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Physiological alterations of poultry to the high environmental temperature

Running head: Effect of high ambient temperature on poultry

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Abstract

Heat stress has become a serious problem in poultry industry along with rising of the global temperatures. High environmental temperature causes deleterious impacts on physiology and immunology of poultry and impairs their productivity. Heat stress is linked to compromised productivity through a decline in growth rate, feed utilization, blood biochemistry and immunity. In addition, heat stress induced adverse effects on mineral balance of birds and the extent of such effects depended on the type of mineral and the severity of heat stress. Exposure of broilers to high temperature adversely affects mineral metabolism and their excretion route and reduced the retention of some minerals like P, Na, K, S, Mg, Mn, Zn and Cu. On the other hand, the effect of climate on intestinal microbiota has been described in a number of studies. Where, exposure to heat stress can also increase the colonization of *Salmonella* in the intestine and increase the susceptibility of birds to *E. coli* and change ileal contents. It is also characterized by decreased antioxidant enzymes in poultry species, resulting in increased oxidative stress that means presence of reactive oxygen species (ROS) in excess of the available antioxidant capacity of animal cells. However, further studies are still required to increase the information and