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ILLUMINATION EFFECT ON NORISOPRENOID AND CAROTENOID PROFILE IN TANNAT GRAPES

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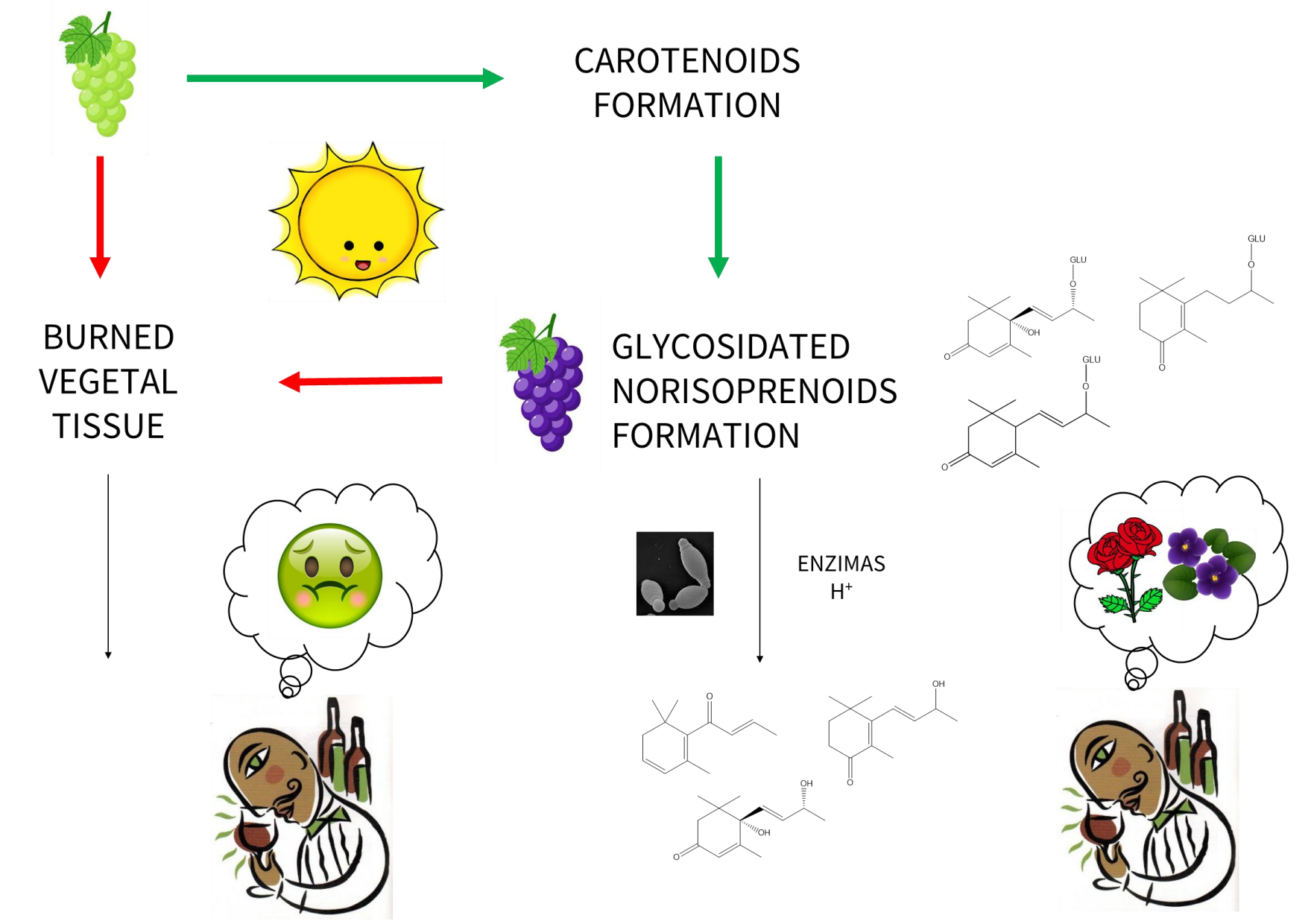
