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INDICATORS OF THE ANTIOXIDANT PROTECTION SYSTEM IN THE ORGANISM OF NEW ZEALAND BREED RABBITS

Nataliia V. Rol¹, Maksym M. Fedorchenko¹, Svitlana I. Tsekhmistrenko¹

¹DEPARTMENT OF CHEMISTRY, BILA TSEKVA NATIONAL AGRARIAN UNIVERSITY, UKRAINE
NATALKA290991@GMAIL.COM

Abstract

The processes of peroxidation play an important role in the life of the organism. In contrast to free radical processes in the organism, there is an antioxidant system, which is a set of protective cells mechanisms, tissues and systems aimed at preserving and maintaining homeostasis in the organism.

The purpose of the experiment was to study the functioning of AOS in organs and tissues of New Zealand rabbits in the age-old dynamics. Materials for research were blood plasma, brain, heart, liver and longest back muscle, which were taken after slaughter of animals from birth to 90-day age at intervals of 15 days. The activity of superoxide dismutase (SOD) and catalase activity was determined.

The increase in activity of SOD was recorded in blood plasma on the 15th day of rabbits life and this indicator was significantly higher by 53,8 % compared with the daily allowance. Increasing the activity of SOD was observed in rabbits up to age of 60 days and amounted to $98,36 \pm 5,10$ UD / cm³ during this period, which was believed to be 1,5 times higher than the previous age (45 days) and 3,9 times - in comparison with the animals of the day-old age. Rabbits of the 30-day-old rabbits showed an increase in SOD activity, and in animals at the age of 45 days this figure was higher in 3,4 times compared with day-old animals. The activity of catalase in rabbits blood in the 30th and 45th days has a significant difference and were higher in comparison with previous and day-old animals such figures were 23,2% and respectively 89,6%. In the brain tissues of experimental animals on the 30-th day, the activity of SOD was reduced almost threefold, compared to one-day. At the same time, the activity of catalase in the brain was at a high level – 87,6 % compared to the one-day rabbits. It was found that in the heart, the highest activity of SOD was in one-day rabbits. However, on the 15th day, this figure was lower than 2,2 times compared to the start of the experiment, and the lowest activity of the SOD was observed on the 45-th day of life of rabbits. The activity of catalase in the heart tended to be slight fluctuations. In the longest muscle, there is no significant difference between SOD activity indices. The highest activity rate was observed in rabbits 60-day-old age, and by the 90-th day the activity of SOD decreased by 10,8 %. The activity of catalase has increased from birth to 30-day age by 8,5 %.