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THE INFLUENCE OF ABIOTIC FACTORS ON THE MODIFICATION VARIABILITY OF MUSSELS OF THE AZOV SEA

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One of the most important properties of a living organism is variability, which is a consequence of the interaction of organisms with the environment. It provides all the variety of existing life forms. All living organisms that belong to the same species (even with a completely identical genotype), based on the general plan of the structure, the nature of reproduction, the course of metabolic processes, have some differences among themselves, which are caused by variability. Variability is the property of organisms to exist in different forms, to change. Variability is divided into genotypic (hereditary) and modification (non-hereditary). Hereditary variability is associated with changes in genetic material. Modification variability is an evolutionarily established adaptive reaction of the organism to changes in the external environment. This type of variability is distinguished by three main features: the massive nature of the changes that occur in the majority of individuals in the population; adequacy of changes to environmental influences; short duration of most modifications. The range of modification variability of the organism is fixed in the genotype and is called the reaction norm [1; 7].

Due to the fact that modification variability is not associated with a change in the genotype of an organism, and phenotypic differences are easier to study than genotypic changes, this form of variability is more convenient for research. One of the central modern problems of genetics is the clarification of the relative role of genotype and environmental conditions in the formation of an organism's phenotype [3]. Therefore, this work is relevant and timely. The study of modification variability on the example of molluscs is very convenient. They clearly show differences in phenotype (many researchers have noted the variability of shell size in mollusk mussel [2; 5; 7]), so

measuring the parameters of the external structure of their shells is not time-consuming.

Therefore, during the study of the variation of shell parameters in the mussel mollusc from the Sea of Azov (the city of Henichesk), it was established that: the length of the shell varies from 3.9 to 6.7 cm, and the modification variability of this feature is characterized by the following indicators: X = 5, 1 ± 0.12 cm, Q = 0.6 cm, V = 11.5%; the width of the shell varies from 2.2 to 4.0 cm, and the modification variability of this feature is characterized by the following indicators: X = 2.8 ± 0.06 cm, Q = 0.3 cm, V = 10.7%; the height of the shell varies from 0.6 to 1.4 cm, and the modification variability of this feature is characterized by the following indicators: X = 0.79 ± 0.04 cm, Q = 0.2 cm, V = 20%.

When studying the variation of shell parameters in the mussel mollusk from the Sea of Azov (Prymorsk), it was found that: the length of the shell varies from 4.1 to 7.1 cm, and the modification variability of this feature is characterized by the following indicators: X = 5.7 ± 0.12 cm, Q = 0.6 cm, V = 10.5%; the width of the shell varies from 2.4 to 3.8 cm, and the modification variability of this feature is characterized by the following indicators: X = 3.1 ± 0.06 cm, Q = 0.3 cm, V = 9.7%; the height of the shell varies from 0.7 to 1.5 cm, and the modification variability of this feature is characterized by the following indicators: X = 1.07 ± 0.04 cm, Q = 0.2 cm, V = 16.7%.

It is outlined that the variability of the parameters of the shell of the mollusk in the Sea of Azov lies within: in length from 3.9 to 7.1 cm; in width - from 2.2 to 4.0; in height - from 0.6 to 1.5 cm. The reliability coefficient of the difference between the arithmetic means of the two samples was: in length 7.5; in width - 3.01; by height - 10. That is, all the obtained indicators of the reliability coefficient are greater than the Student's criterion.

It was determined that the modification variability of the shell parameters of the mollusc mussel in the Sea of Azov depends on the influence of the following abiotic factors: salinity, temperature, illumination. Trophic conditions, features of the gene pool, specificity of the substrate (sandy, muddy bottom), anthropogenic transformation of biotopes also cause changes in the morphometric parameters of mussels [5; 6; 9].

It was established that indicators of modification variability of mussels living in the coastal zone of the Sea of Azov in the territories of the recreational and tourist complex can act as indicators of the ecological state of marine biotopes. Mussels with thickened shells predominated in areas with increased anthropogenic load.

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