Yeasts are cosmopolitan organisms, found and circulating throughout the biosphere, including the ontosphere of animals and humans. All vertebrates, including fish, can be inhabited by microfungi of various trophic and taxonomic status. Fish are rarely described as carriers of potential zoo- and anthropogenic ascomycetous and basidiomycetous yeasts. Information on the mycobiota in fish, especially those living in salty environments, also is not extensive. Most studies concern the occurrence of yeasts in sick individuals or in aquaculture. Therefore, this study aimed to assess the diversity of yeast species colonizing various ontocenoses of healthy individuals of Baltic herring (*Clupea harengus membras* L.) caught for consumption, with emphasis on identification methods and biochemical properties of isolated microfungi.

The research material consisted of yeasts isolated from the mouth, gills, liver, and intestines of 182 herring individuals caught for consumption. Swabs were taken from animals in December 2016 and 2019 and between April and May 2018.

Yeast species identification was performed using classical (analysis of morphological and physiological features) and molecular methods in accordance with standard procedures used in mycological laboratories. The ability of yeast isolates to grow at 37°C was also tested to identify potential anthropopathogens. In addition, for one selected isolate from each species, API 20C AUX tests (identification of yeast species based on the capacity of fungi to absorb carbon from various sources), API ZYM tests (determination of the enzymatic activity of yeasts), and ATB FUNGUS 3 tests (sensitivity test to antifungal drugs), were performed.

During the research, a total of 260 yeast isolates were obtained, belonging to 22 species from 12 genera. Ascomycetous yeasts constituted the vast majority in comparison with basidiomycetous yeasts. The most remarkable species diversity was noted in the mouth and gills, less often yeast colonized the intestines and liver. In all the studied ontocenoses, there were: *Apiotrichum domesticum, Candida parapsilosis, Debaryomyces hansenii, Pichia kudriavzevii, Rhodotorula mucilaginosa* and *Yarrowia lipolytica.* Among the isolated yeasts, 1 species was recognized as generally safe (GRAS – *Generally Regardes As Safe*), and 10 species belonging to the 1st BioSafety group and 5 to BSL-2 (BSL – *BioSafety Level*), respectively, were recorded. Using the API 20C AUX fungi identification tests, only 3 of the 22 tested isolates were correctly identified as species. Yeast showed poor fermentation capacity of carbohydrates, mainly they were able to perform enzymatic conversion of glucose. Glucose was also the most frequently assimilated sugar by yeast; maltose, sucrose, and galactose less regularly. Most of the yeasts showed the ability to grow at elevated ambient temperatures. All of the selected fungal isolates were characterized by the enzymatic activity of naphthol phosphohydrolase AS-BI, acid phosphatase, leucine arylamidase, alkaline phosphatase, esterase, esterase lipase, and valine arylamidase. The highest hydrolytic activity was observed in *C. albicans* and *A. montevideense*. Yeasts showed the greatest resistance to itraconazole, less frequently to amphotericin B and fluconazole. They were most sensitive to voriconazole and 5-flucytosine.

The obtained results indicate the ontocenoses of the Baltic herring are inhabited by a broad taxonomic spectrum of yeasts with various physiological and biochemical features.To identify microfungi isolated from herring, classical and molecular methods should complement each other. Commercial biochemical series show a low degree of correct determination of the species affiliation of yeasts isolated from salty environments and therefore seem useless. Most of the obtained fungal isolates were recorded from marine reservoirs. Microfungi in the Baltic herring ontocoenoses are part of the commensal

microbiota, but they can also be potential zoo- and anthropopathogens. This is evidenced, among others, by the ability to grow at elevated ambient temperatures and enzymatic activity. Due to the frequency of yeast occurrence in herring and their living environment and herring products, their presence should be constantly monitored in terms of mycology.