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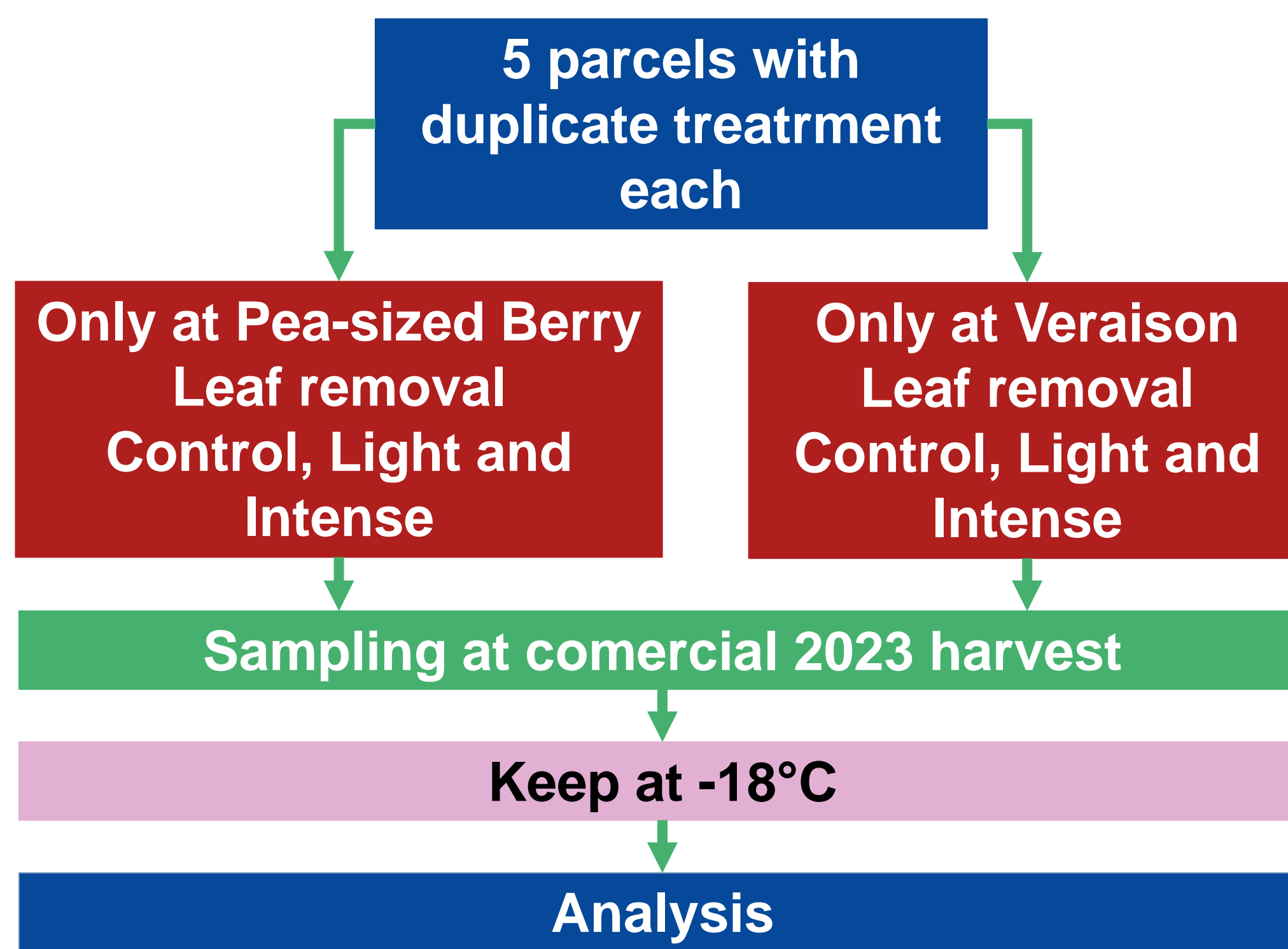
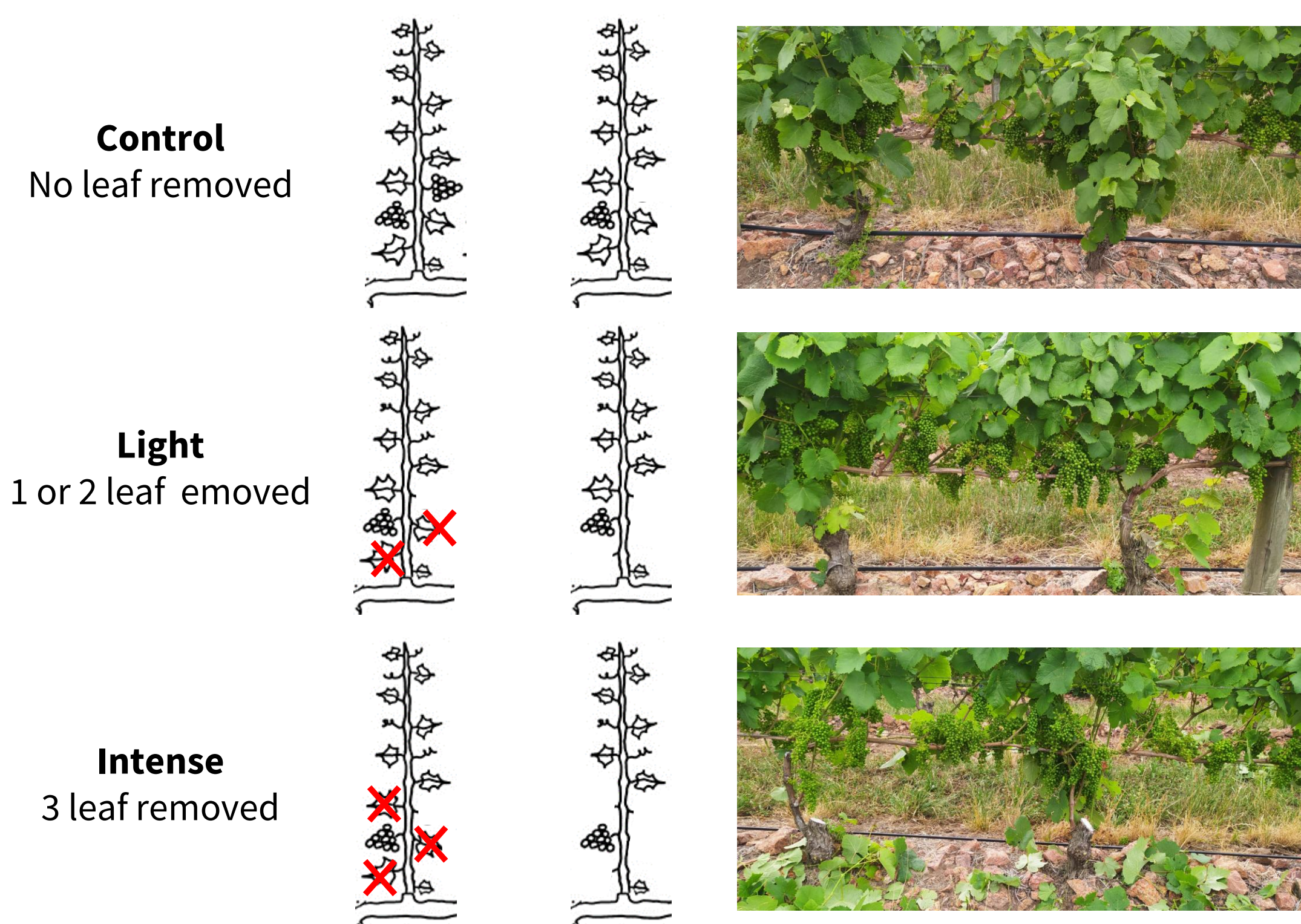
INTRODUCTION

