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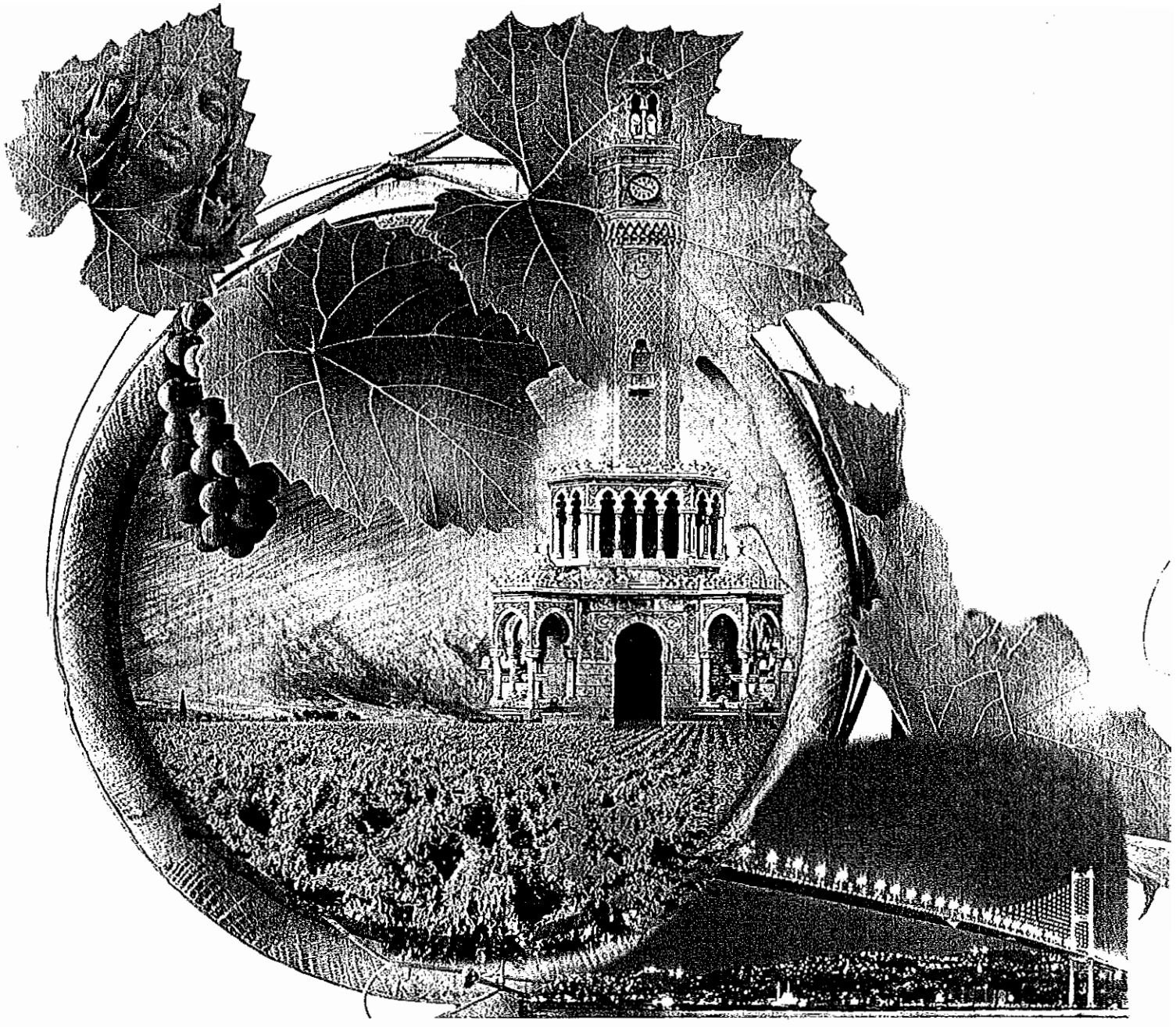

