PHYTOCEE®

Antioxidant Capacity of Active Constituent of *Emblica officinalis*

OBJECTIVE

To investigate the effect of polyphenolic compound: ellagic acid on the egg quality 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 serum concentration of malondialdehyde (MDA) was estimated by HPLC method.

RESULTS

Effect of ellagic acid on serum concentration of MDA of laying quail reared at different temperatures

		MDA (µmol/L)
TN		1.131
HS		2.030
TN	0	1.270
	100	1.186
	200	1.071
	400	0.998
HS	0	2.547
	100	2.113
	200	1.810
	400	1.648
SEM		0.404
ANOVA		P
ET		0.001
ELA		0.001
ET×ELA		0.060

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

Serum MDA levels increased with heat stress (p<0.001) and decreased with the supplementation of ellagic acid (p<0.001).

OUTCOME

These beneficial effects of ellagic acid increased with an increasing dose, and 400 mg/kg was the most effective dose.

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.