

# Performance Parameters Augmentation Efficacy of Active Constituent of *Emblica officinalis*

## OBJECTIVE

To investigate the effect of polyphenolic compound: ellagic acid on the performance parameters in quails reared under normal conditions and at high environmental temperatures.

## MATERIALS AND METHODS

Japanese quails (*Coturnix coturnix Japonica*; n=240; 5-weeks old) were reared at 2 environmental temperatures [thermoneutral (TN) and heat stress (HS)]. Eight groups consisting of 30 female quails at 35 days of age were assigned into 6 replicates, and each replicate included 5 quails. The research was conducted in a 2 × 4 (heat, dose) factorial trial. Thermoneutral (TN) groups were kept in cages in temperature-controlled rooms, and heat stress (HS) groups were kept at 34°C for 9 h (08:00–17:00 h). The quails received either a basal diet or a basal diet supplemented with ellagic acid in 0, 100, 200, or 400 mg/kg of the diet. The performance parameters viz. feed intake (g/quail/day), egg production (%), egg weight (g), feed conversion ratio (g feed intake/egg production × egg weight) were evaluated.

## RESULTS

### Effect of ellagic acid on performance of laying quail reared at different temperatures

		Feed intake (g/quail/day)	Egg weight (g)	Feed conversion ratio (g:g)	Egg production %
TN		29.39	12.06	2.85	85.75
HS		27.38	11.58	3.08	77.66
TN	0	29.19	11.76	3.00	83.08
	100	29.34	12.06	2.84	85.89
	200	29.48	12.19	2.79	86.94
	400	29.57	12.23	2.78	87.08
HS	0	27.12	11.54	3.22	73.35
	100	27.16	11.56	3.14	75.76
	200	27.41	11.60	3.14	76.82
	400	27.83	11.63	2.83	84.70
SEM		0.75	0.12	0.09	0.05
ANOVA					
ET		0.001	0.001	0.004	0.001
ELA		0.908	0.123	0.053	0.095
ET×ELA		0.993	0.385	0.516	0.495

TN, Thermoneutral; HS, Heat stress; ET, Environmental temperature; SEM, Standard error of mean; ELA, Ellagic acid, p<0.05. Data are presented as mean and SEM

## CONCLUSIONS

Feed conversion improved in quail fed diets supplemented with ellagic acid.

## OUTCOME

Egg production percentage was improved following supplementation of ellagic acid at 400 mg/kg.

## Reference:

Mutlu SI, Gulter T. The effect of ellagic acid on performance, digestibility, egg quality, cecal bacterial flora, antioxidant activity, and some blood parameters in laying quails reared at different temperatures. Turkish J. Vet. Anim. Sci. 2021;45(1):101-12.