±0.01	1172.10±0.15
D	1706.09±0.42	2406.00±0.54	0.70±0.03	1194.26±0.14

**Table 2:** Effect of Cow urine ark and Aloe vera extract on Organ weight (%)

Group	Liver	Heart	Gizzard	Giblet
A	2.23 ±0.003	0.45±0.002	1.23 ±0.002	3.34±0.006
B	2.96 ±0.002	0.45±0.002	1.44±0.006	4.02±0.007
C	2.82±0.002	0.47±0.004	1.67±0.004	4.17±0.004
D	2.94±0.00	0.50±0.003	2.02±0.007	4.23±0.002

**Table 3:** Effect of Cow urine ark, Aloe vera extract on the Carcass Yield (%) of broilers

Group	Dressed weight	Eviscerated weight
A	70.87±0.004	65.55±0.00
B	72.34±0.004	67.69 ±0.004
C	73.45±0.004	68.00±0.002
D	75.31±0.003	69.64±0.007

Increase in body weight gain and feed intake was significantly increased by Aloe vera and and similar results were found by combination Carcass yield results also followed the same trend in increase in organ weight, dressing percentage and eviscerated weight. Similar findings were reported by Durrani *et al.* (2008), Mehala, and Moorthy (2008) and Mmereole (2011).

From this study conclusion may be drawn that Aloe vera can be used to replace antibiotics growth promoters while avoiding the development of drug resistance associated with antibiotic growth promoters.

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#### REFERENCES

- Bird, J.M. 1955. Performance of growing chicken. *Poultry Science*, **34**:1163-1164.
- Durrani, F.R., Sana Ullah, N. Chand, Z. and Akhtar, S. 2008. Aloe gel as anticoccidial and immunostimulant agent in broiler production. *Sarhad Journal of Agriculture*, **24**: 4.
- Kekuda, P., Nishanth, T.R. Parveen, S.V. Kamal, D. and Megharaj, M. 2010. Cow urine concentrate: A potent agent with antimicrobial and anthelmintic activity. *Journal of Pharma Research*, **3**:12-15.
- Khanuja, S.P., Kumar, S.S. Arya, A.K. Jai, S.D. and Mahendra, P. 2002. A pharmaceutical composition containing cow urine distillate and an antibiotic, CSIR, New Delhi (India, U.S., Patent No. 6410059, June 25<sup>th</sup>, 2002).
- Mehala, C. and Moorthy, M. 2008. Effect of *Aloe vera* and *Curcuma longa* (Turmeric) on Carcass Characteristics and Biochemical Parameters of Broilers. *International Journal of Poultry Science*. **7** (9): 857-861.
- Mmereole, F.U.C., 2011. Evaluation of the Dietary Inclusion of Aloe Vera as an Alternative to Antibiotic Growth Promoter in Broiler Production. *Pakistan Journal of Nutrition*, **10** (1): 1-5.
- Pandey, G.P. and Shrivastava, D.N. 1989. Studies on phytochemistry and acute toxicity of Livol and its some ingredients. *Indian Journal of Indigenous Medicine*, **6**:35-49.
- Snedecor, G.W. and Cochran, W.G. 1994. *Statistical Methods*. 8th edn., Iowa State University Press, Iowa, USA.