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# EVALUATION OF THE SALMONID SENSITIVITY TO THE PATHOGENIC OOMYCETES AT THE EARLY DEVELOPMENT STAGE

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Oomycetes are saprophytic opportunists found in freshwater bodies that can cause diseases in wild and farm-raised salmonid fish all around the world [1]. Oomycetes *Saprolegnia* species cause the majority of cases of saprolegniasis, a disease characterized by immunosuppression, that affects salmonid in the early stages of development [2][3][4]. In countries with large-scale fish farming oomycete infections are mainly a problem during the egg incubation period [5]. It is estimated that saprolegniasis outbreaks are responsible for large-scale fish mortalities up to 50%, which is a major problem for fish welfare and the economic sustainability of fish farming [1][6]. Oomycetes cause oxidative stress resulting in the production of reactive oxygen species (ROS) [7]. To prevent or minimize the production of free radicals, organisms activate the antioxidant defense system which includes enzymes such as catalase (CAT) and metallothioneins (MTs) [4][8].

This study aimed to evaluate responses of oxidative stress biomarkers such as CAT activity and MTs induction in *Salmo trutta fario* exposed to pathogenic oomycetes at an early stage of development. During the experiment, there were no significant changes in catalase (CAT) activity. In contrast, the study found higher MTs induction in *S. trutta fario* embryos exposed to *S. ferax* and decreased MTs levels when exposed to *S. parasitica*. It is worth mentioning, that more than two enzymes play a role in the antioxidant defense system, and additional research should be conducted to better understand the components involved in preventing and regulating oxidative stress in pathogenic oomycetes-infected fishes.

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