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The language of tannins: how winemakers understand and use tannin terminology

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Tannin descriptors are widely used by wine professionals to communicate wine quality, structure, and style. However, many terms lack shared definitions and are interpreted differently across experts. This study explored how winemakers conceptualize tannins by analyzing the vocabulary they use, the perceptual dimensions underlying tannin descriptors, and the semantic relationships that structure this specialized language.

Understanding the language of tannins

Tannin perception is a key component of red wine quality. Beyond astringency, tannins contribute to sensations related to texture, body, integration, persistence, and mouthfeel evolution. To describe these perceptions, wine professionals use a rich vocabulary including terms such as *silky, green, drying, aggressive, round,* or *elegant* tannin[1 2 3].

Despite their widespread use, many descriptors remain ambiguous and lack clearly defined meanings. The same term may be interpreted differently depending on professional experience or winemaking context. This variability complicates communication, sensory training, and the interpretation of wine descriptions.

This study aimed to identify the vocabulary used by wine experts, characterize the perceptual dimensions underlying tannin descriptors, and model the semantic structure of tannin language.

Building a tannin lexicon

The study followed two complementary phases. In the first phase, 14 winemakers from the Rioja DOCa freely described nine red wines selected to exhibit markedly different tannin profiles. These spontaneous descriptions yielded an initial lexicon of 64 tannin-related terms (Figure 1).

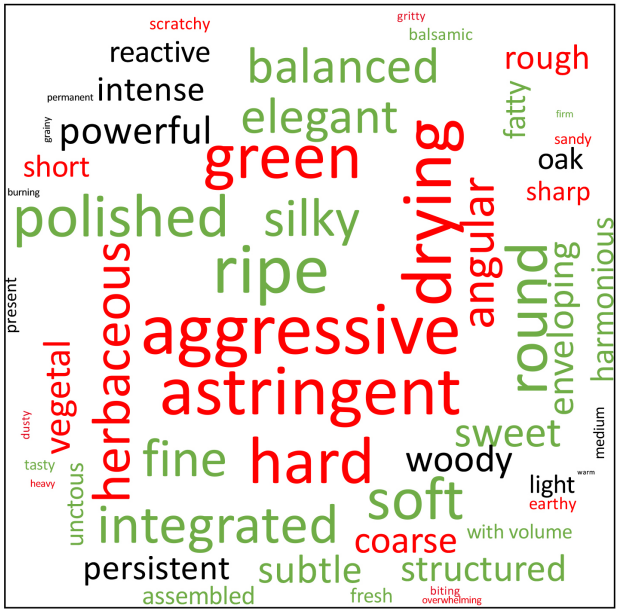


FIGURE 1. Diversity of terms used to describe tannins in red wines. Size represents frequency of use, while color indicates their association with quality (green: positive, red: negative, black: ambivalent).

In a second phase, twenty-nine wine professionals from different Spanish wine regions participated in individual in-depth interviews. Participants discussed the meaning, use, synonymy, and qualitative value of each descriptor. Interview transcripts were analyzed using thematic coding and semantic modelling techniques, grouping descriptors into conceptual dimensions and representing them through a semantic network.

A shared lexical core and a more variable periphery

Although tannin vocabulary was highly diverse, a small group of descriptors was widely shared among professionals. The most frequently cited terms were *aggressive, astringent, drying, green, hard,* and *ripe* tannins.

Interestingly, five of these six descriptors carried predominantly negative connotations. In contrast, descriptors associated with positive quality, such as *silky, polished, integrated, round,* and *elegant* tannin, showed greater variability in both usage and meaning.

These results suggest that tannin language is organized around a relatively stable lexical core surrounded by a more heterogeneous semantic periphery shaped by individual interpretation.

The seven dimensions of tannin language

Semantic analysis identified seven conceptual dimensions that organize tannin vocabulary:

Texture – tactile granularity, ranging from *rough* and *coarse* to *silky* and *polished* tannin.

Integration – degree of balance and cohesion with the wine matrix.

Intensity – structural weight and persistence of tannins in the mouth.

Maturity – phenolic ripeness, from *green* to *ripe* tannins.

Physiological Response – related to sensations such as dryness, contraction, and salivation.

Hedonic Evaluation – perceived quality, including descriptors such as *elegant* or *aggressive* tannin.

Origin – tannins associated with oak or barrel ageing.

Together, these dimensions demonstrate that tannin language extends beyond tactile perception and integrates structural, physiological, hedonic, and technological aspects of wine evaluation.

Table 1 presents selected expert-derived definitions of common tannin descriptors discussed during the interviews. These examples illustrate the complexity of tannin terminology and how experts interpret these descriptors in practice.

The descriptors presented in Table 1 are illustrative examples. A complete glossary of tannin descriptors and their expert-derived definitions is available in the original research article[4].

A semantic network of winemaking vocabulary

One of the most innovative aspects of this study was the construction of a semantic network of tannin language. This network made it possible to visualize how different descriptors are interconnected within professional discourse. Semantic network analysis of the interview data (Figure 2)

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TABLE 1. Examples of definitions derived from expert descriptions of common tannin descriptors.

Descriptor	Dimension	Definition based on expert descriptions
Silky tannin	Texture	A tannin perceived with low oral friction and a continuous mouthfeel.
Green tannin	Maturity	A tannin perceived as insufficiently mature, associated with increased oral roughness, dryness and persistence.
Drying tannin	Physiology	A tannin that reduces oral lubrication and produces a pronounced sensation of mouth dryness.
Balanced tannin	Integration	A tannin present in appropriate proportion to the wine's fruit, alcohol, and acidity components.
Aggressive tannin	Hedonic	A hard and dominant tannin perceived as unbalancing the overall wine structure.

