

BACTERIOFLORA OF DIGESTIVE TRACT OF FISHES *IN VITRO*

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Summary. Microbiological method was used to assess peculiarities of abundance of autochthonous and petroleum hydrocarbon-degrading bacteria (HDB) in the digestive tract of fish of different trophic groups and the proportion of HDB in the total heterotrophic bacteria (THB). The number and dynamics of petroleum hydrocarbon-degrading bacteria in the digestive tract of fish was registered in different seasons of the year. Regularities of abundance of petroleum hydrocarbon-degrading bacteria in freshwater and marine fish species were pointed out. The bacteriocenoses of the digestive tract of investigated fish were found to be dominated by the total heterotrophic bacteria. The variability of abundance and dynamics of autochthonous and allochthonous bacterioflora of the digestive tract of fish from the Baltic Sea and the Curonian Lagoon was due to fish species, nutrition habits and intensity, and season of the year. The lowest amount of bacteria of investigated functional groups was observed in early spring, and the highest in summer, during intensive fish feeding. The total heterotrophic bacteria in bacteriocenoses of the digestive tract of river perch and gudgeon from the Curonian Lagoon varied from 10^{-7} to 10^{-8} g⁻¹ of intestine content. A similar tendency was observed in fish from the Baltic Sea; however, summer counts of THB in fish from the sea were considerably lower than in fish from the Curonian Lagoon. The greatest part of HDB in THB was observed in summer in the digestive tract of small sandeel (30.95%), European flounder (30.08%) and bullrout (28.33%) from the Baltic Sea. A respective spring proportion was 11.57% in European flounder, 9.88% in sandeel, and 9.24% in bullrout. In autumn this parameter was slightly higher than in spring in the digestive tract of European flounder (18.5%) and the least in bullrout (0.36%). From the proportion of HDB in THB we can assume that the littoral zone of the Baltic Sea near Būtingė is considerably more contaminated with oil than the Curonian Lagoon. The average values of abundance of the total coliform bacteria in the bacteriocenosis of the digestive tract of perch and gudgeon caught in the Curonian Lagoon varied, with the highest values in summer and autumn, whereas in the Baltic Sea the greatest average abundance of total coliforming bacteria (TCFB) was observed in the digestive tract of bullrout in spring and summer.

Keywords: hydrocarbon-degrading bacteria, petroleum, digestive tract, fish.