

4100-OE-SENSORY PROFILE OF RIBERA DEL DUERO RED WINES: A MULTIVARIATE CHARACTERIZATION

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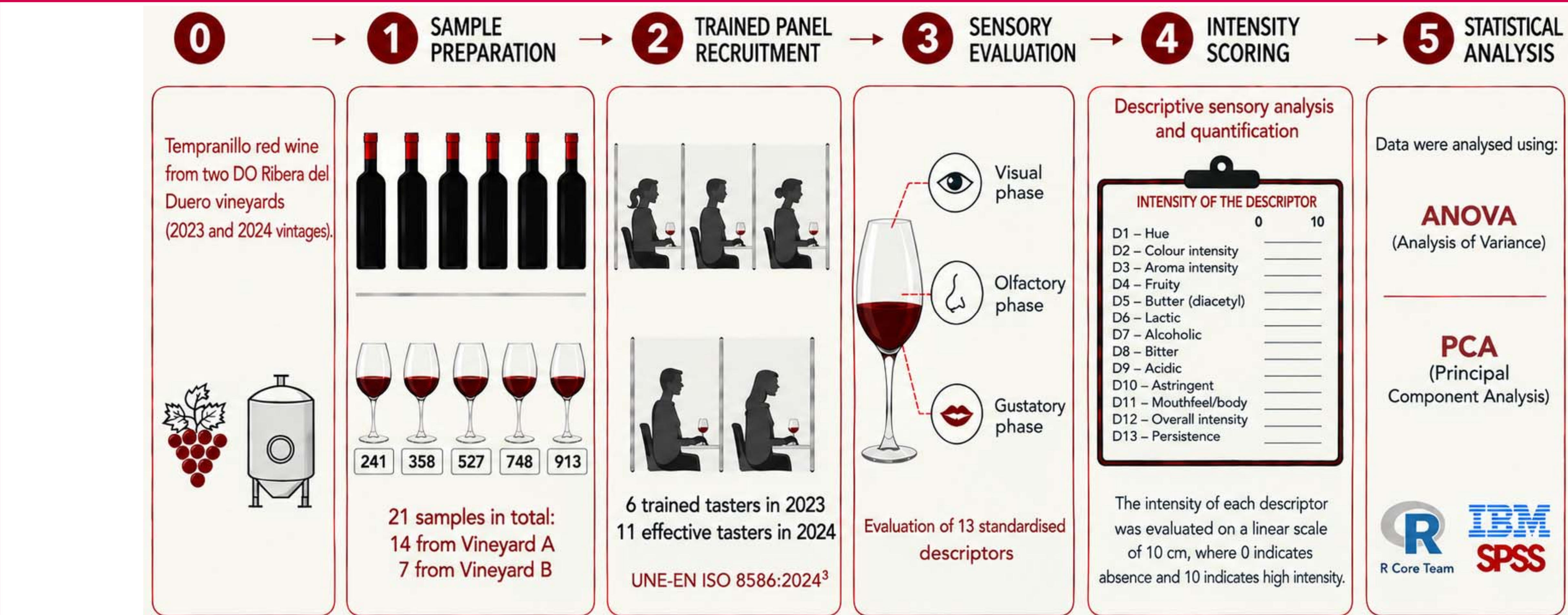
INTRODUCTION

The sensory profile of red wines results from a complex interaction between their volatile and non-volatile compounds, which determine the overall perception of their organoleptic properties⁽¹⁾. The variability of these properties is influenced by factors such as the climatic conditions of each vintage and the winemaking practices employed by individual wineries, ultimately determining the typicity, evolution, and homogeneity of wines within the same wine-growing region⁽²⁾.

OBJETIVE

To characterize the sensory profile of red wines from two wineries within the Ribera del Duero Designation of Origin, Spain, corresponding to the 2023 and 2024 vintages.

