

Abstract

In this bachelor's thesis a comparison of three analytical methods for total iron determination in three different food supplements is described. The examined food supplements are Biovit C60, Hemofin and Aktiferrin Compositum. The three methods used for determination of iron are manganometric titration, atomic absorption spectrometry and sequential injection analysis paired with spectrophotometric detection. Two methods were used to prepare solutions of each supplement – they were dissolved in distilled water and also prepared by microwave decomposition of samples. The microwave decomposition is definitely a more suitable preparation method in this case, considering the composition of each supplement. The least suitable of all three methods mentioned above has to be the manganometric titration due to the composition of the matrix. The calibration curve was used to determine total iron content by atomic absorption spectrometry with flame atomization. The agent used in sequential injection analysis to create a product, which can be detected by UV/VIS spectrophotometry was 1,10-phenantroline. The final product was red with the absorption maximum at 512 nm. The most accurate results were obtained by atomic absorption spectrometry.