Abstract

The aim of this work was development of high-performance liquid chromatography method with DAD detection for determination of nicotine in tobacco. Standard operating procedure used by World Health Organization was chosen as comparison of the developed method. Optimized high performance chromatography method is suitable for determining nicotine in tobacco. Limit of detection for this method was 0,0003 mg/ml and limit of quantification was 0,0010 mg/ml. Optimization of preparation of samples was significant part of this thesis. Sample preparation procedure was made substantially easier in comparison to other commonly used methods. Nicotine content was determined from real tobacco leaves samples, cigarette tobacco filler, nicotine cartridge for electronic cigarettes and pipe tobacco. Satisfactory relative standard deviation was achieved for all types of samples. Next part of this thesis focused on study of determining polyphenols using high-performance liquid chromatography with diode array detector. Chosen analytes were chlorogenic acid, caffeic acid, rutine, scopoletine and quercitrine. Among the five tested analytes, the highest sensitivity was achieved for chlorogenic acid and caffeic acid. All of the analytes achieved low limits of detection and quantification.

Key words

Liquid chromatography, tobacco, nicotine, polyphenols, gas chromatography