



Analysis of consumer habits related to dealcoholized wines in Dubrovnik–Neretva County

Iva Mračić Raič*, Romana Popović*, Mara Marić, Sanda Desnica

University of Dubrovnik, Department for Mediterranean Plants, Marka Marojice 4, 20000 Dubrovnik, Croatia

ARTICLE INFO

TYPE: Original scientific paper

<https://doi.org/10.17508/CJFST.2026.18.1.08>

*CORRESPONDENCE

Iva Mračić Raič

✉ iva.mracic@unidu.hr

Romana Popović

✉ romana.popovic@unidu.hr

ARTICLE HISTORY

Received: February 13, 2026

Accepted: April 20, 2026

CITATION

Mračić Raič I, Popović R, Marić M, Desnica S. Analysis of consumer habits related to dealcoholized wines in Dubrovnik–Neretva County. *Croatian Journal of Food Science and Technology* (2026) 18 (1) 99–112

KEYWORDS

dealcoholized wines; consumer perception; consumption habits; Dubrovnik–Neretva County; market trends

KEY CONTRIBUTION

The study provides the first systematic insight into the knowledge, attitudes, and consumer habits related to dealcoholized wines in Dubrovnik–Neretva County. It compared the attitudes and behaviours of residents and tourists, with primary emphasis on the local population, while differences observed among visitors were used for comparative purposes. Key motivations among participants from Dubrovnik–Neretva County include health concerns, avoiding alcohol, and driving, while major barriers are limited information, low availability, and concerns regarding sensory quality. The findings indicate that, although awareness and interest exist among the local population, acceptance remains moderate and requires further development, highlighting the importance of education, improved availability, and maintenance of sensory quality. Differences observed among tourists suggest higher levels of awareness and openness, providing additional context for understanding local consumer behaviour rather than representing the primary focus of the study.

ABSTRACT

The global market is experiencing growing demand for low- and non-alcoholic wines, driven by lifestyle changes, increasing health awareness, and rising interest in sustainable dietary habits. Although this trend is well developed internationally, in Croatia, and particularly in Dubrovnik–Neretva County, the perception and acceptance of dealcoholized wines are still at an early stage. This study investigates the determinants of consumer attitudes, knowledge, and consumption habits related to dealcoholized wines in Dubrovnik–Neretva County, as well as the extent to which local consumers differ from visitors, who often come from more developed markets. To this end, a consumer survey was conducted in Dubrovnik–Neretva County in 2025 to determine levels of awareness, consumption motivations, and barriers influencing acceptance of these products. This paper addresses a topic that has so far been rarely researched in Croatia, placing particular emphasis on the specific characteristics of Dubrovnik–Neretva County as a wine-growing region in the context of dealcoholized wines. The results indicate that local consumers approach dealcoholized wines cautiously and within a more traditional framework, with limited awareness and moderate willingness to purchase them. Differences observed among visitors suggest higher levels of awareness and openness, providing additional context for interpreting local consumer behaviour. The research confirms that a positive perception alone is insufficient to change consumption habits; key factors include product availability, opportunities for tasting, clear communication regarding the dealcoholization process and sensory quality, and the integration of such wines into the wider eno-gastronomic offer. From the perspective of Dubrovnik–Neretva County, the market potential of dealcoholized wines lies primarily in increasing awareness and acceptance among the local population, while insights from visitor behaviour may support the development of targeted strategies.



COPYRIGHT: © 2026 by the author(s). This is an open-access article distributed under the terms of the *Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)*.

