

Squalene Content of “Light” and “Heavy” Wine Lees

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Vinification process generates lees as a main waste product ¹. From economic and environmental point of view, the high amount of this waste makes interesting to evaluate its upgrading for the production of high-value products ². A functional lipid, appreciated in the food, pharmaceutical and cosmetics industry that could potentially be recovered from wine lees is squalene ^{3, 4}. In order to study the potential industrial relevance of wine lees as a source of squalene, residual streams after fermentation and decanting of the wines from different white and red grape varieties were evaluated (harvest 2010). Special emphasis was given to the “light lees” (2nd decanting step), which is the richest winery waste in *Saccharomyces. cerevisiae* cells. Quantitative determination of squalene in the unsaponifiable matter of the samples by RP-HPLC revealed differences due to technological or yeast strain genetic factors. Grape variety was found to influence to a lesser extent squalene accumulation in both vinification processes. Specifically, the levels of squalene in white wine lees ranged from 2.43 to 5.90 (mg/g dry lees), whereas lower values were found in red wine lees (0.54-1.54 mg/g dry lees). As expected, “heavy” lees collected after the 1st decanting step contained lower squalene content than those obtained from the respective “light” lees (5.05 vs 0.73 and 4.53 vs 0.82 mg/g of dry lees, respectively) (harvest 2011). Findings so far support interest in developing an effective procedure for the recovery of a lipid fraction enriched in squalene from the industrial wine lees waste, a mixture of lees from different winemaking processes .

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