

TRACEABILITY AND QUALITY ASSESSMENT OF WINE CORK STOPPERS USING VOLATILE FRACTION ANALYSED BY SPME-GC-MS



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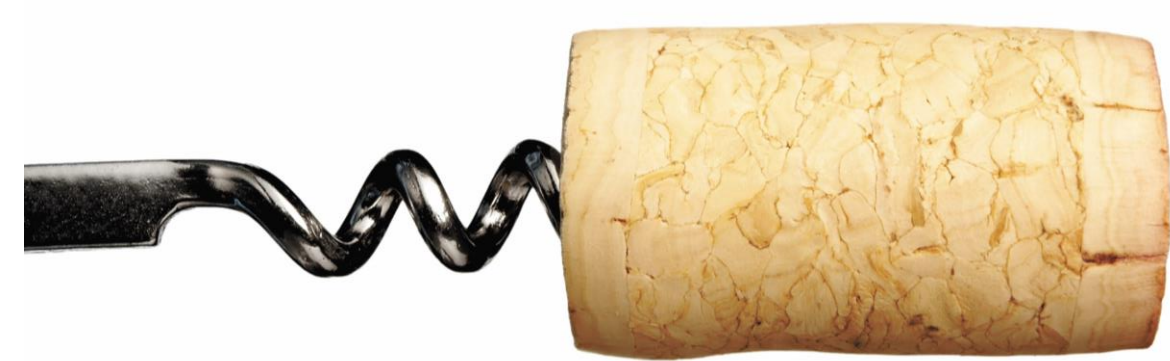
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INTRODUCTION

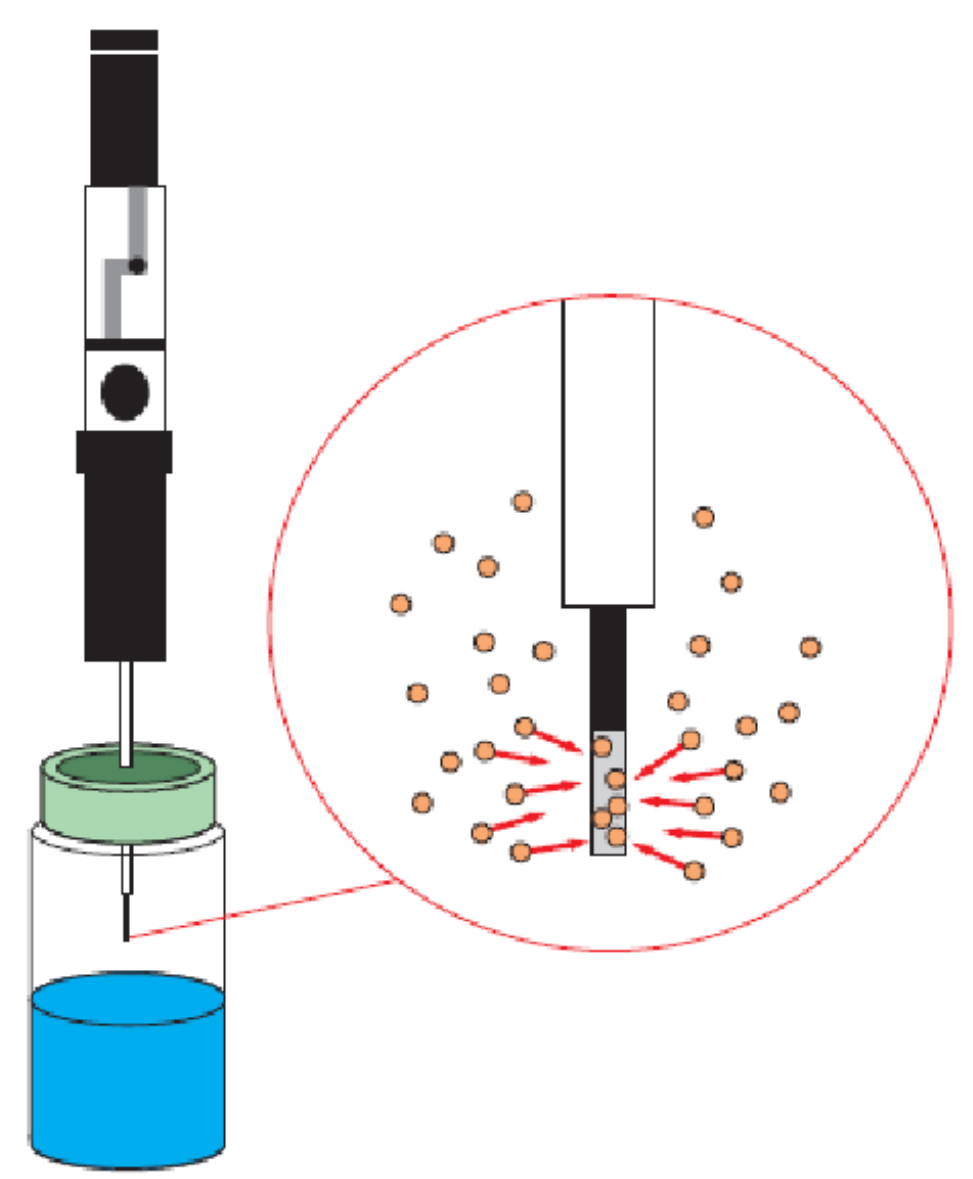
Nowadays, the natural cork stopper remains the chosen closure for bottling quality wines, having an important influence in economy. Quality and traceability are difficult to certificate in cork, being the physical-chemical characterization a very useful tool when establishing these parameters. The volatile fraction of cork is made up of a high number of compounds that, even in small concentrations, can influence the final aroma of the wine. These compounds come from the cork sheets used to make the stoppers and, therefore, can be good indicators of their origin.



