

## UPRAVLJANJE OTPADOM VINARIJA U SRBIJI. VRANAC KOMINE KAO IZVOR ANTIOKSIDANTA

### WINERY WASTE MANAGEMENT IN SERBIA. VRANAC GRAPE MARC AS THE SOURCE OF ANTIOXIDANTS

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#### Summary

During wine making, large quantities of waste containing high rate of phenol are produced. By processing 100 kilograms of grape-vine approximately 20 - 25 kilograms of grape is produced. The placing of the enormous amount of waste grape (around 5 - 9 million tons per year) generated in all over the world is an increasing environmental problem. The cost of waste disposal and the penalties imposed on companies have therefore increased significantly, often reaching 30,000 – 40,000 Euros in EU. In recent years, the growing concern about the environment has led authorities to look for economically viable solutions for recycling and/or valorizing grape waste. Serbia is one of the major producers and consumers of grapes and wine in the Western Balkans, with a grape and wine production of 330 070 tonnes and 1 700 000 hL of which remains about 7 000 tons of secondary products, which is only used for the production of alcohol, and most of ending up in landfills as organic waste (Statistical Serbian Office, 2012). Significant amounts of polyphenols found in grape, wine and grape by-products and a great interest in their exploitation of potentially bioactive phenolic compounds. In this work, the phenolic composition and antioxidant activity Vranac *Vitis vinifera* L. grape marc (seeds, skins and stems) after obtaining Vranac red wine were investigated. The results show that 88 % phenolic compounds in investigated grape seed and stems extracts are flavanoids. Then, grape skin extracts proved to be rich sources of phenolic acids and tannins. Our results of analysis of grape waste show high content of phenolic compounds reflecting their high antioxidant activity. It was concludes that the grape marc constitutes a very cheap source for the extraction of phenolic antioxidants, which can be used as dietary supplements or food preservatives, thus providing an important economic advantage.

**Keywords:** waste, phenolic, antioxidant activity, cheap source

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