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Sulfur free red wines through the use of grapevine shoots: Impact on the wine quality

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Abstract

Following a preliminary study to determine the possibility of using a grapevine shoot extract (VIN) as a sustainable alternative to sulfur dioxide (SO₂), in this study, the chromatic features, phenolic composition, and sensory analysis of wines treated with VIN at two concentrations were studied during storage in bottle for the first time. The highest differences were found in phenolic compounds after 12 months of storage in bottle. The VIN wines had a low content of free anthocyanins and were high in vinyl-pyranoanthocyanins, and B-type vitisins. Consequently, they showed better chromatic characteristics. Moreover VIN, especially at high dose, preserved non-anthocyanin phenolic compounds better than SO₂. However, at this high dose some organoleptic properties were affected. VIN, when used at a low dose, is able to preserve wine composition without loss of quality.

Keywords: stilbene, sulfur dioxide, quality wine, polyphenols, color, anthocyanins.

1. Introduction

Wine quality is defined by sensory attributes, which are determined by the physical and chemical characteristics of the wine. Since phenolic compounds are essential constituents of

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