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ASSESSMENT OF PATHOGENIC OOMYCETES IMPACT ON Salmosalar L LARVAE USING OXIDATIVE STRESS BIOMARKERS

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Freshwater fish are an important protein source for people in many countries, which is why aquaculture has now become a globally significant industry worldwide [1]. However, intensive aquaculture is related to the proliferation of parasites and other pathogenic organisms, posing a threat to biodiversity and food security worldwide [2]. One of these pathogens is oomycetes. Oomycetes, commonly known as water molds, are fungal-like microorganisms that can be parasitic towards a large number of plant and animal host species [3]. They cause one of the most destructive fish diseases in freshwater ecosystems – saprolegniasis [2]. Saprolegniasis is an infection that can develop at any stage of fish life [4] and is characterized mostly by a white or greyish cotton – wool like tuft found on infected skin, gills, or fish eggs. Due to the primary involvement of the skin in saprolegniasis, the disease is alternatively referred to as dermatomycosis.

Diseased fish in the most severe phase of infestation experience poor osmoregulation, respiratory failure, and, in certain cases, organ failure, which can lead to death [5]. It is critical to note that oomycete infections cause oxidative damage in fish, which contributes directly to disease pathogenesis [6]. Based on other research, *Saprolegnia parasitica* is the most important oomycete affecting freshwater fishes [6]. However, other oomycete species are also responsible for infestations, causing economically significant losses. For instance, *Saprolegnia australis*, acting as a pathogen on embryos and fry of salmonids, could colonize and cause their death [7].

The purpose of this research was to investigate the effects of *Saprolegnia* genus oomycetes on *Salmo salar* L. larvae. To achieve this aim, we evaluated the changes inenzyme glutathione S-trensferases (GST) activity and levels of metallothionein (MTs). GST plays an important role in aquatic organisms protection from peroxidative damage [8]. MTs are metal-binding proteins with the ability to eliminate reactive oxygen species and maintain metal homeostasis in organisms [9]. Based on the results of present experiment, changes in GST activity were not detected. However, significant changes in MTs level were detected in oomycete-treated *S. salar* larvae compared with the control group.

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