METHODOLOGY



RESULTS

2023 Vintage

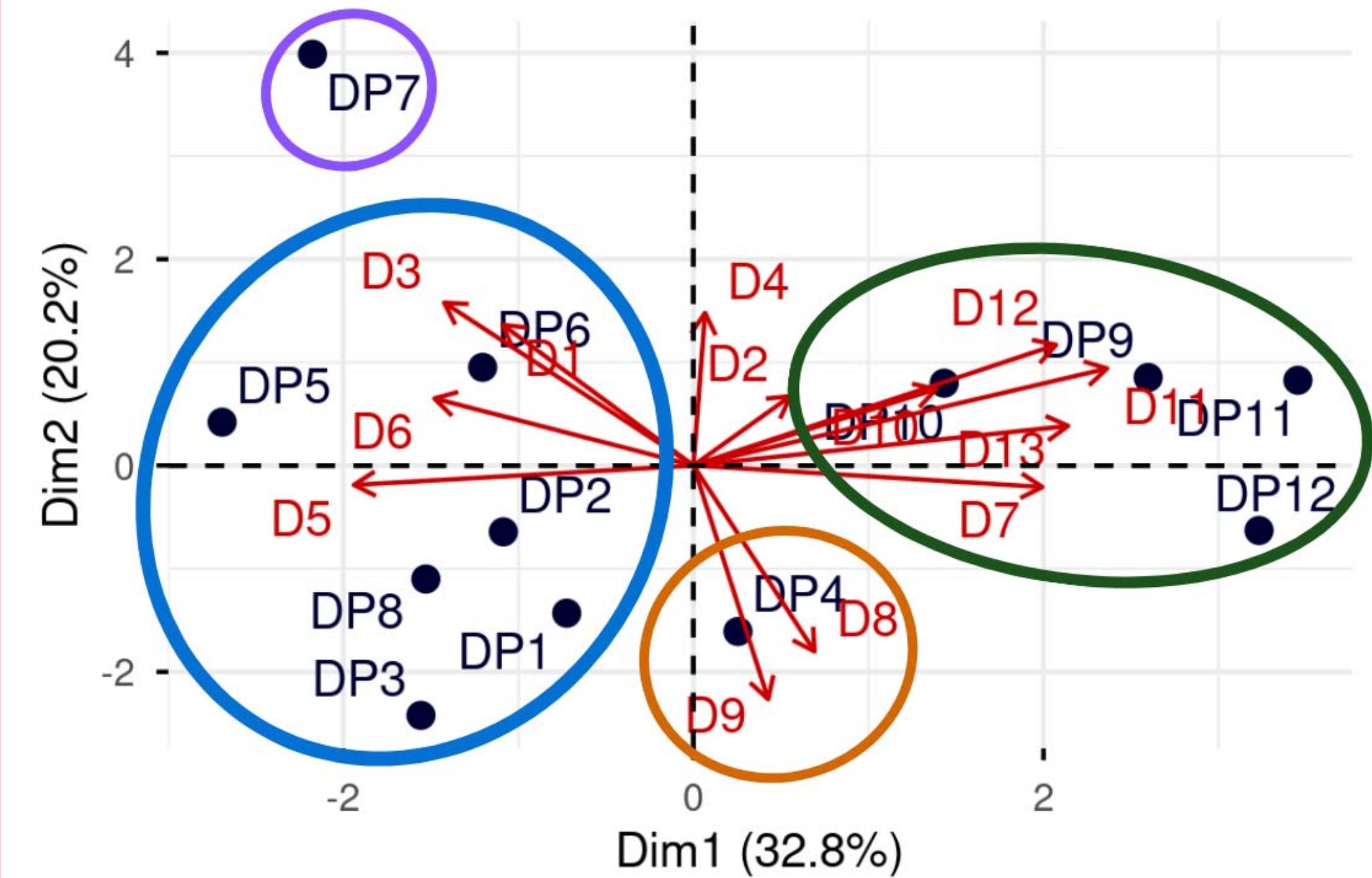


Figure 1: PCA of the samples from Winery A, 2023 vintage.

In Winery A, 2023 vintage, two distinct groups of samples were clearly differentiated: wines associated with visual and olfactory attributes, and wines showing greater intensity in taste descriptors.

- DP1, DP2, DP3, DP5, DP6, and DP8, characterized by D1, D3, D5, and D6.
- DP9, DP10, DP11, and DP12, showing high intensity in D7, D10, D11, D12, and D13.
- DP7, isolated and distant from most of the attributes.
- DP4, associated with D8 and D9.

