



QUALITY CHARACTERISTICS OF QUERCUS MACEDONICA, *Castanea sativa* Mill. VS *Quercus Alba* IN ORDER TO PRODUCE AN INNOVATIVE BALSAMIC VINEGAR PRODUCT

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ABSTRACT

Acetic fermentation is a vital function for microorganisms. Since antiquity, vinegar has been used both to dressing food, but also to characterize the irritable people. The aim of this study was to investigate the quality characteristics of Greek oak (*QuercusMacedonica* - QM) and Greek chestnut wood (*Castanea sativa* Mill. - CsM) in comparison with an American oak (*Quercus Alba* - QA) in order to produce vinegar from grape and apple. This study was conducted to make known the properties both of the Geek Macedonian Quercus and chestnut wood. All official OIV methods were used to implement this study. Volatile acidity increased in the apple vinegar more in QM and less in QA and CsM. In wine vinegar an increase in volatile acidity was observed at about the same level of 28 grams per liter expressed in acetic acid. It has therefore been observed that QM does not behave in the same way and rhythm as other forest species. We observe that QM does not release its ingredients quickly, so it is recommended for long aging of both wines and vinegars. QA and CsM release components from the first month. Polyphenols show a graduation from QM (about 1000 mg/l) to CsM (approximately 15.500 mg/l). All experimental data were confirmed by liquid chromatography. It was found that QM is best suited for aging apple vinegar. This study helps us to keep vinegar in every type of barrel, so to produce innovative balsamic vinegar.