ACTA UNIVERSITATIS LODZIENSIS
FOLIA BIOCHIMICA ET BIOPHYSICA 5, 1986

K. Barabás, G. Berencsi, B. Matkovics, L. Szabó

EFFECTS OF GRAMOXONE ON THE PEROXIDE METABOLISM ENZYMES IN ANIMALS WITH VARIABLE BODY TEMPERATURES

Toxity of the herbicide Gramoxone containing the active ingredient paraquat for variable body temperatures (fish and frog). Toxic effect of the herbicide was correlated with the activity of the peroxide metabolism enzymes and the level of lipid peroxidation.

For a number of years we have been carrying out toxicological studies on the herbicide Gramoxone, which contains the active ingredient paraquat. In our present work we selected lower-order organisms, animals with variable body temperatures (fish and frog), as the subjects of our experiments.

Work on cold-blooded animals gives a possibility to follow the toxic effect as a function of the external temperature change.

After the administration of various concentrations (LD_{50} and LD_{100}) of Gramoxone, measurements were made at lower (4°C) and higher (20°C) temperatures on the activities of the peroxide metabolism enzymes participating in the detoxication process (SOD, C-ase, GSH-ase) and on the changes in the lipid peroxidation.

In both fish and frog, the direction of enzyme activity variations differs from that in mammals.

The course of poisoning effect is also influenced by the temperature.

Our results may contribute to a more exact understanding of the mechanism of the toxic effect.

Institute of Hygiene and Epidemiology
University Medical School of Szeged
Biological Isotope Laboratory
Institute of Biochemistry
József Attila University
Szeged, Hungary

K. Barabás, G. Berencsi, B. Matkovics, L. Szabó

WPŁYW GRAMOKSONU NA ENZYMY METABOLIZMU NADTLENKÓW U ZWIERZĄT O RÓŻNYCH TEMPERATURACH CIAŁA

Badano toksyczność herbicydu Gramoxone, zawierającego parakwat jako składnik aktywny, na zwierzęta zmiennocieplne (rybę i żabę) w różnych temperaturach. Toksyczny efekt herbicydu korelowano z aktywnością enzymów metabolizmu nadtlenków i poziomem peroksydacji lipidów.