**HEAT STRESS RESPONSE AND PRODUCTIVITY OF CHICKENS ACCORDING TO HATCHING AND REARING SEASON**

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**ABSTRACT**

Chickens are known to differ in the degree of stress response depending on the external environment conditions. It is also closely related to the degree of stress response and productivity. This study was conducted to investigate the heat stress response and productivity with hatched chickens in winter and summer. The 2,090 Korean native chickens which consisted of 1,156 chickens hatched in cool winter and 934 chickens hatched in hot summer were examined. To evaluate the stress response and productivity of chickens, we analyzed the amount of telomeric DNA, the expression of HSP genes, survival rate and body weights. In results, the expressions of HSPs in winter hatched chickens were significantly higher than those in summer hatched chickens. There was no significant difference in the amount of telomeric DNA between summer and winter hatched chickens. The survival rate was significantly higher in the summer hatched chickens than in the winter hatched chickens at laying period. The egg production was also significantly higher in the summer hatched chickens than in the winter hatched chickens. The body weights from birth to 24weeks were significantly lighter in the summer hatched chickens than in the winter hatched chickens, but the body weight after 28weeks showed reversed. In conclusion, the chicks hatched in summer season are more resistant to heat stress and more preferable productivity, compare with the chickens hatched in winter season. This is suggested that the chicks hatched in the summer acquired the ability to adapt to the thermal environment during the growing stage.