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## THE PHOTO-OXIDATIVE MECHANISMS OCCURRING IN WHITE WINE

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**T**he white wine is generally bottled in clear glass as a request by consumers. Due to the absence of anthocyanins and the low levels of phenols, the white wine results to be unprotected against the light of which it can be exposed during storage and shelf-life. The light can be detrimental on the sensory characteristics of white wine due to the appearance of the light struck taste, a defect associated to the descriptors of cabbage like notes. The molecules responsible for the defect are certain sulfur compounds. Their formation is due to the presence of riboflavin (RF) as a photosensitizer and methionine which is degraded to give methional and reduced riboflavin. Methional is unstable when exposed to light and decomposes to acrolein and methanethiol, two molecules latter yield dimethyl disulfide. The protection of wine against the formation of these unpleasant notes is of particular interest for the wine maker as the quality and the sensory characteristics of wine need to be maintained up to the consumption. The enological strategies exerting a protective effect include the proper choice of the yeast which releases RF during the alcoholic fermentation and a low-producer strain can lead to low level of RF in wine. The wine treatment with bentonite and charcoal was found to be effective in RF removal

limiting the risk of the light-struck taste, even if low levels of these adjuvants need to be used avoiding the depletion of the aromatic compounds. The addition of tannins, in particular from wood origin, showed a protective effect which was more evident in model solution when the quinones were present at higher concentrations. In these ways, sensory properties and the quality of wine can be ensured as required by both the winemakers and the consumers.

### Biography

Daniela Fracassetti has been working at the Department of Food, Environmental and Nutritional Science at Università degli Studi di Milano, Italy since 2006, where she has been dealing with winemaking. During her researches, she has increased her knowledge about Chemistry, Molecular Biology, Physiology and Microbiology in the model yeast *S. cerevisiae* as well as in the non-*Saccharomyces* yeasts, such as *Brettanomyces bruxellensis*. Actually, she is dealing with Oenological Chemistry; in particular she has been focused on the chemical mechanisms behind the formation of off flavors and the fate of wine components and the development of analytical methods.

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