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Prevalence, Characteristics and Antimicrobial Resistance of *Aeromonas Spp.* Isolated from Rainbow Trout (*Oncorhynchus Mykiss*)

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ABSTRACT

Rainbow trout is a typical freshwater fish of commercial value in Armenia. A number of fish farms in the Massis region suffered from bacterial infection caused by *Aeromonas* which caused mass mortality of more than 70% of fry on average, in 2024 this figure reached 84%. In the presented study, the strains, causative agents of the disease were isolated, their identification was carried out by conventional and molecular diagnostics methods, their virulence and resistance to antibiotics were studied. 25 diseased rainbow trout samples from different private fish farms were randomly selected. Isolation of *Aeromonas* species was carried out in accordance with the methods of Rahman et al. (2007), using highly selective nutrient media. Strains of the genus *Aeromonas* were characterized phenotypically using the rapid identification systems API 25NE (BMX-20050). The enzymatic activity of *A. veronii* strains was determined as an indicator of their phenotypic virulence. The sensitivity of *A. veronii* strains was determined relative to 15 antibiotics using the well-diffusion method (CLSI 2011). Identification of *Aeromonas* strains was carried out by 16S rRNA sequencing. Phenotypic and biochemical characteristics of most isolated pathogenic strains causing ulcerative syndrome and hemorrhagic septicemia in freshwater rainbow trout showed their similarity to the species *A. veronii.* Genetic analysis of the bacterial conservative region of 16S rRNA also confirmed that 8 virulent strains out of 10 isolated ones belong to *A. veronii*, 2 strains – to *A. medi*. High enzymatic activity in more than 70% of *A.veronii* confirms their high degree of virulence. The index of multiple drug resistance (MDR) of *A.veronii* relative to the tested antibiotics exceeds 0.2. The presence in the environment of virulent *A.veronii* strains resistant to a wide range of antibiotics is a potential risk for fish farms.

Keywords: *A.veronii,* rainbow trout, virulent

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