MATERIAL & METHODS

	Origin	Quality (visual level)
NAT	1	Second
FLW	1	Flower
JVA	2	Extra
JVB	2	First
PRG	3	Third

Method used is SMPE-GC-MS



Objective → establish differences between corks of different origins and qualities by studying their volatile fraction by SMPE-GC-MS.

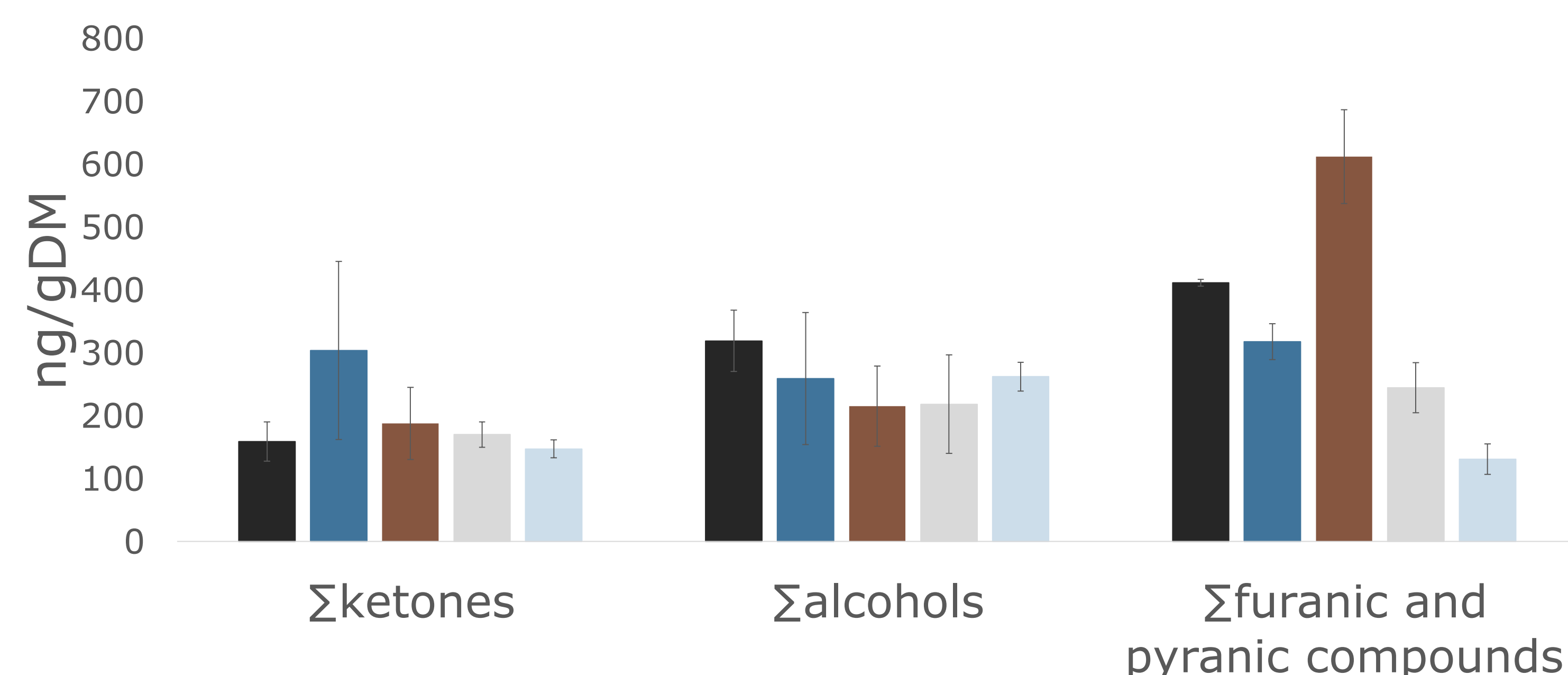
RESULTS

A total of 140 volatile compounds from natural cork stoppers of different qualities and origins have been identified, using a fast and sensitive technique such as SPME-GC-MS.