Congress Abstracts Book

INFLUENCE OF YEAST STRAIN AND FERMENTATION TEMPERATURE ON QUALITY OF SAUVIGNON BLANC WINE

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Sauvignon Blanc is a wine with typical aroma that largely defines its sensory quality. Recent studies have highlighted the importance of selection of appropriate yeast strain for alcoholic fermentation to enhance wine varietal aroma. In the present study seven commercial yeast strains were used for fermentation of Sauvignon Blanc grape must of vintage 2010 at different fermentation temperatures. The main chemical parameters, hydroxycinnamic acids, glutathione and volatile thiols were determined in the wines and sensory evaluation was done. Regarding the overall wine quality, two yeast strains were selected for the fermentations of vintage 2011 at the same fermentation parameters. Significant differences were found amongst the wines, especially in the concentration of volatile thiols, glutathione, and consequently in sensory quality. Some important features of yeast strains were confirmed in both vintages. Selection of appropriate yeast strain and fermentation temperature can therefore represent an important tool for the winemakers to produce wines with more predictable quality. Sauvignon Blanc est un vin aux arômes typiques qui définit en grande partie sa qualité sensorielle. Des études récentes ont mis en évidence l'importance de la sélection de la souche de levure approprié pour la fermentation alcoolique afin d'améliorer le vin arôme variétal. Dans l'étude présenté sept souches de levures commerciales ont été utilisées pour la fermentation du Sauvignon Blanc moût de raisin du vendange 2010 à des températures de fermentation différente. Les principaux paramètres chimiques, acides hydroxycinnamiques, les thiols volatils et de glutathion ont été déterminés et l'évaluation sensorielle a été réalisée en les vins jeunes produits. En ce qui concerne la qualité du vin dans l'ensemble, deux souches de levures ont été choisis pour les fermentations de vendange 2011 dans les mêmes conditions. Des différences significatives ont été trouvées parmi les vins, en particulier de la concentration de thiols volatils, le glutathion et, par conséquent, de la qualité sensorielle. Quelques caractéristiques importantes d'efforts de levure ont été répétées dans les deux vendanges. Sélection de souche de levure et la température de fermentation peut donc constituer un outil important pour les viticulteurs pour produire des vins avec plus de qualité prévisible.

EXTRACTION KINETICS OF OAK-DERIVED VOLATILE AND OAK - DERIVED ELLAGITANNINS COMPOUNDS DURING WINE AGING (OAK CHIPS/BARRELS), INFLUENCE ON FLAVOR AND TANNIN PERCEPTION

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Our study was designed to monitor the extraction kinetic of aromas and ellagitannins of both oak chips and staves in model wine solution and extraction kinetic of aromas and tannins of wines aging in barrels. The impact of toasting level was studied in parallel and the ellagitannins levels influence on wine perception was estimated by a trained judge's panel. The contributors to an overall oak aroma, compounds related to barrel toasting : *cis/trans*-Whisky lactone, Vanillin, Eugenol, Gaiacol, 4-methyl Gaiacol, o-crésol, Syringol, Furfural, 5-Methylfurfural, Syringaldeyde and Ethyl-Vanillin were analyzed by GS-MS. Ellagitannin levels were quantified by HPLC-UV-MS, sensory analysis concerning tannin perception intensity (astringency, bitterness) and oak aroma intensity (vanilla, smoky, toasty, spicy) using a 0-7 scale was also performed. Our results showed that Oak wood (chips, staves, barrels) may influence wine typicality (tannin perception/ roundness and aromas). Each type of barrel as well as each wood and piece size of staves and oak chips showed particular extraction kinetics during wine aging. Ellagitannins and aroma extraction kinetics stabilized after 2 months in oak chips and after six months in staves. Red wine aged in stainless steel tanks with light toast staves (LT); presented more ellagitannins than the red wine aged with the heavy toast (HT) oak chips. In parallel, LT oak, having more ellagitaninns amounts were characterized more astringent. Noisette toast for staves and barrels as well as Medium toast (MT) give more vanilla and grilled almond aroma flavors than LT. During wine aging vanilla intensifies, and tannins become more mellow and soft.

DIFFERENTIATION OF RED MINORITY VARIETAL WINES BY VARIETY, WINEMAKING STAGE AND VINTAGE ACCORDING TO THEIR AMINO ACID AND BIOGENIC AMINE COMPOSITION

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Amino acids and biogenic amines have successfully been employed to differentiate wines according to variety, geographical origin, vintage and winemaking technique in many researches. La Rioja (Spain) has an important number of autochthonous and minority grape varieties with good characteristics to obtain high quality red wines. However, there is not any study on the profile and content of amino acids and biogenic amines in these minority varieties. Therefore, the objective of this work was to characterize Rioja red wines made with minority varieties by pattern recognition of free amino acid and biogenic amines profile. Moreover, the impact of the winemaking stage and vintage on these compounds was analysed.

The study was carried out in an industrial wine cellar and 84 red varietal wines from *Vitis vinifera* cv. Monastel, Maturana Tinta and Maturana Tinta de Navarrete varieties were analysed. The grapes were grown in the same vineyard to avoid variations due to viticulture techniques, and Tempranillo was also studied as a reference variety. Amino acids and biogenic amines were analysed by high performance liquid chromatography. Chemometric techniques of principal component analyses were used in order to evaluate the influence of the variety, the winemaking stage and the vintage in the amino acid and biogenic amine composition of the different wines.Results showed that the content and profile of amino acids and biogenic amines were different depending on the variety. It was also observed that the winemaking stage produced a wine differentiation according to their amino acid and biogenic amine composition. However, vintage only influenced biogenic amine pattern. All the varietal wines showed concentrations of amino acids and biogenic amines within the range reported for other red wines, with low values in histamine, of great importance from a health point of view.