In recent years there has been much interest in studying the contribution of carotenoid degradation products such as norisoprenoids to wine aroma, since they are associated with pleasant aroma descriptors and very low olfactory perception thresholds. Proper management of sunlight on the crop is part of the success in obtaining quality wines. It has been widely demonstrated that leaf removal increases the concentration of carotenoids and norisoprenoids in the grapes, but in certain cases the increased exposure to sunlight leads to an increase in

temperature that generates irreversible burn damage and is counterproductive for the desired objective. This study tries to study what happens during grape ripening. Give more sunlight to bunches: increases norisoprenoid content or plant tissues will be burned by temperature effect? Other compounds are affected? What happens with anthocyanins? With Yeast Assimilable Nitrogen? The effect of leaf removal has not been studied in Uruguayan flag variety Tannat which can give some response about climatic change effect on grapes.

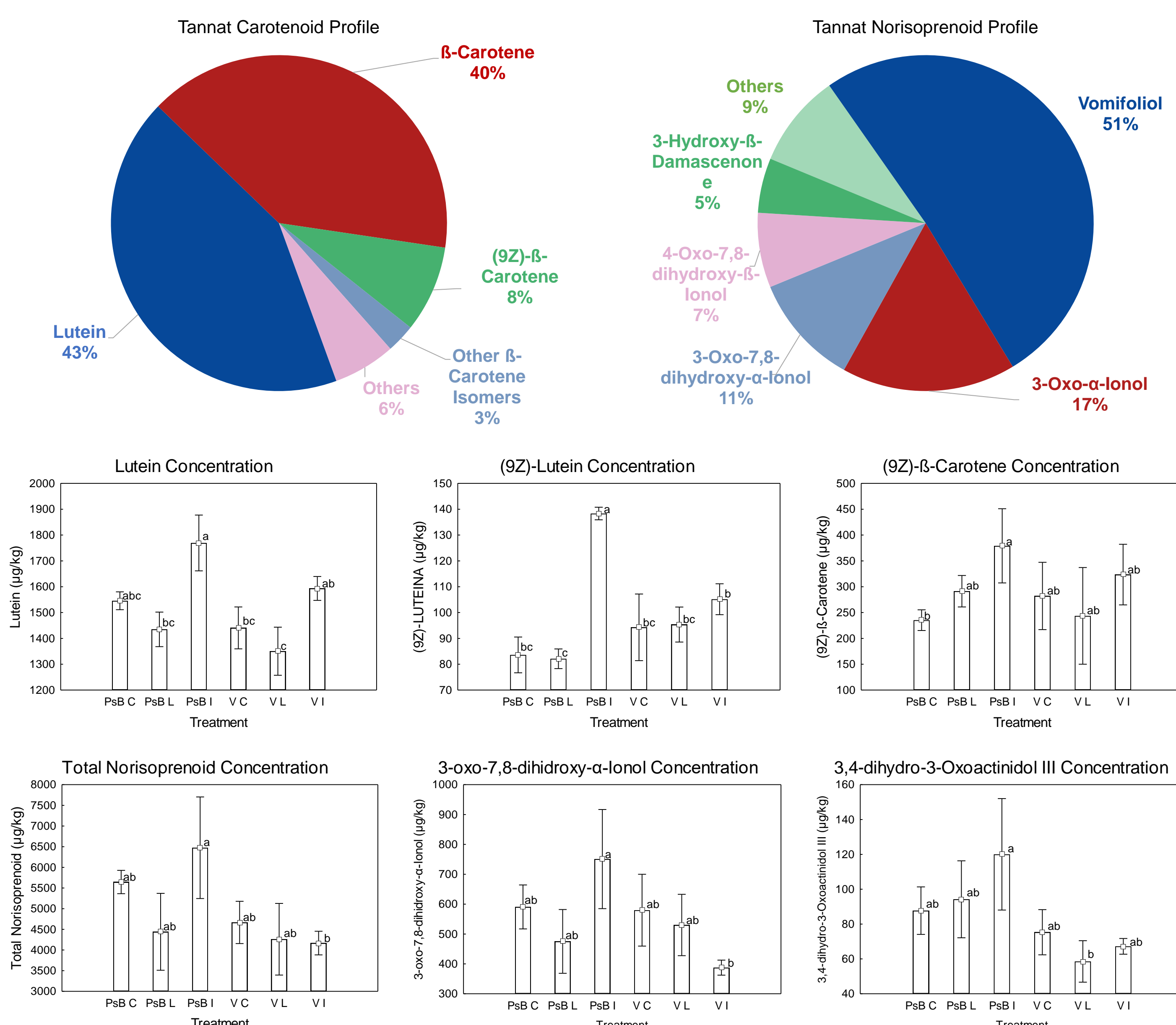


METHODOLOGY



- Immediate analysis (pH, Sugar, Total Acidity, Tartaric Acid, Malic Acid, alpha-Amino, Ammonia, YAN)
- HPLC-DAD Carotenoids analysis
- GC-MS Glicosidated precursors (Norisoprenoids, Terpenes, Phenols and C6 compounds)
- Total Anthocyanins
- Extractable Anthocyanins
- Total Polyphenol Index

RESULTS



PsB C: Pea-sized Berry Control, PsB L: Pea-sized Berry Light, PsB I: Pea-sized Berry Intense, V C: Veraison Control, V L: Veraison Light, V I: Veraison Intense. Whiskers show standard error of each mean. Different letter indicates significant differences between treatments analyzed with LSD Fisher test ($p < 0,05$).

CONCLUSIONS

Carotenoid and norisoprenoid concentration and profile are influenced by leaf removal moment and intensity. Leaf removal does not impact to individual carotenoids or norisoprenoids in the same way. Some are affected by moment, others by intensity and other by both. Lutein and (9Z)-β-Carotene concentration are enhanced by leaf remove intensity, non-identified β-Carotene isomer and (9Z)-Lutein concentration are enhanced by the interactive of both, leaf removal moment and intensity. Individuals norisoprenoid does not show a clear tendency except 3-oxo-7,8-dihydroxy-α-Ionol which increases if an intense leaf removal are made during Pea-sized Berry. Norisoprenoid sum are enhanced if leaf remove is made during Pea-size berry moment. This study shows only 2023 vintage, more vintages are needed to be a more reliable study about illumination effect on aromatic precursors compound on Tannat grapes.

ACKNOWLEDGEMENTS



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