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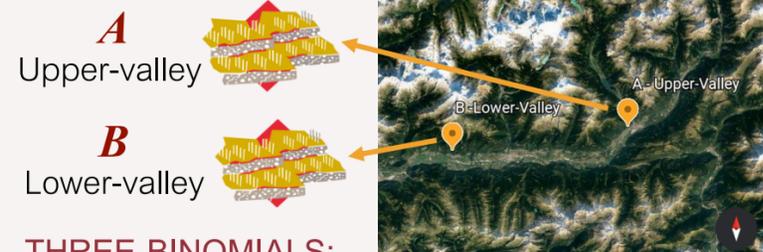
1. INTRODUCTION

Sfursat is a DOCG reinforced wine produced in Valtellina from partially withered red grapes of *Vitis vinifera* L. cv. Nebbiolo. The grape ripeness degree and the dehydration process strongly influence the physicochemical characteristics of grapes [1, 2, 3]. In particular, grape skin and seeds contain several classes of phenolic compounds strictly associated with red wine quality [4]. The aim of this research is to assess the combined influence of different ripeness levels and withering rates on the standard chemical composition and phenolic profile of winegrapes.

2. MATERIALS AND METHODS

A TWO-YEARS STUDY (VINTAGES 2019 AND 2020)

TWO VINEYARDS:



THREE BINOMIALS:

- Early harvest/long withering (EL)
- Medium harvest/medium withering (MM)
- Late harvest/short withering (LS)

ANALYSIS:

- Grape must composition
- Grape mechanical properties
- Extractable phenolic profile of grape skins and seeds before and after withering :
 - total polyphenols (IPT);
 - total anthocyanins (TA);
 - total flavonoids;
 - methylcellulose tannin assay.



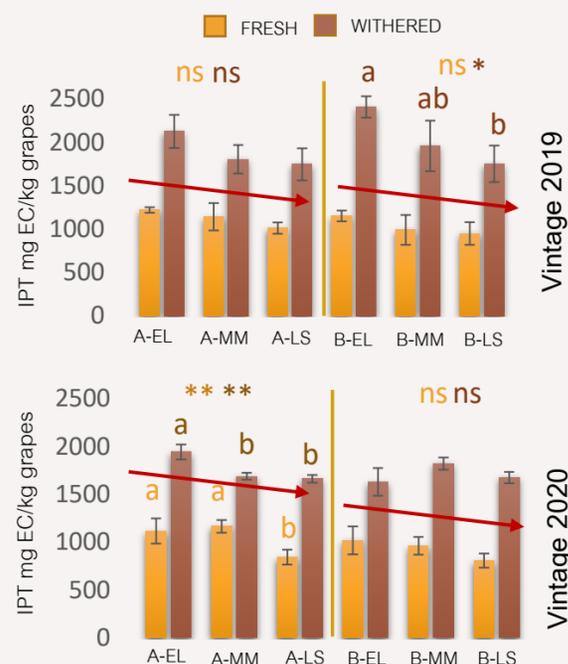
4. CONCLUSIONS

Harvest time and withering length can be modulated according to the desired oenological objective. In general, early/medium harvest and long/medium withering gave the higher phenolic contents, particularly for seeds polyphenols, although the vineyard location and the weather conditions of the year influenced the withered grape phenolic characteristics.

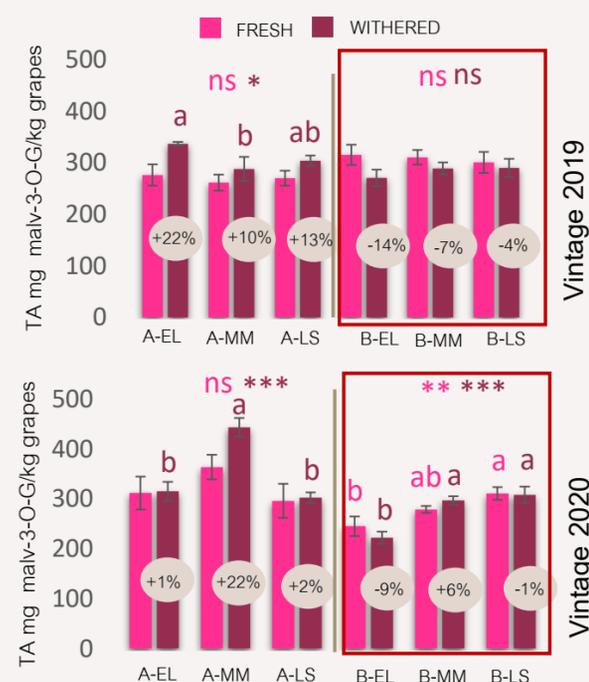
3. RESULTS

At the end of withering, EL thesis showed the highest values of sugars and acidity, and the lowest pH. The content of total polyphenols, flavonoids, and tannins in seeds showed a decreasing trend by leaving the grapes on the plant longer, whereas their impact increased considerably after withering with respect to fresh samples, due to berry dehydration. Instead, the skin phenolic compounds were less influenced by harvest period, but their concentrations increased after withering.

SEEDS EXTRACTABLE PHENOLIC COMPOUNDS

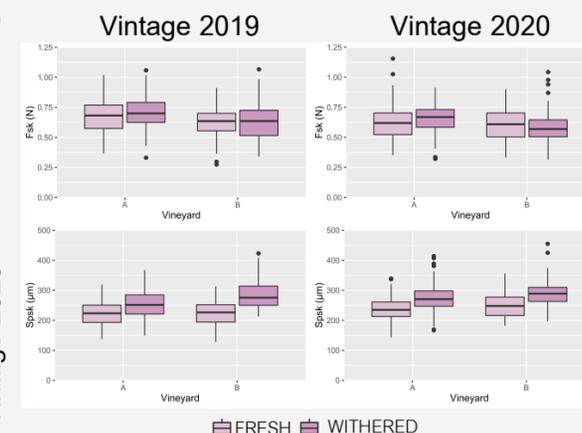


SKINS EXTRACTABLE ANTHOCYANINS



Skin extractable anthocyanins experienced a distinct trend for the two vineyards studied. The grape skins mechanical properties may have influenced this aspect, as previously demonstrated [5].

VALUES OF SKINS MECHANICAL PROPERTIES



HIGHER BERRY SKIN MAXIMUM BREAK FORCE (Fsk), LOWER SKIN THICKNESS (Spsk) → EASIER DISSOLUTION OF PHENOLS, PARTICULARLY FOR ANTHOCYANINS

5. ACKNOWLEDGEMENTS

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6. REFERENCES

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