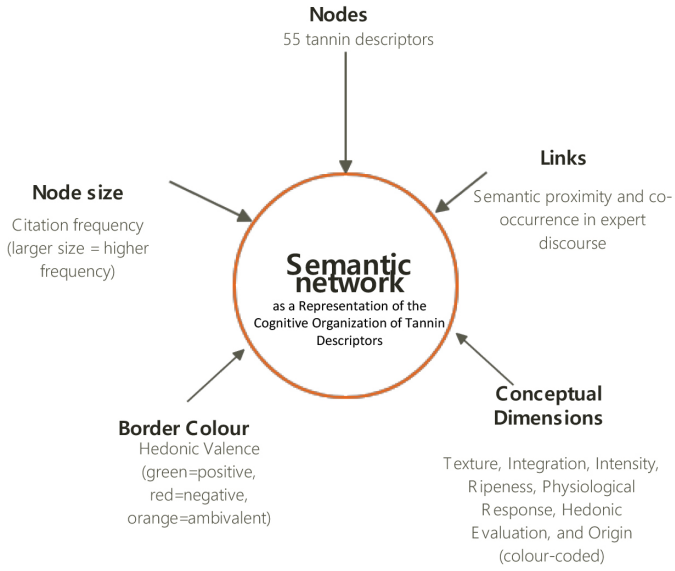


FIGURE 2. Interpretation Framework for the Semantic Network.

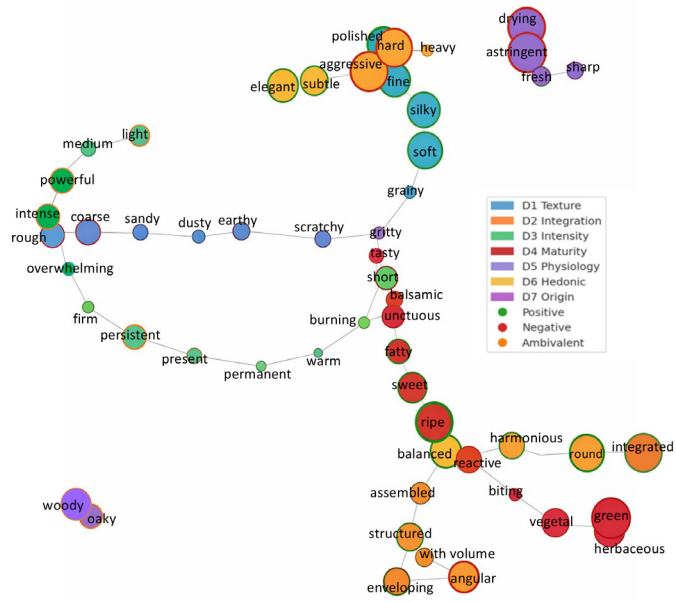


FIGURE 3. The Semantic Network: Cognitive Structure of Tannins. Revealing a Complex and Multidimensional Sensory System.

identified seven major conceptual dimensions (D1-D7) that structure tannin vocabulary (Figure 3).

The analysis revealed that Texture (D1), Intensity (D3), and Maturity (D4) function as the main organizing dimensions of tannin vocabulary. The remaining dimensions—Integration (D2), Physiological Response (D5), Hedonic Evaluation (D6), and Origin (D7)—are structured around these central domains and act as complementary dimensions. Dimensions are not independent categories: descriptors from different dimensions can be semantically connected, reflecting the multidimensional way in which experts conceptualize tannins. Importantly, a connection between two descriptors does not necessarily indicate similarity or shared hedonic valence, but rather semantic proximity or co-occurrence in expert discourse. Texture (D1) occupies a central position, connecting with Intensity (D3), Maturity (D4), and Hedonic Evaluation (D6). For example, *rough* and *intense*, *gritty* and *tasty*, and *fine* and *aggressive* show how tactile perceptions can link to structural, maturity-related, and hedonic concepts. Maturity (D4) is also connected to Integration (D2), with *ripe* and *reactive* linked to *balanced* and *harmonious* perceptions.

In the network, direct links indicate specific semantic associations between descriptors, whereas the spatial proximity of dimensions reflects their position within the overall conceptual structure. Thus, dimensions without direct links may nevertheless occupy neighboring areas of the semantic space. This is the case for Physiological Response (D5), which is positioned close to Texture (D1) and Hedonic Evaluation (D6), reflecting the relationship between oral sensations, tactile properties, and hedonic judgements. Origin (D7) forms a more distinct, peripheral cluster, but it is closer to Intensity (D3), Integration (D2), and Maturity (D4), suggesting that oak-related tannin descriptors are conceptually associated with structural, integration, and maturity-related aspects of tannin perception.

Conclusions and implications for winemaking practice

This study provides the first structured model of the vocabulary wine experts use to describe tannins. While a shared lexical core exists, many descriptors remain ambiguous and multidimensional.

Organizing tannin language into seven interacting perceptual dimensions and representing them through a semantic network reveals how tactile, structural, physiological, hedonic, and oenological concepts are interconnected in expert discourse.

This framework provides a basis for understanding how professionals conceptualize tannins and may support more consistent sensory training, technical communication, and quality assessment within the wine industry. It may also contribute to consumer research by helping translate expert tannin terminology into more accessible language and facilitating consumer education and communication about wine mouthfeel. ■

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Source: Sourced from the research article: "Understanding the meaning and structure of tannin descriptors employed by wine experts" (OENO One, 2026).

***Note:** The vocabulary was compiled by Spanish oenologists in Spanish.*

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