Abstract

This bachelor thesis is focus on the determination of calcium and magnesium in selected honey samples. Determination is performed by atomic absorption spectrometry with a flame atomization technique (F-AAS) by using an acetylene-air flame.

The first part of the bachelor thesis is devoted to finding the optimal conditions of the method for further measurement of individual honey samples. These parameters are beam height above the burner edge and acetylene flow rate. Then, under these optimal conditions, the basic characteristics of calcium and magnesium determination (repeatability, sensitivity, limit of detection and limit of quatification) were found.

In the second part of this bachelor thesis, the calcium and magnesium determination are performed in the honey samples. A total of 15 honey samples are analysed. The honey samples are prepared by local beekeepers from Czech Republic and retail chains (Tesco). The measured values are recorded in tables and statistically evaluated.

The determined calcium concentrations range is 7.11 – 66.8 μg/g, for magnesium to 8.79 – 92.2 μg/g. Finally, the values obtained for honeys from the Czech Republic are compared with data reported in foreign studies.

Key words:

Atomic absorption spectrometry, flame atomization, magnesium, calcium, honey