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Oral communication/Poster contribution

Characterisation of Sicilian Nero d'Avola grape and wine: a preliminary study

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Abstract
The chemical composition and the sensory characteristics of wine result from dynamic interactions between several factors including grape variety, soil, viticultural techniques, climate conditions, yeasts metabolism, oenological approaches. Recently, Grigg et al. [1] described the vine age is commonly attributed to superior vine performance affecting the wine quality. Moreover, spontaneous fermentations can preserve the aromatic varietal character allowing the implementation of the link between the wine and the *terroir*. This study aimed to evaluate the composition of Nero d'Avola grapes from vineyards of different age as well as that one of wines also obtained with spontaneous fermentation. *Vitis vinifera* L. cv. 'Nero d'Avola' samples were collected in 8 vineyards, 4 of them being 10-years old (10Y) and 4 being 20-years old (20Y), located in 3 different areas of Sicily. Grapes were characterised for average berry weight, must yield, general chemical composition (sugars, titratable acidity, pH, readily assimilable nitrogen), total and extractable flavonoids and anthocyanins, and microbiota. Triplicate microvinification trials with maceration were performed considering inoculated and spontaneous fermentations. For the latter, the microbial population was assessed during the fermentation. Once the alcoholic fermentations were completed, the wines were racked, stabilized and bottled. The wines were characterised for general chemical parameters, phenol-related indexes and aroma profile. The must yields were lower for grapes from 10Y vineyards than those from 20Y vineyards in most of the cases. No clear vineyard-age trends were observed for pH and titratable acidity maybe due to the vine irrigation. Little differences were found for total and extractable flavonoids and anthocyanins in grapes collected from the same area. However, the phenolic compounds seemed to be affected by the growing area of grapes with the higher altitude positively affecting their content. Relevant differences were detected for microbial populations on grapes that were found even in the first three days of fermentations. Nonetheless, minor changes in general chemical composition were observed in wines from inoculated and spontaneous fermentations, and from vineyards of different age. The phenolic compounds were higher in wines from 20Y vineyards as well as the colour index suggesting the role that the vineyard age could play on wine features. The study provides preliminary evidence of the impact of vine age on wine composition for an important grape variety for the Sicilian wine industry.

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References
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