

The quality of water as important section of trout fish farming development in Middle Volga region

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Abstract

Aquaculture, which means reproduction and farming of valuable aquatic organisms – is one of the most promising agriculture sectors of Tatarstan. The creation of integrated innovative biotechnological complexes could allow not only recover the qualitative conditions of Republic’s aquatic resources, but could initiate a creation of a lot of fish farms. The development of private fish farms in line with the objectives of both regional and Federal level and allows to solve problems of ensuring the country's food security and import substitution of food products.

Rainbow trout and its breeds is among the most valuable prospective objects of fish farming. Russia recorded four native species of rainbow trout: Adler, rofor, rostal and Adler amber; Russia’s state register contains three more imported breeds: Kamloops, Steelhead salmon and trout of the Donaldson. Despite the growth of trout farming in the country, about 90% salmon consuming in Russia is imported.

The quality of the water is the most important contributing to the development factor aquatic biological technologies. From the standpoint of the development of trout farming, in this case, the physicochemical features of Volga waters were considered. The analysis of the Volga waters chemical characteristics was carried out, according to different authors. Also, the attention was paid to the quality of water of small rivers of the Kama basin.

The analysis revealed that the water not meets the required water quality for trout ponds fully. Such characteristics as pH, absence of hydrogen sulphide are meetings the requirements; such as permanganate and dichromate oxidability, BOD₅, ammonium ion, nitrates and nitrites, the oxygen content marked as exceeding the regulatory values.

The study showed that for breeding and rearing of rainbow trout in the region of the Middle Volga region in the use of the waters of the Volga river and the waters of small rivers of the Kama basin successfully, the water preparation should be used. To improve the condition of surface waters of Tatarstan, it requires to reduce the input of organic substances and nutrients.

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