Abstract

The aim of this diploma thesis was to develop a miniaturized extraction method for a fast screening of non-volatile nitroso compounds using gas chromatography with a nitroso specific chemiluminescence detection. According to a final methodology, the samples were prepared by extraction of grinded malt using a mixture of pyridine and acetonitrile in ratio 60:40 (v/v). To enhance volatility of the determined analytes, the two-step derivatization using hexamethyldisalazane and *N*,*O*-bis(trimethyl)-trifluoroacetamide was used. The total volume of the sample was 200 μl and the preparation time after optimization was in total 80 min.

The extraction method was connected to a classification method, which can divide chromatographic peaks into the groups of *N*-nitroso and *C*-nitroso compounds, and interfering substances. After application of the methods mentioned above to real malt samples, the specific chromatographic peaks of *C*-nitroso and *N*-nitroso compounds were selected. Description of their properties and structure suggestion will be a subject of the following study.

Keywords

Nitroso compounds, malt, extraction, derivatization, gas chromatography, chemiluminescence detector