

EFFECT OF AGING ON ENZYMATIC AND NON-ENZYMATIC ANTIOXIDANT STATUS IN SAANEN GOATS

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Abstract. Aging is a series of irreversible structural and functional changes in body molecules, cells, tissues, organs and systems. It is an inevitable process in each organism's life. Free radical theory of aging is one of the most widely accepted theories. This study was conducted to determine the effects of aging on the oxidant-antioxidant status by quantifying malondialdehyde-index of oxidative stress and some antioxidant parameters in erythrocytes of Saanen goats. The effects of aging on erythrocyte oxidant-antioxidant values were investigated on 15 kids aged 3–4 month and 15 mother goats 4–5 years of age. The level of serum malonyldialdehyde (MDA) was determined to be significantly higher in mother goats than kids ($P<0.05$). The levels of glutathione (GSH) and glutathione peroxidase (GSH-Px), the antioxidant parameters, were observed to be higher in mother goats than kids ($P<0.05$) whereas catalase (CAT) enzyme activity was to be lower in mother goats than kids ($P<0.05$). While serum β -carotene concentrations in mother goats were determined to be higher than kids ($P<0.05$), it was identified that there were no important difference in levels of plasma vitamin C (Vit C) and serum ceruloplasmin between kids and mother goat ($P>0.05$). As a result, antioxidant parameters were affected by aging process in Saanen goats.

Keywords: aging, Saanen goat, oxidant, antioxidant