Introduction

Wine is an alcoholic beverage obtained through the fermentation of grapes, during which yeasts convert grape sugars into ethanol. Dealcoholized wine is wine from which alcohol has been removed while aiming to preserve its aroma and flavour. Traditionally, according to European legislation in force until 2023, a beverage could only be labelled as wine if its alcohol content was not lower than 8.5% vol. However, following the implementation of Regulation (EU) No. 2117/2021, two additional categories of wine products were introduced: dealcoholized wine, with an ethanol content not higher than 0.5% vol, and partially dealcoholized wine, with an alcohol content between 0.5% vol and 8.5% vol (EU, 2021; Oro et al., 2025). Wine dealcoholization can be carried out at three stages of production, before, during, or after fermentation, using methods such as reducing fermentable sugars, controlling fermentation, or removing ethanol through membrane or thermal processes (Sam et al., 2021; Uspalenko et al., 2024). The most commonly used dealcoholization methods include osmotic distillation, reverse osmosis, pervaporation, vacuum distillation, and spinning cone column technology, as these can partially or completely reduce the alcohol content of wine and other beverages (< 0.5% vol) (Longo et al., 2017; Mangindaan et al., 2018; Sam et al., 2021; Uspalenko et al., 2024). The dealcoholization process may negatively affect both volatile and non-volatile chemical components of wine, thereby disrupting the complex balance responsible for aroma, taste, and mouthfeel, while excessive alcohol removal can result in unacceptable sensory characteristics and further compositional inconsistencies in the organoleptic profile (Lisanti et al., 2013; Akhtar et al., 2025a). On the other hand, dealcoholization may enhance the perception of freshness and acidity in wine, which is particularly important in warmer wine regions where high temperatures induce sugar accumulation in grapes and consequently higher alcohol content in wines. Wines with lower alcohol levels are often lighter and more refreshing, making them more suitable for everyday consumption and more versatile in gastronomic applications (Bucher et al., 2019; Bucher et al., 2020).

The consumption of low- or non-alcoholic wines is associated with a range of potential health benefits, including improved cardiovascular health, antioxidant effects, positive influences on gut microbiota, and possible antidiabetic properties. These effects are generally attributed to the presence of bioactive compounds, particularly polyphenols, which are retained even after dealcoholization, especially when technologies that maintain the wine's phenolic profile are applied (Silva, 2024). One of the most notable advantages of these wines is their potential positive impact on the cardiovascular system. Chiva-Blanch et al. (2012) demonstrated that, in individuals at increased risk of developing hypertension, consumption of dealcoholized red wine for four weeks significantly reduced systolic and diastolic blood pressure by 5.8 mmHg and 2.3 mmHg, respectively, while increasing plasma nitric oxide levels. This suggests that alcohol itself may attenuate the blood pressure-lowering effects of red wine polyphenols. Given that even modest reductions in blood pressure can substantially decrease the risk of coronary heart disease and stroke, dealcoholized red wine may represent a promising strategy for hypertension prevention. In general, dealcoholized wine contains fewer calories than regular wine due to the removal of alcohol. For example, the energy provided by a 100 mL serving can be estimated at 16 kcal for a non-alcoholic wine sweetened with 40 g/L of sugar, compared to 72 kcal for a dry wine with 13% vol alcohol (Podworny et al., 2024).

Growing awareness of the negative health effects of alcohol, excess calories, and dietary additives has led to changes in consumer habits, with an increasing number of consumers showing interest in low-alcohol or completely non-alcoholic wines (Afonso et al., 2024; Catarino and Mendes, 2011). The literature indicates that health considerations play an increasingly important role in consumer food and

wine choices (Lähteenmäki, 2004; Lockshin and Corsi, 2012; Stockley et al., 2017). Alcohol consumption is associated with health risks, the magnitude of which depends on intake level, type of beverage, and individual drinking and dietary habits (Hrelia et al., 2023). As a result, non-alcoholic wine is gaining popularity as an alternative among consumers, with the most common motivations being health and dietary reasons, pregnancy, medical treatments, but also social factors such as responsible driving, professional obligations, and religious beliefs (Bucher et al., 2018.).

From an economic perspective, the global market for low-alcohol and non-alcoholic wines is experiencing strong growth, indicating significant potential for further development and diversification within the wine industry. Such products allow producers to expand their market reach and reduce reliance on traditional alcoholic wines, particularly in the context of increasingly strict regulations and shifting consumer habits (Hoffmann and Surry, 2013; Kucherenko and Uspalenko, 2023). The advancement of dealcoholization technologies further enhances the competitiveness of these products, enabling them to meet high sensory standards and appeal to a broader consumer base (Silva, 2024). Their success depends on perceived quality, alignment with consumer preferences, and effective marketing. Integration into eno-gastronomic experiences links them to tradition while also aligning with contemporary trends in health and sustainability (Afonso et al., 2025).

