Identification of riboflavin low producer yeasts to prevent the light-struck taste in white wines

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INTRODUCTION
Wine quality maintenance during the storage is a fundamental aspect for wine producers and consumers. Nowadays, great attention has been given to the light effect, causing detrimental sensory changes of wine; indeed, light can induce off-flavours associated to the light-struck taste (LST). This fault is due to photochemical oxidation processes in which riboflavin (RF) and methionine (Met) play an important role generating methanethiol (MeSH) and dimethyl disulphide (DMDS), responsible of the unpleasant cabbage and onion-like odours that make wine undrinkable. Although it is well-known the contribution of yeasts in the final amount of these compounds in wine, microbiological strategies limiting the LTS defect are not yet available.

This study is part of the project “Innovative and sustainable approaches for the prevention of photo-induced defects in white wines and sparkling wines (Enofotoshield)” and, in particular, it aims at providing wineries with alternative microbiological approaches to counteract the LST.

AIM

MATERIALS AND METHODS

RESULTS

- Absence/Presence of RF in the growth media composition induces a different production trend: if it is present, its concentration increases over time while that of flavones remains constant; the opposite situation is verified in absence of RF.
- ANOVA analysis highlights that RF production is influenced from the producer strain ($p = 0.052$).
- High variability of the analyses has been observed.

CONCLUSIONS

The obtained results reveal that the growth trend of the four strains is similar, and it affects the RF and flavones production. The next steps of the study will be: the analysis of the Met release and its intracellular content; the investigation of factors that could influence the RF release (temperature, oxygen-limiting condition, availability of nutrients).

REFERENCES