2024 Vintage

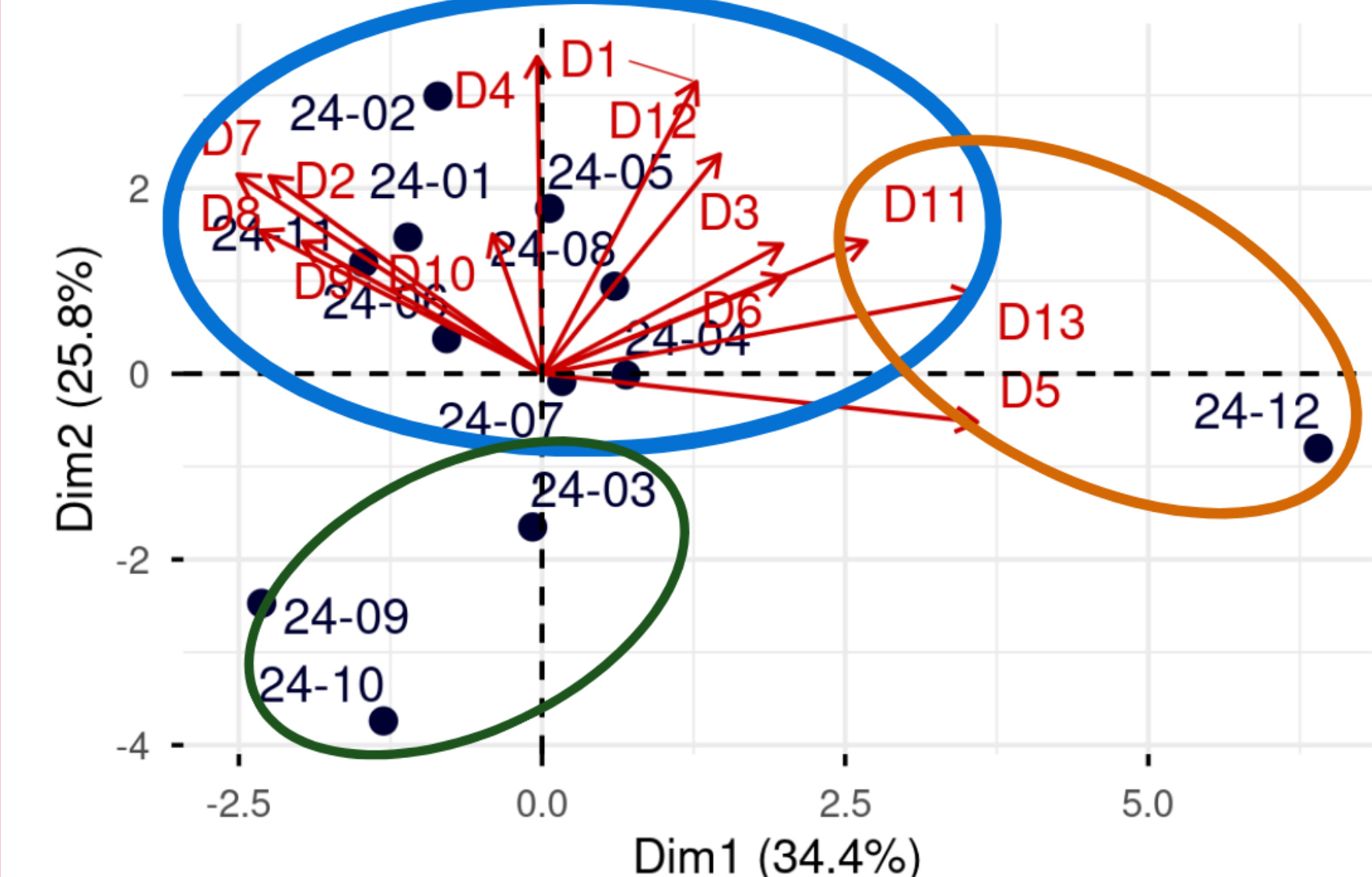


Figure 3: PCA of the samples from Winery A, 2024 vintage.

In Winery A, 2024 vintage, greater homogeneity was observed among most of the wines.

- 24-01, 24-02, 24-05, 24-06, 24-08, and 24-11, showing a highly homogeneous sensory profile. Wine 24-02 was slightly separated from the group, showing higher intensity in D1 and D4.
- 24-12, showing higher intensities in D5, D11, and D13.
- 24-09 and 24-10, and to a lesser extent 24-03, were isolated in the opposite direction to most descriptors, showing lower overall intensity across the thirteen evaluated attributes.

