

MORPHOLOGICAL CHARACTERISTICS OF CERTAIN LINES OF HONEY BEE IN SERBIA

Nebojša Nedić¹, Mića Mladenović¹, Ljubiša Stanisavljević²

¹ University of Belgrade, Faculty of Agriculture, Institute for Fruit and Viticulture, Nemanjina 6, 11080 Belgrade, nedn@agrif.bg.ac.rs

² University of Belgrade, Faculty of Biology, Department of Morphology, Systematics and Phylogeny of Animals, Studentski trg 16, 11000 Belgrade

Introduction

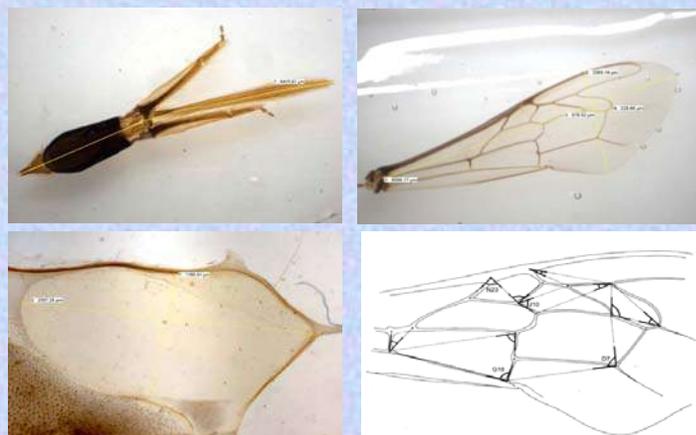
During the previous decades the natural populations of honey bee *Apis mellifera carnica* Poll. at the territory of Serbia has been subjected to constant negative influence of man, in the first place through deployment of chemical substances requisite in agriculture, but also due to uncontrolled import of and crossbreeding with the other breed of this bee.

For the purpose of their further breeding, researches upon the metric morphology of certain individual populations of choice at the territory of Republic of Serbia. During three years of research (2004-2006) three selected lines of honey bee from three different localities in Serbia (East-line 1, West – line 2 and South Serbia-line 3) were studied.

Material and method

The metric morphology examinations have been conducted upon the sample of 50 bees taken from three geographically rather distant sites of the Republic of Serbia. Each bee has been fixated at the 70% ethanol, and then the permanent microscopic preparations have been made of the following body parts: the right forewing, the mandible and the wax mirror.

The preparations have been viewed through the Leica XTL-3400D binocular microscope, and the measurements of lengths and four angles of the forewing, length of the tongue and the cubital index have been conducted by the IL 1009 software package in compliance with the *Ruttner* (1978) methods. The data have been statistically processed, and the basic descriptive statistic parameters and the variant analysis (ANOVA) have been calculated. All statistical analyses were conducted using the Statistica 6 software package (*StatSoft*, 2001).



Results

Morphometric studies have shown that the bees from South Serbia had the widest front wing span (3,35 mm), the longest and widest wax mirror (1,23 mm and 2.39 mm), the longest tongue (6,52 mm), the greatest angles G18 (95,69°), J10 (56,59°), D7 (99,14°), while the bees from East Serbia had the biggest value for angle N23 (93,09°), and bees from West Serbia had the longest forewing (9,30 mm) and highest cubital index (2,84). Through the survey of morphological parameters we have conclusion that the differences in length of the tongue have been statistically significant ($P < 0,05$) among examined lines. The differences in cubital index, wax mirror width, angle D7 and G18 between lines 1 and 3 were statistically significant ($P < 0,05$).

Conclusion

Based on these studies we can conclude that there are significant variability of different lines of bees for most observed characteristics, which could be served to preserve authenticity of the species and improve the selection of domestic honey bee.