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ORIGINAL PAPERS

FOOD AVAILABILITY ON INFLUENCE MUSSEL *Mytilus galloprovincialis* (Lamarck, 1819) ON PHYSIOLOGICAL AND BIOCHEMICAL STATUS

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Abstract *Phytoplankton, as the primary food source for suspension-feeding bivalves, can significantly impact the growth and survival of bivalves. To investigate the influence of food availability on the condition index and biochemical composition of mussels Mytilus galloprovincialis from the Romanian Black Sea coast, phytoplankton and mussels samples were collected from four sites between November 2017 and November 2018. The phytoplankton quality and quantity varied across locations and seasons. The ports had the highest diversity and abundance of phytoplankton, while the area with low trophic conditions had the lowest. The most dominant phytoplankton groups observed were diatoms and dinoflagellates. The condition index values were higher in sites with greater food availability, reaching the peak in spring. The lipid and carbohydrate content peaked in spring when the food availability was high. The protein content was higher in winter and autumn. Condition index was positively correlated with phytoplankton abundance and biomass ($p < 0.05$). Several significant correlations were found between the biological parameters of mussels, such as proteins, lipids, carbohydrates, tissue dry weight, moisture, ash free dry weight, and ash. In conclusion, the results indicated that higher food availability and increasing seawater temperatures led to greater condition index and reserve accumulation, primarily in the form of proteins, carbohydrates, and lipids, providing mussels with enough energy to withstand stressful conditions.*

Keywords: mussels, phytoplankton, condition index, biochemical composition, Romanian Black Sea coast.

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