

Investigation on the Blood Differential Formula in *Rana ridibunda* (Amphibia: Anura) from the Area of the Maritsa – Iztok 1 Steam Power Plant

Zhivko M. Zhelev

University of Plovdiv “Paisii Hilendarski”, Faculty of Biology, Department of Human Anatomy and Physiology, 24 Tsar Assen St., 4000 Plovdiv, Bulgaria, e-mail: zhivko_m@pu.acad.bg

Abstract: This is a comparative study of the leucogram of two populations of *Rana ridibunda*: one in polluted industrial area, in proximity to the Maritsa – Iztok - 1 Steam Power Plant, and another in an ecologically clean area, located to the south of the town of Harmanli. The indicators of the “white blood” were traced in spring and in autumn. The plasmatic cells of the animals from the polluted area significantly increased, most likely as a specific immune response to the antigens derived from the toxic environment. The monocytes in the animals from the polluted area were also above the normal levels, while the basophile cells were reduced. These changes could be explained as increased phagocytosis of products of tissue decomposition, consequence of the presence of environmental toxins, and could be regarded as a protective adaptive response to the hazardous environment.

Key words: Leucogram, *Rana ridibunda*, industrial pollution, adaptation, South Bulgaria