

Abstract

Application of multivariate analysis (MVA)—principal component analysis (PCA) and cluster analysis—for the analysis of chromatographic and sensory data was investigated for volatiles of plant oils. Five oils—rapeseed, soybean, peanut, sunflower and olive oil—were compared. Volatile compounds of fresh oils and oils subjected to storage at 60 °C were isolated by HS-SPME sampling and analysed by GC/MS, and fast GC with FID detection. Based on developed methods and data treatment it was possible to distinguish between different oils and oils stored for various periods of time. PCA of chromatographic data was related to PCA sensory analysis and similarities in sample clustering were observed. Multivariate analysis facilitates comparison of chromatographic profiles of volatile compounds characteristic for various plant oils and for monitoring oil quality in storage.