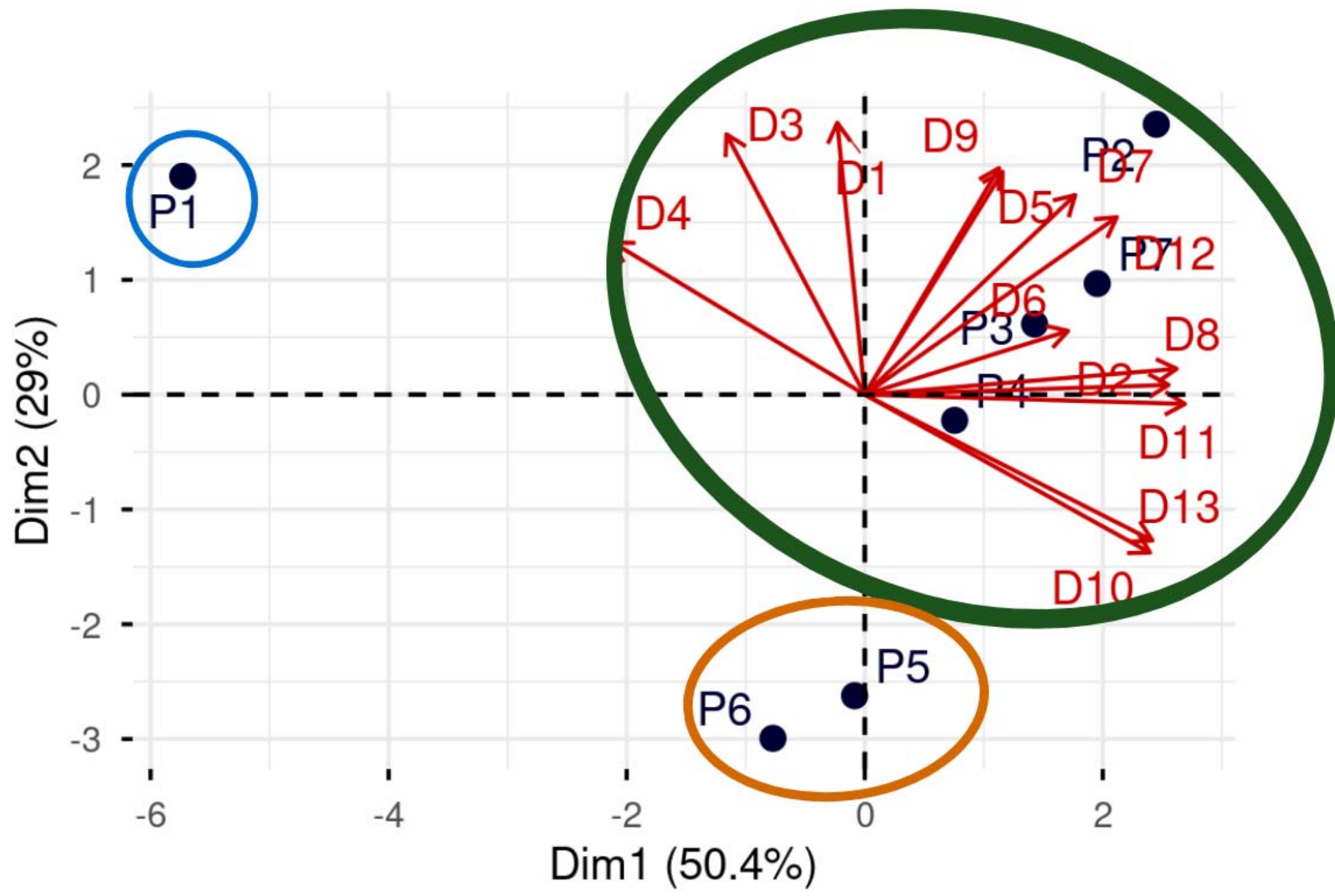


Figure 2: PCA of the samples from Winery B, 2023 vintage.

In Winery B, 2023 vintage, a main, more homogeneous group was identified, showing high overall intensity across most descriptors.

- P2, P3, P4, and P7, showing greater intensity in almost all evaluated attributes, except D1, D3, and D4.
- P1, isolated at the left end of the plot.
- P5 and P6, forming an isolated subgroup in the lower region.

