

TOXICITY OF *BUPLEURUM AUREUM* EXTRACTS IN *DROSOPHILA MELANOGASTER* MEIG. STUDY

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Introduction. A fruit fly *Drosophila melanogaster* Meig. is a classical genetic research object, which is approved by WHO for pharmacological research. It can be useful in determining toxicity, influence on reproduction and mutagenic effects.

Aim. The aim of the research was to assess toxicity of different *Bupleurum aureum* extracts.

Materials and methods. An outbred wild type strain *Conton-S* (*C-S*) was obtained from the collection of the Genetics and Cytology Department of Kharkiv National University named after V.N. Karazin. Flies were grown on standard sugar-yeast medium at 24 ± 0.5 °C in an incubator. *Bupleurum aureum* 50% and 70% alcoholic extracts were added to the culture medium in which *Drosophila* larvae develop at concentrations 10^{-3} , 10^{-2} , 10^{-1} , 1 and 10 mg/mL.

Results and discussion. One of the most important features that determine the fitness of organisms is the overall performance, i.e. the number of their adult offspring. Its components are parent fertility and offspring vitality at embryonic and postembryonic stages of development. Our data suggest that the magnitude of an overall performance indicator change in *Drosophila* depends on the type of extraction and concentration of the *Bupleurum aureum* extract in culture medium. Thus, it was shown that all concentrations of the *Bupleurum aureum* 70% alcoholic extract under study and its aqueous extract had no significant toxic effect and did not yield a significant impact on adult *Drosophila*. Interesting data was shown as to the effect of the *Bupleurum aureum* 50% alcoholic extract on the overall performance of *Drosophila*. All concentrations under study did not toxic effect, but a pronounced stimulatory effect was observed at concentrations 10^{-3} and 10^{-1} mg/mL. The manifestation of this effect was increasing in the overall productivity of *Drosophila* by 23.67% and 59.22%, respectively, compared to control.

Conclusions. Thus, *Drosophila* cultivation in a medium with the *Bupleurum aureum* 70% alcoholic extract and its aqueous extract in concentrations of 10^{-3} , 10^{-2} , 10^{-1} , 1 and 10 mg/mL caused no significant reduction in the overall performance of *Drosophila* and had a pronounced toxic effect. *Drosophila* cultivation in a medium with the *Bupleurum aureum* 50% alcoholic extract did not result in toxic effects within all concentrations under study (10^{-3} , 10^{-2} , 10^{-1} , 1, 10, 50 to 100 mg/mL), and the concentrations of 10^{-3} mg/mL and 10^{-1} mg/mL demonstrated a pronounced stimulatory effect of the extract.