



Thesis title: EFFECT OF SIZE, TOASTING DEGREE AND TIME OF EXTRACTION ON THE VOLATILE COMPOSITION OF A MODEL WINE SOLUTION TREATED WITH AMERICAN OAK CHIPS

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Abstract (max 300 words)

Topic position & objectives:

The volatile compounds released by different types of oak chips differing in size and toasting degree were studied using a model wine solution. The objective was to understand how size, toasting degree and extraction time interfered with the volatile compounds found.

Methods:

The volatile composition on three different stages of a simulated extraction was analyzed. Thirty-two diverse oak related volatile compounds were found using a GC/MS.

Results:

The concentration of all compounds increased during the extraction time. The light toast chips reported higher concentrations of lactones (35% of the total compounds concentration). The lactones were diminishing their concentration while the toast degree was increasing reporting approximately 0,58% of the total amount of compounds in the high toast chips. Intensive toasting degrees conferred greater quantities of benzenic and furanic compounds. Benzenic compounds were always found in larger amounts than the rest and its concentration in volume was increasing as the toasting degree was intensifying. The benzenic compounds comprise the 61% of the total amount of compounds in light toast and their concentration increased up to 94% in high toast.

Main conclusions:

The size factor did not interfere on the quantity of aroma compounds released by the oak chips according to Principal Component Analysis results. The toasting degree had an influence on the type and quantity of oak derived compounds.

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Keywords (5):

American oak chips, volatile composition, GC-MS, toasting.