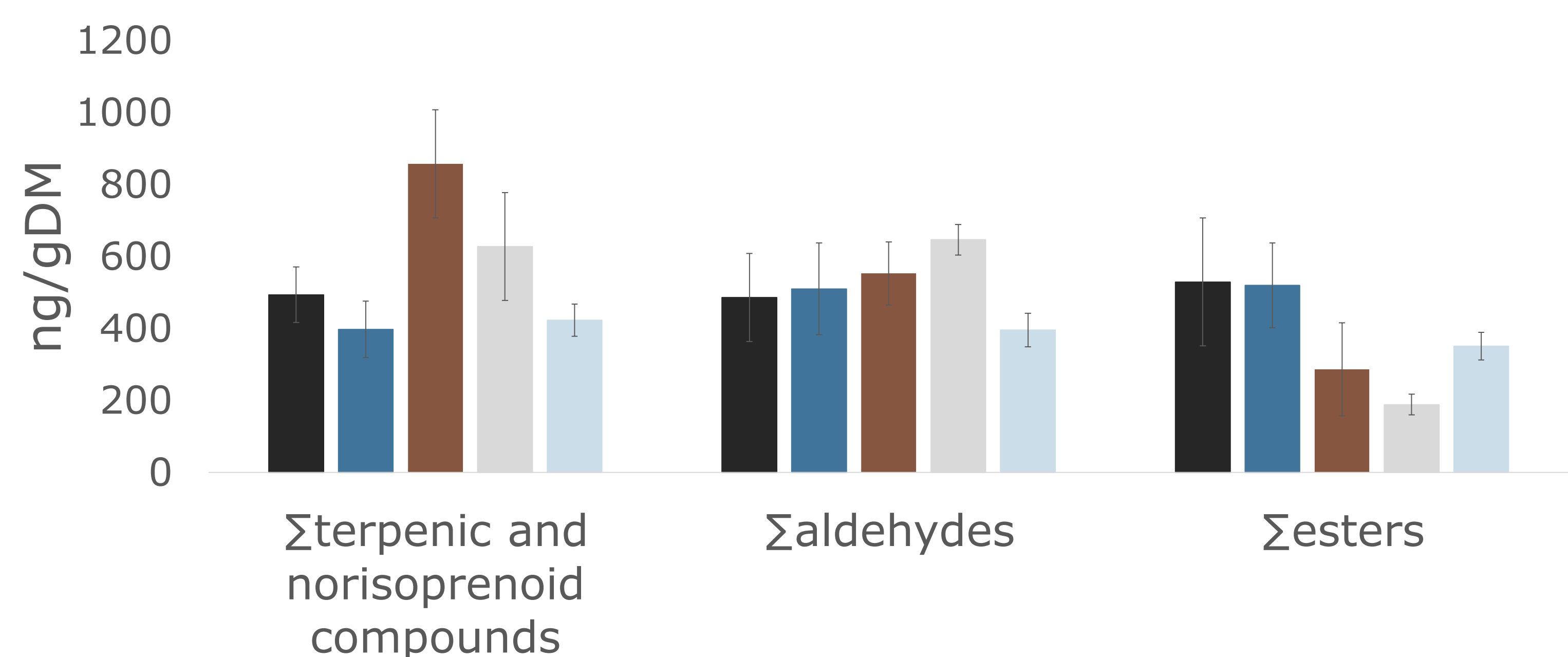
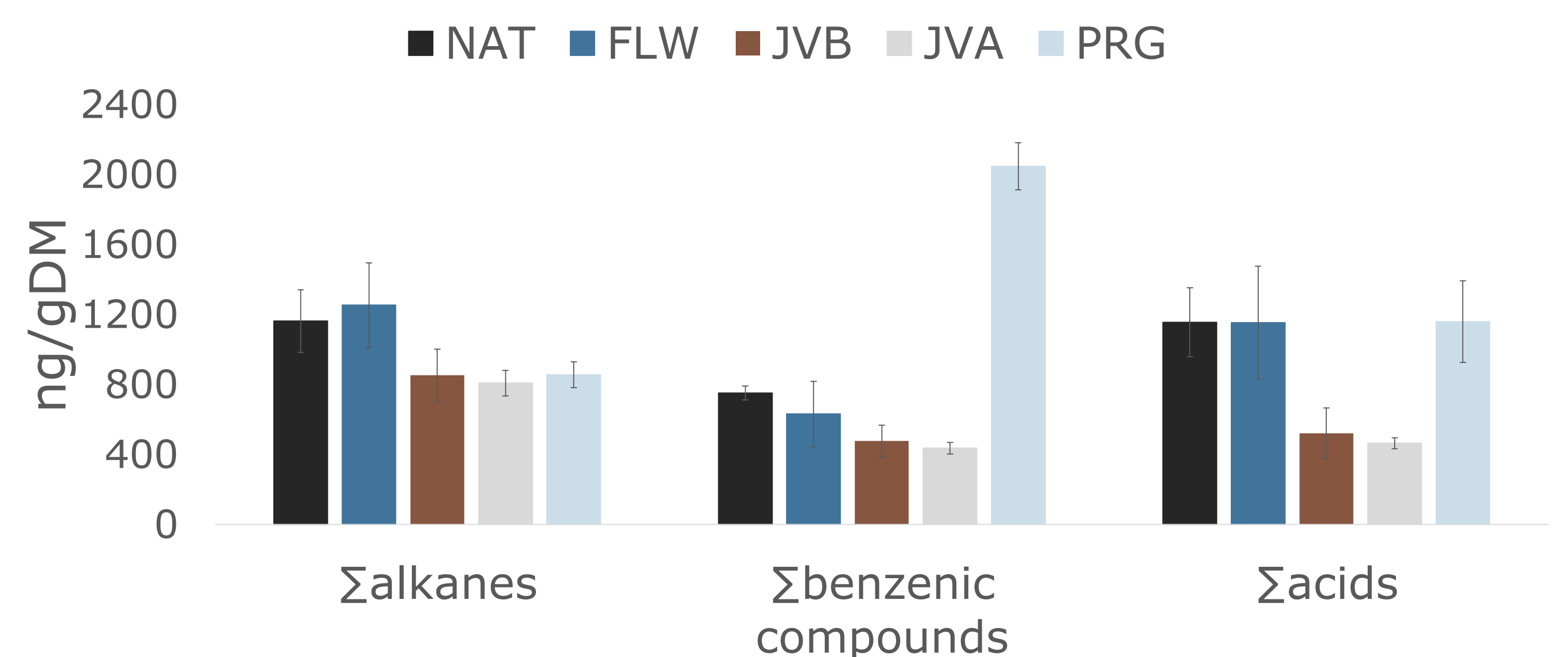
- ✓ PRG was rich in benzenic compounds.
- ✓ JVA and JVB (same origin, different visual quality) had lower amounts of acids.

- ✓ Both JVA and JVB were rich in terpenic and norisoprenoid compounds, mainly JVB, and these two had lower amounts of esters.

- ✓ Esters, in addition to acids, were correlated with origin.



- ✓ Ketones were superior in FLW.
- ✓ No differences were found in alcohols between samples.
- ✓ Furanic and pyranic compounds were the chemical family with more differences between corks.



CONCLUSIONS

The analysis of the volatile fraction of corks by SMPE-GC-MS is an useful and quick tool to establish differences between stoppers of different origins and qualities, and it could facilitate the monitoring of its traceability.

ACKNOWLEDGEMENTS

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