Although the perception of low- and non-alcoholic wines in Croatia is still limited, experiences from other markets indicate the potential for the successful positioning of these products as high-quality offerings at premium price points. According to the International Wines and Spirits Research (IWSR), in the ten largest markets for non-alcoholic and low-alcohol beverages (Australia, Brazil, Canada, France, Germany, Japan, South Africa, Spain, the UK, and the USA), the volume of the non-alcoholic segment is expected to grow by 12% between 2023 and 2027. These markets together account for 75% of global consumption of low- and non-alcoholic beverages (Dingwall, 2021; IWSR, 2024). The UK and the USA are among the most dynamic markets for non-alcoholic beverages, showing pronounced annual growth rates. For instance, the non-alcoholic wine market in the USA is experiencing significant momentum, with a projected compound annual growth rate (CAGR) of 9.6% between 2021 and 2031. Meanwhile, Germany and Spain lead in terms of development and market size for non-alcoholic wines, with the German market expected to grow approximately 9% annually between 2021 and 2025 (Schulz et al., 2023).

Consumer interest in such wines is gradually increasing in Croatia, and more wineries are exploring their production, although concrete data on the extent of these activities are not yet available. The research area, Dubrovnik–Neretva County, is part of the Croatian wine-growing subregion Central and Southern Dalmatia, known for its favourable climate and long-standing tradition. According to available official data, by the end of 2023, Dubrovnik–Neretva County had a total of 1,895 hectares under vine (APRRR, 2024). Wine tourism represents a combination of wine production and enjoyment with a tourist experience, in which wine, wine regions, and winemakers play a central role. In the context of gastronomy and tourism, wine is an essential element of an authentic destination experience. Therefore, the main goal of developing wine tourism in Croatia, and particularly in Dubrovnik–Neretva County, is to strengthen its role and recognition within the overall tourist offering through the valorisation of local wine culture and the region's eno-gastronomic identity (Maletić et al., 2012).

The study was motivated by the need for a better understanding of consumer attitudes, knowledge and habits regarding dealcoholized wines in Dubrovnik–Neretva County. Despite the global increase in interest in low-calorie and non-alcoholic alternatives, the local market and consumer habits of such products have so far been insufficiently explored. This research aims to present the results of a survey on consumer knowledge, attitudes, and consumption habits related to dealcoholized wines in

Dubrovnik–Neretva County, with particular emphasis on the level of consumer awareness, preferences, motivation for consuming these products, and the barriers affecting their acceptance in the local market.

Materials and methods

For purpose of this research, a survey was conducted to collect data on the habits, attitudes, and level of awareness of consumers, both residents and tourist visitors to Dubrovnik–Neretva County, concerning dealcoholized wines. The study took the form of a quantitative analysis conducted through a structured questionnaire containing a combination of closed- and open-ended questions and was prepared in both Croatian and English. Participants were selected using a stratified random sampling method, and participation was voluntary and anonymous. Data were collected from the 15th of August to the 1st of November 2025 through an online survey administered via the Google Forms platform.

The questionnaire was divided into six thematic sections:

- General sociodemographic data,
- Knowledge and attitudes toward dealcoholized wines,
- Wine consumption habits,
- Market potential and purchase opinions,
- Health and nutritional values,
- Sensory properties and production technology.

At the end of the questionnaire, an open-ended question allowed respondents to express their own opinions, comments, and suggestions.

Completed anonymous surveys were analysed using descriptive statistics, with emphasis on grouping data according to the thematic sections.

Results and discussion

General characteristics of the participants

A total of 207 participants aged 18 years and older took part in the survey, of whom 59.0% were female, and 41.0% were male. Concerning the age groups, the largest proportion of participants was between 36 and 45 years of age, while the smallest proportion belonged to the group older than 65 years (Figure 2).

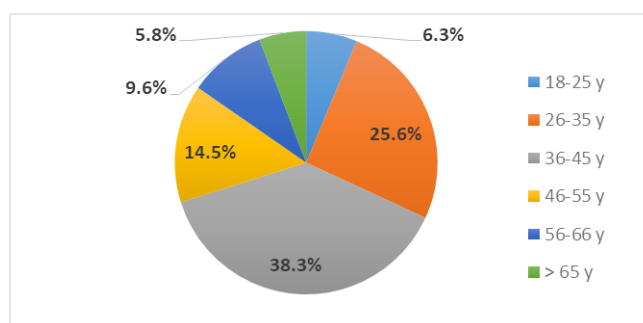


Figure 2. Age structure of the participants

Participants also differed according to their place of residence. Residents from Dubrovnik–Neretva County accounted for 51.2% of the sample, while 48.8% of participants were tourists or visitors. Among visitors, considerable geographical diversity was observed, with respondents originating from a total of

15 foreign countries as well as from the other regions of Croatia. The most represented groups were participants from Germany and Croatia (outside the country), each accounting for 19.8%, followed by those from the United Kingdom (12.9%), Italy and Bosnia and Herzegovina (7.9% each), and Spain (5.9%). Other countries with smaller but noteworthy proportions included Greece, Poland, Slovenia, the United States, Portugal, Austria, Sweden, Colombia, and Mexico. Although participants from multiple countries were included, their role in this study was primarily comparative, providing additional context for interpreting the attitudes of residents from Dubrovnik–Neretva County (Figure 3).

