

Physico-Chemical and Microbiological Profile of Wine Lees of Red Wines from Local Grapes Varieties

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Abstract

In the Republic of Moldova, the viticulture industry is a sector with a high economic impact, and the utilization of secondary products from winemaking represents a growing concern regarding environmental sustainability. Wine lees, one of the types of wine waste, is less studied in order to valorize it. Currently it is used in the production of ethyl alcohol, as aggregates in the soil and others. The aim of this study was to characterize from a physico-chemical and microbiological point of view the lees sediments obtained after the primary fermentation of three types of individualized red wines made from autochthonous grapes varieties. It was found that residual yeasts represent a valuable raw material containing carbohydrates (from $14.35\% \pm 0.19\%$ to $25.11\% \pm 1.51\%$ SU), lipids (from $4.61\% \pm 0.21\%$ to $9.41\% \pm 2.04\%$ SU), proteins (from $42.62\% \pm 1.57\%$ to $77.62\% \pm 9.14\%$ SU), anthocyanins (from 9.18 ± 0.15 to 22.78 ± 1.60 mg cyanid) and beta-glucans (from $12.84\% \pm 0.01\%$ to $17.42\% \pm 0.02\%$). The pH value of wine lees ranges from 3.49 ± 0.0 to 3.083 ± 0.01 , the dry matter from $9.62\% \pm 0.22\%$ to $25.06\% \pm 0.42\%$ and the ash from $0.03\% \pm 0.42\%$ to $0.035\% \pm 0.21\%$. The microbiological study confirmed the presence of live yeasts of the genus *Saccharomyces cerevisiae*, which remain active due to the presence of residual sugars and oxygen. The results of the research are promising and encourage the obtaining of new products with special purpose and added value.

Keywords

Red Wines, Wine Lees, Yeasts, By-Products, Winemaking

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