Morphometric features and selected vessels of the heart of American mink (Neovison vison) in standard and mutation colour varieties.

The aim of the study was to determine if there are differences between the morphological traits and the characteristics of the mink heart vessels of the colorful and standard mutant variety? The goal was to be achieved by: determining the shape of the heart, the value of metric features of selected coronary veins, the frequency of their occurrence, and the morphometric characteristics of the male and female heart, investigating the interrelations between these coronary veins and morphometric traits. The research was carried out on hearts obtained from randomly selected 344 males and 416 female mink and mutant color varieties, 7 months old. The values of the following morphological features of the heart were estimated: mass, height, width, depth, circumference and weight of the lungs. A photographic image of each heart was recorded. The MultiScan program measured heart veins: the internal diameter and length of the coronary sinus, the size of the great vein, the length of the great vein, left posterior vein, medium vein and small heart vein and the number of branches forming the large vein and veins of the left left ventricle and the anterior veins . In addition, the mass and thickness of the left ventricle and right ventricle walls were measured. The shape of the heart has been determined. Two sources of variation were adopted: gender and color variation. It was found that over 70% of the American mink population, used in the study, was characterized by hearts similar in shape to the cone, with the base turned upside down. The remaining ones, are geometrically similar to the shape of an oval or sphere. The male hearts of the mutation strain, compared to the males of the colorful standard variety, were characterized by significantly higher values of such features as: mass, height and depth, mass of the left ventricular wall and the right ventricular wall. The hearts of the females of the colored mutation strain were significantly superior to the hearts of the females of the standard color only with the mass and depth of the heart. There was no dominant relationship between venous vessels in any of the color varieties studied, and the correlation between traits was weak. In terms of morphological features of the male and female mink heart, the standard variation showed a significantly higher correlation of analogous traits compared to the mutant hearts of the mutant variety. There was a significant effect of sex and color variation on the incidence of posterior veins in the left ventricle and the veins of the anterior heart of the American mink.
The analysis of morphological traits and vascular venous traits showed differences between the mink hearts of mutation and standard variations, but there are no unambiguous grounds for stating that these differences could be considered as the basis for formulating a thesis about the effect of mutation on the characteristics of such an organ as the heart.
Keywords: Domestication of Animals, mutation, American Mink, Heart biometry, coronary veins