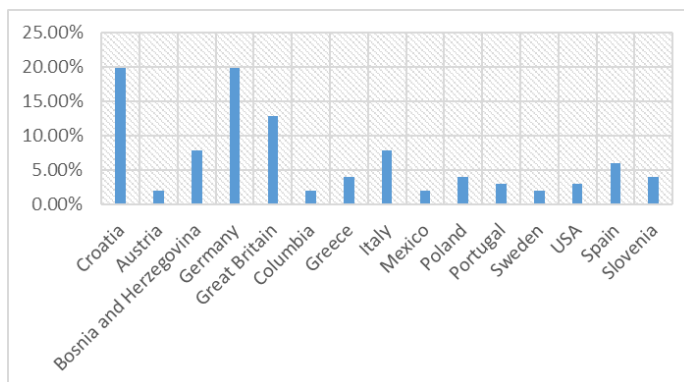


Figure 3. Countries of origin of tourist participants

Wine consumption habits

In response to the question regarding the frequency of wine consumption, most respondents from Dubrovnik–Neretva County reported drinking wine occasionally (37.8%). In comparison, tourist visitors most frequently indicated consuming several times a week (37.5%), followed by occasional consumption (32.8%) (Figure 4).

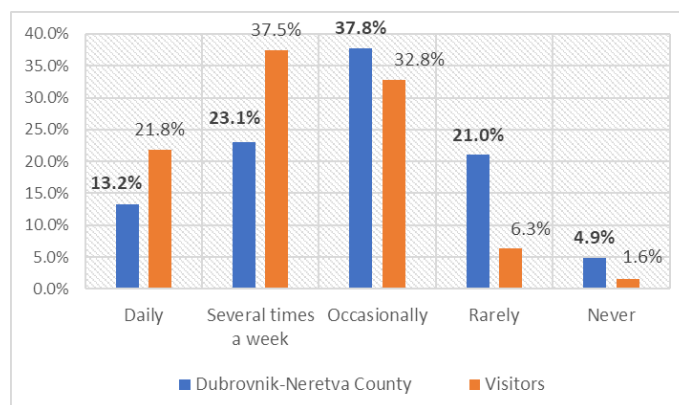


Figure 4. Frequency of wine consumption

When selecting a type of wine, participants from Dubrovnik–Neretva County most frequently preferred white wines (48%). In comparison, tourist visitors most commonly selected red wines (44.4%). Regarding the occasions for wine consumption, participants from Dubrovnik–Neretva County most often drank wine in the company of family and friends (62.7%), and at celebrations (61.9%), while they consumed it least often with meals (31.1%). In comparison, tourist visitors most frequently consumed wine in the company of family and friends (81%), and least often for relaxation purposes (25.4%), with participants being able to select multiple responses (Figure 5). The largest proportion of participants from Dubrovnik–Neretva County (16.7%) rated their wine knowledge as 7 on a 1–10 scale. In comparison,

among tourist visitors, the majority (19.5%) considered themselves to have moderate knowledge (level 5). When choosing wine, participants from Dubrovnik–Neretva County indicated that the most important factor was taste, regardless of production method (49.2%), while 38.1% emphasized the importance of preserving traditional flavour characteristics. The smallest proportion (20.6%) considered label and packaging to be an important selection criterion. Similarly, visitors most frequently indicated that taste, independent of production method, was the most important factor when choosing wine (47.6%), while 41.3% particularly valued recommendations from friends or family members (Figure 6).

