EVALUATION OF BACTERIAL MICROFLORA OF EUROPEAN EEL (*ANGUILLA ANGUILLA*) SKIN SAMPLES FROM LAKES IN LATVIA

Margarita Terentjeva[1], Inga Eizenberga[1], Olga Valciņa[2], Aleksandr Novoslavskij[3], Jevgēnija Ošmjana[2], Aivars Bērziņš[1,2]
[1] Faculty of Veterinary Medicine Latvia University of Agriculture, Latvia
[2] Institute of Food Safety, Animal Health and Environment „BIOR", Latvia
3 Lithuanian University of Health Sciences/Veterinary Academy, Lithuania
Margarita.Terentjeva@llu.lv

INTRODUCTION. Microflora of surfaces and skin of fish are continuously affected by aquatic environment including bacteria present in water, sediment and contamination from polluted wastewater. Above mentioned observations reveal that fish may serve as the indicator of pollution of aquatic environment, because the changes in microflora of surrounding environment of fish have an impact on number and composition of bacterial microflora of fish. Limited studies on bacterial contamination and the presence of pathogens in freshwater fish are conducted previously. Therefore the aim of the present study was to detect the total bacterial count (TBC) and *Enterobacteriaceae* on eel skin as indicator of hygienic status of environment and the presence of *Salmonella* spp. as possible zoonotic pathogenic agent of intestinal origin.

MATERIALS AND METHODS. For the detection of total bacterial contamination of eel the surface swabs were collected. Altogether 31 samples of eel skin were collected between April-May in 2014 from eels from three different lakes in Latvia (Alūksnes, Usmas and Sīvers). Skin samples were taken from live eel skin by processing a 10x10cm^2 of skin with abrasive sponge. Skin samples were plated onto PCA and VRBA agar with subsequent incubation at 30°C and 37°C according to the ISO 6887 and ISO 21528 methods. For the detection of *Salmonella* the ISO 6579 method was applied.

RESULTS. Depending on lake TBC of eel skin samples was varying from 5 up to 85000 cfu/cm^2, there the lowest average number of 36 cfu/cm^2 was identified on eel skin originated from Alūksnes lake, and the highest average - 12750 cfu/cm^2 in samples from Sīvers lake. Number of *Enterobacteriaceae* was varying from 0 up to 198 cfu/cm^2, there less than one cfu/cm^2 was identified in samples from Alūksnes and Usmas lakes, and the highest average number - 36 cfu/cm^2 in samples of Sīvers lake. All tested eel skin samples were *Salmonella* negative.

CONCLUSIONS. Eel skin samples did not contain excessive amount of bacterial microflora indicating the good hygienic status of the lake from there the eels were originated.
Differences detected in the contamination of eel skin samples with TBC and *Enterobacteriaceae* showing a possible link between the area of origin of eel and bacterial contamination of eel skin.

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