Los aminoácidos y aminas biógenas se han utilizado con éxito en muchos estudios para diferenciar vinos por variedad, origen geográfico, añada y técnica de vinificación. La Rioja (España) tiene un importante número de variedades de uva minoritarias autóctonas con buenas características para obtener vinos tintos de alta calidad. Sin embargo, no hay estudios sobre el perfil y el contenido de aminoácidos y aminas biógenas en estas variedades minoritarias. Por tanto, el objetivo de este estudio fue caracterizar vinos tintos de Rioja elaborados con variedades minoritarias según su perfil y contenido en aminoácidos y aminas biógenas. Se evaluó también la influencia de la etapa de vinificación y de la añada en el contenido de estos compuestos.El estudio se realizó en una bodega industrial y se analizaron 84 muestras de vinos tintos monovarietales elaborados con las variedades *Vitis vinifera* cv. Monastel, Maturana Tinta y Maturana Tinta de Navarrete. Las uvas se cultivaron en el mismo viñedo para evitar variaciones debidas a prácticas de viticultura, y la variedad Tempranillo se estudió también como variedad de referencia. Los aminoácidosy

CONSEGUENZE ANALITICHE ED ORGANOLETTICHE DERIVANTI DALL'IMPIEGO DI MANNOPROTEINE PER LA STABILIZZZAZIONE DI VINI BIANCHI E ROSATI

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Alcuni vini bianchi (Chardonnay Alto Adige del 2010 e Trebbiano del 2010) e alcuni vini rosati (Cirò del 2009 e del 2010) sono stati trattati con mannoproteine altamente solubili estratte dai lieviti, al fine di verificarne l'effetto nel tempo sulla stabilità tartarica. I risultati ottenuti sono stati confrontati, per un anno, con quelli dei campioni trattati a freddo o con l'acido metatartarico. In aggiunta alle analisi comuni ed a quelle specifiche per valutare la stabilità dei vini, sono stati esaminati i profili aromatici sia per la frazione libera sia per la frazione legata.In tutti i vini bianchi e rosati trattati con mannoproteine si conferma una sostanziale tenuta del quadro aromatico ed una maggior gradevolezza dei vini alla degustazione. Per quanto concerne la stabilità, alle dosi impiegate per le prove, si ottengono risultati paragonabili agli altri trattamenti.

Certain white wines (Chardonnay Alto Adige 2010 and Trebbiano/Ugni Blanc 2010) and rosé wines (Cirò 2009 and 2010) were treated with highly soluble mannoproteins extracted from yeasts, in order to verify the development of tartaric stability over time. The obtained results were compared to samples that have undergone cold treatment and samples with an addition of metatartaric acid, for a period of one year. In addition to standard analyses and those specific to evaluating wine stability, aromatic profiles of the free and bonded fractions were examined. All the white and rosé wines treated with mannoproteins correctly maintained their aromatic profiles and were better appreciated at tasting. In terms of stability, at dosesused for the trials, the results obtained are similar to those using other treatments.

MONOPHENOLS IN RED WINES AND GRAPE JUICES PREPARED BY INNOVATIVE TECHNOLOGY

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Innovative technology of making phenolic-rich grape juices from the red grape varieties has been elaborated and offered. The objects of research were the samples made from the local red grape varieties (Saperavi, Meskhuri Shavi): 1 - juices prepared by the innovative technology developed by us; 2 – dry red wines using the existing technology. The investigation of the amount of phenolic components was conducted using the method of HPLC on the apparatus Pro Star (firm "Varian"). It has been established that compared with wine samples the concentration of phenolic components is higher in juice samples: of (+) – catechin, (-) epicatechin and quercetin-3-β-D-glucosid in twice and more; of sinnapic acid – in 61%. The concentration of chlorogenic, caffeic and vanillic acids in juice samples is even higher. We have got a patent on this innovative technology from the National Intellectual Property Center of Georgia "Sakpatenti".

Il est élaboré et recommandé une technique innovatrice de production des jus enrichis de composants phénoliques à partir des espèces de raisin rouge. Objet de recherche : échantillons préparés à partir des espèces de raisin rouge locales (sapéravi,meskhouri noir) de : 1. – jus – préparés par procédé innovateur élaboré par nous ; 2. –vins rouges – préparés par procédé connu. L'étude quantitative des composants phénoliques a été procédée par chromatographie liquide de haute efficacité sur l'appareil Pro Star (marque « Varian »).