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**HEAVY METALS AND FATTY ACIDS CONTENTS  
IN THE PHOSPHOLIPID TISSUES OF THE HONEY BEES  
IN DIFFERENT NATURAL AREAS  
OF THE CARPATHIAN REGION**

Heavy metals take part in the metabolic processes in the insects. Moreover, ones influence on the intensity of the metabolism of protein, lipids and carbohydrates in the body of bees. As a result the provision of bees body with energetic, structural and biologically active material is changed. This has its impact on the lifestyle and productivity of honey bees. According to this, scientific and practical interest lies in the study of heavy metals and fatty acids contents in the phospholipids in the tissues of the honey bees depending on the environment.

The aim of this study was to research the intensity of the accumulation of specific heavy metals and phospholipids in the abdomen, thorax and head tissues of the honey bees taken from the beehives located in the mountain, foothill and forest-steppe areas of the Carpathian region. It was stated that in the abdomen, thorax and head tissues of the honey bees, taken from the beehives located in the foothill and especially in the forest-steppe areas of the Carpathian region, in comparison with the mountain area, the content of iron, zinc, copper, chromium, nickel, lead and cadmium is higher. At the same time relative content of polyunsaturated fatty acids ( $\omega$ -3 i  $\omega$ -6) in the phospholipids decreases but it increases in the saturated and monounsaturated ones ( $\omega$ -7 i  $\omega$ -9). Functionally metabolic process and biological value of fatty acids of the phospholipids for the thorax, abdomen and head tissues in the honey bees decreases as well due to the intensity of the technological load.

A high level of heavy metals and a low level of phospholipids in the abdomen, thorax and head tissues of the honey bees taken from the beehives located in the foothill and especially in the forest-steppe areas of the Carpathian region in comparison with the mountain is the result of industrialization and urbanization.