**Identification of phenolic and alcoholic compounds in wine spirits and their classification by use of multivariate analysis**

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***Abstra****ct:* During the ageing period wine spirits changing their colour, chemical composition and sensory characteristics. These changes should be simply to monitor. The aim of this study was to develop partial least squares regression (PLS) models for higher alcohols and phenols in wine spirits as well as to show the feasibility of the NIR spectroscopy combined with chemometric tools to distinguish wine spirits and brandies with different ageing degree. To get the reference values, the usual methods for the analysis of spirits drinks were used. Ethanol, esters, acids, methanol and higher molecular weight alcohols were studied. Wine spirits and brandies phenol composition was determined by liquid chromatography. Principal component analysis (PCA) was used to classify the wine spirits and brandies according to their phenolic and higher alcohols composition. Moreover, the Partial least squares regression (PLS regression) was used to calibrate and predict expected contents of higher alcohols and phenols in the wine spirits. Success of the classification of samples by ageing based on individual alcohols was 93.8%, while success of the classification based on individual phenols raised to 100%. This efficiency of the prediction was evaluated by use of linear discriminator analysis (LDA).

*Key words:*distillate**,** ageing, NIR spectroscopy, principal component analysis

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