



Adaptogen's properties of peat preparation for rats after prenatal stress

E. A. Mikhaylenko and L. M. Stepchenko

Dnipropetrovsk State Agrarian University, Ukraine, stepchenko@rambler.ru

The mechanism of adaptive action of peat preparations needs further understanding. Therefore, the research studied of the effects of the peat "Hydrohumate", on the adaptation processes of young rats, born from mothers who received this preparation together with a lengthy time psycho-emotional stress (swimming). The test measured selected activity of proteolytic lysosomal cathepsin L in the spleen, heart and liver tissues, and in the grey matter of the large hemispheres of the cerebrum and cerebellum. The amount of cathepsin L activity was determined in 15- and 30-day-old rats with azocasein as substrate.

The experiment established that rats, born from stressed mothers that drank plain water during stress had less body mass and altered organ indexes, including the adrenal gland index, compared to rats born from mothers who drank water with the peat preparation added.

The change of cathepsin L activity in offspring of treated rats compared to controls demonstrates that structural adaptations occurred, affecting a perceptible and labile system such as the activity of lysosomal enzymes. Discussion will include the effect of humic preparations added to water on rats in the adaptive mechanisms of offspring after prenatal stress.