

LIST OF TABLES

Table	Page
2.1 Effects of heat stress on antioxidant status, barrier integrity, morphology, immunity, and production performance in the gut of chickens	14
2.2 Effects of phytogenic supplementation to mitigate the negative effects of heat stress in broilers	31
3.1 Ingredients and chemical composition of the basal diet for trial 2.	62
3.2 Primer sequences used in real-time PCR.	65
3.3 Heart rates and cloacal temperature of breeder hens under thermoneutral and heat stress conditions.....	66
3.4 RNA-sequencing reads and mapping rates in the jejunal mucosa in heat-stressed breeder hens	67
3.5 Top 20 upregulated and downregulated differentially expressed genes in the jejunal mucosa in heat-stressed breeder hens.....	69
3.6 Kyoto encyclopedia of genes and genomes pathways possibly affected by heat stress in jejunal mucosa in breeding hens.....	73
3.7 Effect of dietary antioxidant supplementation on relative gene markers in jejunal mucosa in breeder hens under heat stress conditions.....	76
4.1 Primer sequences used for real-time PCR.....	100
4.2 RNA-sequencing metrics for jejunal mucosa transcriptome analysis of HA and HS breeder hens under heat stress.	101
4.3 Significantly enriched KEGG pathways in jejunal mucosa tissues between HA and HS breeder hens under heat stress	106
5.1 Ingredients and chemical composition of the basal diet.....	130
5.2 Primer sequences used for real-time PCR.....	132
5.3 Effect of antioxidant supplementation in breeder hen diets under heat stress conditions on gene expression related to the antioxidant enzymes, heat shock proteins, immunity, and tight junction proteins	136

LIST OF TABLES (Continued)

Table	Page
5.4 Effect of antioxidant supplementation in breeder hen diets under heat stress conditions on cecal short-chain fatty acids and ammonia concentrations	137