ISMS
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II. International Symposium on Multidisciplinary Studies (ISMS)

18-21May 2017, Rome/Italy

(Abstract Book)

II. Uluslararası Multidisipliner Çalışmaları Sempozyumu (ISMS)

18-21 Mayıs 2017, Roma/İtalya

(Özet Kitabı)

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Title	**Trout Farmıng Effects on Antioxidative Defense System in *Gammarus Balcanicus* (Schäferna, 1922)**

Abstract

The freshwater amphipod *Gammarus balcanicus* is one of the most widespread crustacean species in Serbian streams. It usually inhabits highland mountainous streams and brooks (about 600-1000 m a.s.l.), with clear and well-oxygenated waters. *G. balcanicus* shows intolerance to high level of nitrite and phosphate concentration. Since trout farming can lead to increse of these compounds, we have chosen this species as bioindicator on the level of oxidative stress biomarkers. Samples were collected from two upstream localities (L1 and L2) and two downstream localities (L3 and L4). Superoxide dismutase (SOD), catalase (CAT) and glutathione S transferase (GST) activities have been measured. First downstream locality (L3) showed statistically significantly higher SOD and CAT activities in relation to upstream localities (L1 and L2), whereas the GST activity was unchanged. Increased antioxidative enzyme activity registered at the first downstream locality comes as direct consequence of the increase in phosphates and nitrates in the localities down the trout farm, due to the increased concentration of fish feces and the remains of fish food. This proves that antioxidative defense enzymes as biomarkers and *Gammarus balcanicus* as model organism can be considered excellent bioindicators of the river ecosystems' pollution as the result of fish farming.

Key words: oxidative stress, superoxide dismutase, catalase, *Gammarus*, trout farming