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ECOLOGICAL AND BIOCHEMICAL ASPECTS OF RELATIONSHIPS BETWEEN HELMINTHS AND BIRDS OF THE BARENTS SEA

Birds play a special role in the circulation of helminthes in coastal marine ecosystems. For many helminthes birds are the definitive hosts, because intermediate hosts of the parasites are fish and invertebrates – objects of their food. Anthropogenic pressure in the Barents Sea has led to the depletion of traditional food resources of birds, which are forced to move to another food objects. It contributes to the spread of «non-specific parasitism» and finds the reflection of the processes of mutual adaptation of parasite and host.

A goal was to study the effect of intestinal parasites infection on biochemical parameters of birds. Object of research were massive in the southern Barents Sea species: kittiwake *Rissa tridactyla* L., thick murre *Uria lomvia* L. and common guillemot *Uria aalge* Pontop. The activity of lysosomal enzymes and protein content was determined in a liver infected by different groups of helminthes and uninfected birds.

The most significant depressing effect on the activity of the lysosomal apparatus of kittiwakes provided infecting with cestodes Tetrabothriidae. The protein content was decreased in the liver of kittiwakes during infection by all groups of helminthes, but most of all by trematode infestation. Hydrolase activity and protein content of the infected Thick guillemots *U. lomvia* were lower than that of free invasions of individuals. Enzyme level in the liver of the common guillemot *U. aalge* varied in different directions depending on the keys of the parasite. The Hymenolepididae infection caused a decrease in the activity of nucleases and phosphatases, but on the other hand – the increase in glycosidase. Tetrabothriidae influenced RNase reduced, but the activity of other enzymes increased.

Differences in the response of the birds to infection related to their food preferences, defining the nature of the invasion. At the biochemical level, the impact of parasites is manifested inhibition of biosynthesis in the liver of the birds and the activation of destructive processes involving the lysosomes. The direction and amplitude the parameters' changes depend on the type of helminthes, features of ecology and host specificity.

The study was supported by the RF Presidential Programme «Leading Scientific Schools of RF» NSch-3731.2010.4.

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ВЛИЯНИЕ АНТРОПОГЕННО-ИЗМЕНЕННОГО ЛАНДШАФТА НА ОРНИТОФАУНУ В ЧЕШСКОЙ РЕСПУБЛИКЕ

Серая куропатка до XX в. была важным промысловым видом на территории Чехии. Интенсификация земледелия, потеря важных источников питания и мест обитания привели к снижению численности вида. В статье проанализированы эти факторы, повлиявшие на численность популяции, а также меры, принимаемые для ее восстановления. Выпуск птиц должен сопровождаться подготовкой среды их обитания, защитой от хищников, помощью в зимнее время и, безусловно, мониторингом. Основными факторами смертности птиц названы недостаток источников питания в течение всего года и безопасных мест для гнездования и сокрытия от хищников. Ситуация ухудшается из-за недостатка внимания со стороны охотничьих хозяйств. Важно понимать, что подобные факторы не должны помешать выполнению программ по реинтродукции вида в Чехии.

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**INFLUENCE OF LANDSCAPE ANTHROPOGENIC CHANGES ON THE GREY PARTRIDGE
POPULATION IN THE CZECH REPUBLIC. A REVIEW**

The grey partridge used to be a common hunting species in the Czech Republic in the beginning of 20th century. A number of factors have contributed to the dramatic decline in the partridge population, including agricultural intensification, resulting in a loss of important food for young partridges and habitats. Those factors were studied through historical point of view in the Czech Republic, stressing the changes in agricultural landscape. Measures taken to recover the population were studied and analyzed, concluding that those should not consist of only releasing event, but should be done respecting natural selection and appropriate preparation of the environment, predator control, protection in winter and monitoring. The key mortality factors found were poor food supply during the year, the loss of shelters and places for nesting. Those are also supported by a lack of interest in the species by game managers and predator control. It is important to note that the effect among these factors are often aggregated or even multiplied. However, nowadays the interest in reintroduction of the species is growing in the Czech Republic.