

УДК 612.08

**EFFECTS OF CHRONIC LOW DOSE CHLORPYRIFOS EXPOSURE OF FEMALE RATS
ON BEHAVIORAL PARAMETERS OF THEIR OFFSPRING**

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Chlorpyrifos (CPF) ($C_9H_{11}C_3NO_3PS$) is an organophosphate pesticide. The main mechanism of its toxicity is acetylcholine esterase inhibition, thus causing acetylcholine overload, over-excitation of cholinergic neurons, and finally, severe neurotoxic effects. It is reported that chronic low dose CPF exposure can cause cognitive and behavioral abnormalities in poisoned organisms and even in their offspring. Therefore, the aim of our work was to study behavioral parameters of rats whose mothers were chronically exposed to low doses of CPF before pregnancy.

We formed 5 groups of 3 female rats each. Rats of 1st, 2nd and 3rd experimental groups were previously exposed to 5, 10 and 15 mg/kg CPF (in vegetable oil), respectively, via oral probe. Females of the 4th group were exposed to 30 mg/kg CPF at gestational day 7, via oral probe. Rats of the control group were intact.

We weighed and measured the pups at PND 2, 7, 14 and 21, to assess weight gain, and Lee and Quetelet body mass indexes. Mature rats' behavioral parameters were studied with behavioral tests: Open Field, Extrapolation Deprivation, and Dark/Light Box.

The temp of body weight gain was higher in the 3rd experimental group, but both indexes were significantly lower in the experimental groups, as compared to control. Also, the survival ratio of the offspring was the highest in control group (62 %), and the lowest in the 3rd experimental group (40 %). This shows some development alterations in the offspring of exposed rats.

In behavioral tests, experimental animals showed an increase in motor activity and agitation. The most prominent and statistically significant changes (as compared to control) were found in the 3rd experimental group. These rats showed higher horizontal and vertical activity and lower amount of defecation and grooming in the Open Field test, and more frequently looked out and leaved the dark compartment of the Light/Dark Box. Similar although less prominent tendencies were found in other experimental groups. In the Extrapolation Deprivation test, prenatally exposed to CPF rats of the 4th group showed less ability to learn and solve the extrapolation problem.

In conclusion we may say that chronic exposure to low doses of CPF of female rats before pregnancy and at the GD 7 caused significant behavioral alterations in their offspring.