MACROSCOPIC EVALUATION OF THE STATE OF HEALTH OF THE RAINBOW TROUT (ONCORHYNCHUS MYKISS WALBAUM, 1792) FROM TWO BREEDING TECHNOLOGIES IN POLAND


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INTRODUCTION
Macroscopic morphological analysis is the tool used in order to evaluate fish health state. It also enables making fast and easy comparison of the health state of the fish obtained from different breeding technologies.

MATERIAL AND METHODS
In 2011 the macroscopic evaluation of 480 rainbow trout (Oncorhynchus mykiss Walbaum, 1792) was conducted. There were 240 fish of 350 g – 500 g body mass (A) and 240 fish of 501 g – 850 g b.m. (B). The fish was caught in May and June (240 fish) and in September and November (240 fish) in three fishing farms with the single water use, which means with open breeding objects (OBO): 1 - 3 and from three fishing farms of high circulation level with the use of objects with recirculation aquaculture system (RAS): 4 - 6. The fish analyzed were divided into the groups = 20. Each time macroscopic analysis of the external pattern (skin with scales, eyes, gills and fins) as well as internal analysis of the organs and tissues were conducted.

Table 1. Experiment layout

<table>
<thead>
<tr>
<th>Type of technology breeding</th>
<th>Type of technology breeding</th>
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<tbody>
<tr>
<td>OBO – open system</td>
<td>RAS – recirculation system</td>
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<tr>
<td>A1-3, B1-3 – fish farm</td>
<td>A4-6, B4-6 – fish farm</td>
</tr>
<tr>
<td>A1 : 350 – 500 g</td>
<td>A2 : 350 – 500 g</td>
</tr>
<tr>
<td>B1 : 501 – 800 g</td>
<td>B2 : 501 – 800 g</td>
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RESULTS
There were no pathognomic lesions indicating any disease in the macroscopic analysis in the trout. The gills were pale in the fish from one farm (A5 – 9/20, B5 – 2/20). Necrotic foci were also found there (A5 – 4/20, B5 – 2/20). In a few cases (A2 – 3, B2 – 1, A3 and B3 – 1) gills hyperemia was noted. This kind of circulation disturbance was also found in several cases in the liver and spleen and in a few cases in kidneys. They were more frequent in the trout from the B group compared to the A group. There was also steatosis simplex noted in several trout. This lesion was more frequent in fish from the B group. Parenchymatous degeneration was observed sporadically.
A1: Fig. 1, 5, 7, 9, 10; B1: 2; A2: 3; B2: 4, 6, 8.

SUMMARIZED
Statistical analyses carried out according to Friedman’s test (nonparametric variance analysis) showed that macroscopic lesions noted in the trout examined were not significant nor for the breeding technologies (OBO and RAS) neither for the fish from the particular fishing farm (1–6). But statistically significant lesions were more frequent in fish of the B group compared to the rainbow trout of lower b.m. (A).

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