

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

Wine Physic

Michael Rajnik



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Table of Contents Wine Physic

1. Understanding the eBook Wine Physic
 - The Rise of Digital Reading Wine Physic
 - Advantages of eBooks Over Traditional Books
2. Identifying Wine Physic
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Wine Physic
 - User-Friendly Interface
4. Exploring eBook Recommendations from Wine Physic
 - Personalized Recommendations
 - Wine Physic User Reviews and Ratings
 - Wine Physic and Bestseller Lists
5. Accessing Wine Physic Free and Paid eBooks

-
- Wine Physic Public Domain eBooks
 - Wine Physic eBook Subscription Services
 - Wine Physic Budget-Friendly Options
6. Navigating Wine Physic eBook Formats
 - ePub, PDF, MOBI, and More
 - Wine Physic Compatibility with Devices
 - Wine Physic Enhanced eBook Features
 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Wine Physic
 - Highlighting and Note-Taking Wine Physic
 - Interactive Elements Wine Physic
 8. Staying Engaged with Wine Physic
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Wine Physic
 9. Balancing eBooks and Physical Books Wine Physic
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Wine Physic
 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
 11. Cultivating a Reading Routine Wine Physic
 - Setting Reading Goals Wine Physic
 - Carving Out Dedicated Reading Time
 12. Sourcing Reliable Information of Wine Physic
 - Fact-Checking eBook Content of Wine Physic
 - Distinguishing Credible Sources
 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development

-
- Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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