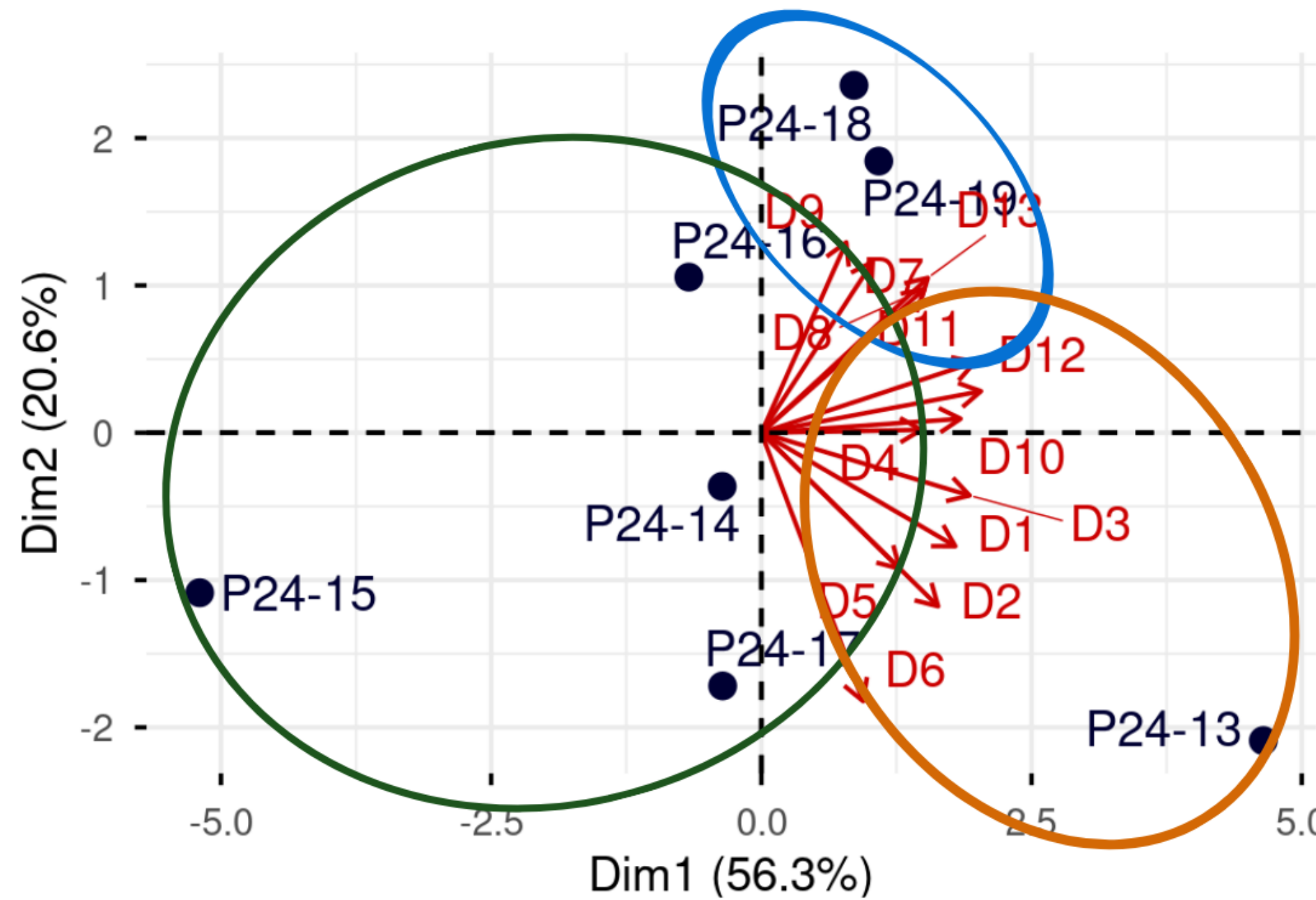


Figure 4: PCA of the samples from Winery B, 2024 vintage.

In Winery B, 2024 vintage, more dispersed sensory profiles were observed, with a clear separation into two styles: wines characterized by visual and olfactory attributes versus wines characterized by taste-related attributes. Other samples were associated with bitterness and acidity.

- P24-14, P24-15, P24-16, and P24-17, clearly separated from all other samples.
- P24-18 and P24-19, showing greater intensity in mouthfeel-related attributes (D7, D8, D9, D11, and D13).
- P24-13, characterized by D1 and D2 (visual); D3, D5, and D6 (olfactory); and D10 and D12 (taste-related).

Descriptor coding:	
D1 – Hue	
D2 – Colour intensity	
D3 – Aroma intensity	
D4 – Fruity	
D5 – Butter (diacetyl)	
D6 – Lactic	
D7 – Alcoholic	
D8 – Bitter	
D9 – Acidic	
D10 – Astringent	
D11 – Mouthfeel/body	
D12 – Overall intensity	
D13 – Persistence	

CONCLUSION

The sensory profile of the wines is significantly influenced by two main factors: vintage variability and the winemaking practices and distinctive characteristics of each winery.

REFERENCES

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