

Application of UV-C light for preventing the light-struck taste in white wine

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The light-struck taste is a fault occurring in white wine bottled in clear bottles and exposed to light. The defect is due to the formation of methanethiol and dimethyl sulphide responsible for like-cabbage aroma arising from the reaction between riboflavin (RF), a highly light-sensitive compound, and methionine (Met). The light-struck taste is limited for RF concentration lower than 50 µg/L achieved through the choice of a *Saccharomyces* strain low RF-producer and the RF removal with charcoal and bentonite as fining agents [1]. Moreover, the protective effect of wood tannins has been recently showed, especially gallnut tannins [2].

Due to the RF sensibility to light, the UV-C light treatment was assayed. A synthetic wine solution spiked with RF (200 µg/L) and Met (3 mg/L) was irradiated with UV-C light up to 2000 J/L and RF decay was monitored. A linear decrease as UV-C light intensity increase was observed. RF was lower than 50 µg/L and 20 µg/L for 1500 J/L and 2000 J/L treatments, respectively. The addition of tannins (40 mg/L) led to a limited RF decrease (73%) maybe due to their shading properties [3].

Even though the UV-C light treatment is not admitted by the International Organization of Vine and Wine, its application could represent a tool for avoid the risk of light-struck taste development in bottled wine. The light exposure when the redox potential is high and the combined use of tannins could limit the appearance of this fault after the wine bottling preserving the wine quality during the shelf-life.

Acknowledgements

The financial support of Piano di Sostegno alla Ricerca 2015/2017 – Linea 2 – University of Milan.

References

- [1] Fracassetti, D. et al., Australian Journal of Grape and Wine Research, 2017, 23, 2.
- [2] Fracassetti, D. et al., 2017, 11, 89.
- [3] Maujean, A. et al., Science des Aliments, 1978, 12, 277.