

Victimization Metabolomics and Bioinformatics Modifications of Hematology Protein Fertilized Chinook Eggs (*Oncorhynchus Tshawytscha*) from Seawater and Freshwater Farm

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Introduction

Chinook salmon (*Oncorhynchus tshawytscha*) is a highly valued species in aquaculture and wild fisheries. The transition from freshwater to seawater environments during the life cycle of farmed salmon leads to significant physiological and metabolic changes. These changes are often associated with stress, which can affect the quality of the fish and the safety of the products. Hematology and metabolomics are powerful tools for studying these changes. Hematology provides information about the immune system and overall health, while metabolomics offers a comprehensive view of the metabolic state. This study aims to investigate the victimization (metabolic and hematology) of fertilized Chinook eggs from seawater and freshwater farms. The results show significant differences in hematology and metabolomics between the two groups. The seawater group exhibited higher levels of certain hematology parameters, indicating a more active immune system. Metabolomics analysis revealed a complex pattern of metabolic changes, including alterations in amino acid metabolism, energy metabolism, and lipid metabolism. These findings suggest that the transition from freshwater to seawater environments leads to a state of metabolic and hematology stress in Chinook salmon. The results of this study can be used to improve the health and welfare of farmed salmon and to ensure the safety of the products.

References

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