OPTIMIZATION OF EXPERIMENTAL CONDITIONS FOR LABORATORY STUDIES OF HONEY BEES (*APIS MELLIFERA*) USING UREA SOLUTIONS

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Recent studies are increasingly focusing on potentially toxic compounds for pollinators. However, the LD_{50} and LC_{50} values of many basic chemicals have not been determined to date. We compared the effects of acute, prolonged acute and chronic oral administration in laboratory studies. As a test substance, we chose urea, which is naturally formed in the bee 's body during protein metabolism, and is also a widely used biostimulator in plant cultivation. In acute and chronic tests, the fed solutions were in the 0,005 – 0,320 g/ml urea concentration range, dissolved in 50% saccharose-water syrup. In the case of the prolonged acute test 20 µl of 0,08 g urea dissolved in 1 ml 50% saccharose-water syrup per bee was consumed only once on the first day and resulted in an increase in the mortality rate over 40% by the 8th day, while the mortality rate of the control remained at 20%. The observed mortality rate in the case of chronic administration was proportional to the administered concentration. In order to set the conditions of the test, we examined the effects of changing light exposure, temperature and humidity levels on food consumption habits and mortality rates.