INFLUENCE OF THE TYPE OF FARMING TECHNOLOGIES OF RAINBOW TROUT (ONCORHYNCHUS MYKISS, WALBAUM 1792) ON THE MICROSCOPIC PATTERN OF TRUNK KIDNEY IN THIS FISH


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INTRODUCTION

Microscopic 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. The effect of two technologies of rainbow trout farming, open system (OS) with a single flow of water and recirculation system (RS) with closed water system, on microscopic pattern of trunk kidney in rainbow trout was evaluated.

MATERIAL AND METHODS

The studies of the rainbow trout were conducted for 3 years (2010 – 2012), twice a year, in spring and autumn. Investigations has been carried out on 960 rainbow trout from 6 farms (40 fish from each). Three farms bred fish extensively using the free-flow water system (OS): A - C and 3 farms bred fish intensively using water recirculation (RS): D - F. Trout were divided into 2 groups: 350 - 500 g (S) – n = 20 and 501 - 850 g (B) – n = 20, fed the same feed. Trunk kidney sections were fixed in 5% neutralized formalin. Paraffin sections were stained with hematoxylin and eosin.

RESULTS

Very few retrogressive lesions included degeneration cells of renal tubules were seen most often. The necrosis affecting very restricted areas was seen only sporadically. The congestion was observed much more frequently and extravasations were present less numerous. More often there were melanomacrophages infiltrations observed. They were visible as vast gatherings forming centers located most frequently in the vicinity of the blood vessels. Usually they were seen as point-like petechiae or small ecchymoses. Sporadically the lymphoid cells infiltration could be seen. A - C: Fig. 1 - 5; D - F: Fig. 6 - 10.

CONCLUSION

Microscopic lesions were found in the trunk kidney more often in rainbow trout farming in RS. They were more heavily marked specifically in relation to the degree of the extent of the changes and significantly more frequent in the group B. They also showed greater intensity in fish caught in the autumn.

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