

## The Influence Of Avena Sativa Extract On Redox Processes and Fatty Acid Composition Of Lipids In Geese Tissues

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### Abstract

The use of antioxidants in bird feeding helps to eliminate the harmful influence of negative factors of various etiologies. Feeding down the natural antioxidant additives has a number of advantages if compared with traditional synthetic additives. In the grass of common oat, in addition to known bioflavonoids, there were found more compound matters of phenol nature - avenantramids, which were characterized with 10-30 times higher antioxidant activity than other natural antioxidants. **The purpose** of this research was to find out the influence of the extract of common oat *Avena Sativa* on the state of the redox system and the fatty acid composition of the lipids of liver and heart tissues and skeletal muscle of the geese.

In the day-old age, according to the principle of analogues, 2 groups of geese (control and experimental) were formed, each of them consisted of 26 birds. The aqueous solution of oat extract was added to the standard diet of the experimental group of geese from the 7th till the 56th day. This interval in the ontogenesis of geese includes periods of physiological stress due to the formation of a contour and juvenile feathers. The effectiveness of the Krebs cycle was evaluated by the activity of its dehydrogenases, antioxidant system was evaluated by the composition of the end products of lipids peroxide oxidation and the activity of antioxidant enzymes. At the same time, the fatty acid composition of lipids as a substrate of biological and peroxide oxidation was determined in these tissues. Coincidentally, the live weight and the formation of the geese coat were controlled.

It was established that oat extract stabilized the redox system of geese during the whole period of the experiment in all studied tissues. From the 28th day, the antioxidant activity of the tissues of liver and myocard of the experimental group of geese was significantly higher. At the end of the experiment, the unsaturation of fatty acids, which is defined as the total equivalent concentration of relatively multiple bonds, increased by 11.7% in the liver, by 7.22% - in the myocardium, due to the increase in the content of polyunsaturated fatty acids, primarily arachidonic (by 29.2% and 21.5% respectively), and in the liver the increase of docosahexaenoic acid was also observed (by 34.2%). The comparative analysis of the state of coat in the investigated groups of geese indicated the significant differences and confirms better results of the geese of the experimental groups. Thus, it is proposed to conduct similar research on wild species of birds, for which the state of feather coat plays a vital role.