

Apiculture is an important craft growing almost since the dawn of humanity. Many of scientists are involved for years in investigation of life of bees and products of their work. Honey, beebread, royal jelly and propolis products are well known products of activity of these extremely valuable insects. However, is little known about such "bee products" as drone brood. Some kind of hierarchy exists in the bee family and each group of bees has to play its own exact function in the colony. Each hive has a queen-mother, number of workers, whose position depends on their age and drones. While the role of the queen-bee is care for an extension of the species, bee-workers have a number duties of feeding young larvae by royal jelly and honey, collecting pollen and nectar and pay attention to cleanliness and safety of hive. The only task of drones is the insemination of the queen. They appear in the hive during the spring and are removed by bee-workers in the autumn. They do not perform in colony any additional social function and remain idle until mating flight. Bees care about numbers of drones in the bee family and they have help from beekeepers. Drone brood is larvae of which develop drones and they are successively removed by beekeepers from hives in order to maintain the proper development of bee family. However, this "waste" of beekeeping is unusual source of valuable nutrients such as amino acids, minerals, hormones and vitamins. For example, in Indonesia drone brood homogenate is added to honey in order to improve its nutritional value. In alternative medicine drone brood homogenate is also known as an adjuvant potency, due to the presence of male sex hormones. However, there is no information in available scientific sources about contents of compounds with antioxidant properties in this interesting "waste". The aim of this project is to examine drone brood homogenate for the content of antioxidant compounds. Antioxidants are chemical compounds that prevent or inhibit reaction of oxidation of various substances. Among them are water-soluble compounds (hydrophilic antioxidant) as well as fat-soluble nonpolar organic solvents (lipophilic antioxidants). Lipophilic antioxidants which include  $\alpha$ -tocopherol, coenzyme Q<sub>10</sub>, and *all trans*-retinol are important components involved in many metabolic reactions of living organisms. They participate in the reactions of cellular respiration. Proper course of these reactions prevents formation of harmful products arising during their course, such as free radicals. It is extremely important to the health of humans and animals. The free radicals are responsible for processes of aging and development of various diseases, for example, atherosclerosis. This is main reason why researchers are constantly looking for new sources of these valuable substances. This research project will contribute to the knowledge of the antioxidant properties of drone brood homogenate, also determine the correlation between antioxidant content in homogenates and health of bee colonies, and the relationship between the content of lipo- and hydrophilic antioxidants and antioxidant activity of drone brood homogenate. Results of this project will contribute to increased knowledge about this unusual material, which is drone brood homogenate, and may also affect the development of the economy of apiculture.