TECHNOLOGY OF RAINBOW TROUT (ONCORHYNCHUS MYKISS) BREEDING AND PATHOMORPHOLOGICAL PATTERN OF THE LIVER

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INTRODUCTION

Along with the quick increase of rainbow trout (Oncorhynchus mykiss) production technological progress in intensive exploitation of the accessible water through its aerifying, oxidizing and recirculation occurred. Council Regulation (EC) No 710/2009 expressed request for evaluation of the influence of water recirculation on trout organism. The aim of the study was to assess the influence of technology of trout breeding on morphologic pattern of hepatopancreas.

MATERIAL AND METHODS

The study has been carried on late autumn 2010 on 240 rainbow trout from 6 farms (40 fish each). Three farms bred fishes extensively (single water use i.e. open breeding farms: A-C) and 3 applied recirculation (fish farms with closed water system: D-F). Macroscopic, histological and ultrastructural examination has been performed. Samples of hepatopancreas was fixed in 5 % neutral formalin, stained with haematoxylin and eosin and along the PAS method after McManus. The samples of the liver for ultrastructural examination were taken from 5 trouts from each groups. The material was fixed in 2.5 % glutaraldehyde in 0.2 mol/l phosphate buffer of pH 7.4, embedded in Epon 812. The ultrathin sections were contrasted with uranyl acetate and lead citrate. Analysis was conducted using the Opton 900 PC TEM (Germany).

RESULTS

Congestion of hepatopancreas, steatosis or spleen enlargement were found macroscopically in single cases. Some cases of slight regressive lesions and perturbations of circulatory system, also other changes were observed; in these cases steatosis simplex was found often during ultrastructural examination. Other changes were rarely found submicroscopically. Slightly higher intensity of the observed lesions and sometimes lymphoid cells infiltration were stated in some groups of fish. With electron microscope slight changes in mitochondria were found most often; steatosis simplex was observed in less degree. A-C: Fig. 1-3, 7, 8; D-F: Fig. 4-6, 9, 10.

CONCLUSION

Considering the intensity of the morphological lesions the assessed technologies influenced the pattern of rainbow trout hepatopancreas in a similar way.

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