

## SELENIUM AND VITAMIN E CONCENTRATIONS IN A HEALTHY DONKEY POPULATION IN CENTRAL ITALY

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Selenium and vitamin E protect the body against oxidative stress [1,2]. Clinical manifestations of their deficiency in equids include neurologic and muscular symptoms [3]. Despite the importance of donkeys as production animals, no reference range exist for selenium and vitamin E. Therefore, the aim of this study was to investigate the plasma concentrations of selenium and vitamin E in healthy donkeys belonging to different ages, sexes and productive phases. Animals were divided into five groups including foals (Group A: n=7), weanlings and yearlings (Group B: n=7), non-pregnant non-lactating jennies (Group C: n=5), pregnant non-lactating jennies (Group D: n=9), and adult males (Group E: n=9). Plasma samples were tested for vitamin E, using high performance liquid chromatography (HPLC), while selenium concentrations were assayed in atomic absorption. One-way ANOVA showed significant differences in selenium concentrations ( $p=0.001$ ), between Group A and Group E. In this study, we found the selenium range for donkeys to be 0.02-0.14  $\mu\text{g/ml}$  which is lower than the recommended range for horses [4-6] suggesting that donkeys may have a lower selenium requirement than horses. A similar trend was observed by Shawaf et al. [7] who found lower selenium concentration in donkeys compared to horses, however this study investigated the level of trace minerals but not vitamins. Plasma vitamin E levels were 3.29-12.99  $\mu\text{mol/L}$ , with foals having lower concentrations compared to adults [8]. Knowing specific reference ranges for vitamin E and selenium in healthy donkeys can help clinicians to prevent deficiencies that could compromise donkeys' overall health and wellbeing.

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