

CHANGES IN THE BOVINE THYROID GLAND AND THEIR EXPECTED AFTER-EFFECTS DURING ONTO- AND PHYLOGENESIS CAUSED BY RADIATION AFTER CHERNOBYL NUCLEAR POWER PLANT ACCIDENT

Maliev V., Averin V., Cigvincev P., Michalusev V., Bižokas V., Naumcik A., Achremenko V., Popov D.

Summary. The investigation was carried out in 1986-1993. Two test groups of Black-and-white cattle were stationed in a 30 km zone of the emission of radioactive nuclides. Several immunologic and biochemical parameters of peripheral blood plasma and central lymphoid system were investigated.

We found that the degree of thyroid gland changes and further health state during onto - and phylogenesis depends on the radiation dose on the thyroid gland and the whole body, the exposition as well as the type of animal housing before and after the accident.

During the first period (5 month after the accident) changes of various intensity (severe to mild) were diagnosed. The effect of Iodine ^{131}I on thyroid gland was 180-280 GY. Calves born during this period had similar alterations to their parents affected by radioactive Iodine.

Changes in the health state of survived animals during the following (1990-1994 years) period can be described as disintegration of hypophyseal-hypothalamic-thyroid system, depression of adaptation-compensational resources and formation of secondary immune deficiencies. Basically these changes did not have any effect on reproduction. Experimental cows gave birth to two generation of offsprings. However labile protein (15 kDa) was discovered in both blood plasma and lymph of these calves. This protein was assigned to the serum albumin fraction.

Keywords: thyroid gland, radiation, alterations.