The role of gallic and caffeic acids in white wine preservation

Z. Genisheva[a]*, I. Roussis[b], Cerdeira A.[c], J.A. Teixeira[a] , J.M. Oliveira[a]

([a]) Universidade do Minho, Braga, Portugal,

([b]) University of Ioannina, Greece, ([c]) CVRVV, Porto, Portugal.

*Coresponding author

Gallic and caffeic acids were used as additive for white wine preservation. Gallic acid or caffeic acid, in concentration of 60 mg/L, were added in Vinho Verde white wine containing 35 mg/L of free SO_2 at bottling. For comparison white wine were bottled with 20 mg/L of free SO_2 and with 35 mg/L of free SO_2 (usual concentrations in wines), without gallic or caffeic acids. Wine quality was evaluated in terms of sensory characteristic, color and aromatic compounds in the time of bottling and after 12 and 25 months of storage.

Sensory evaluation of the wines was made by a trained panel of 5 judges. The color changes were assessed using CIELab method. Aromatic compounds in wine were quantified and identified, after liquid/liquid extraction using a gas chromatography coupled with mass spectrometry (GC-MS).

According to color analysis, after 12 and 25 months, the wine with gallic acid was the one with better color preservation and less oxidation, followed by the wine with caffeic acid. Moreover, the wine with gallic acid obtained the highest scores according the sensory evaluation. In terms of aromatic compounds all wines demonstrated a rich aromatic profile.

Present results indicate that gallic and caffeic acids can improve sensory quality of white wine during storage and protect wine aroma volatiles.

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