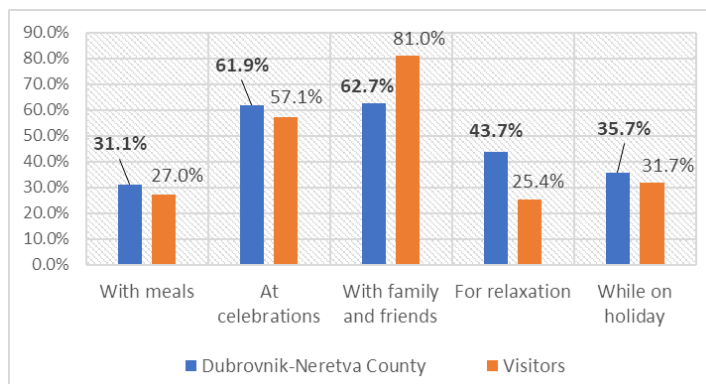


Figure 5. Most common occasions for wine consumption
Note: The question permitted multiple responses

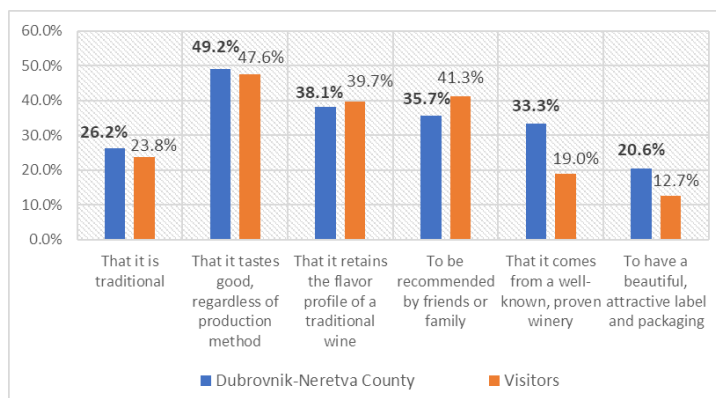


Figure 6. Most important factors in wine selection.
Note: The question permitted multiple responses

Knowledge and attitudes toward dealcoholized wines

Most participants from Dubrovnik–Neretva County (65.1%) had previously heard of dealcoholized wines, but a smaller proportion had actually tasted them, only 23.8%. A higher level of awareness was observed among tourist visitors, with 79.4% of respondents reporting that they had heard of such wines, and 58.7% stating that they had tried them. This suggests that, relative to the local population, visitors are more familiar with the concept and availability of dealcoholized wines and are more willing to experiment with alternative wine options. Similar trends have been observed in other European markets; for example, in Germany, as many as 60% of consumers have already consumed or plan to consume low-alcohol or alcohol-free beverages, indicating growing acceptance of these products in certain European regions (IWSR, 2020).

Most participants from Dubrovnik–Neretva County (51.7%) rated the quality of dealcoholized wines compared to conventional wines as 3, indicating a neutral or moderate attitude toward this category of

wines (Figure 7). A comparable distribution was observed among tourist visitors (54.1%), suggesting a generally similar perception between the two groups. Higher ratings (4 and 5) were assigned less frequently, particularly among participants from Dubrovnik–Neretva County (only 3.4% gave the highest score), whereas very low ratings (1 and 2) accounted for a smaller but notable proportion of respondents, both among tourist visitors (5.4% gave the lowest scores) and participants from Dubrovnik–Neretva County (6.9%). A majority of participants from Dubrovnik–Neretva County (53.2%) stated that they might purchase or order dealcoholised wine, while 19.8% indicated that they would definitely do so.

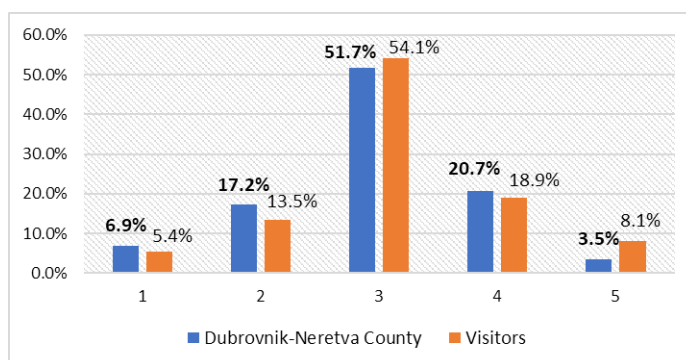


Figure 7. Perceived quality of dealcoholized wines compared to the conventional wines (1 = very poor, 5 = very good)

Greater willingness was observed among tourist visitors, with 65.1% reporting that they would certainly purchase or order such wine. Regarding the level of interest when consuming dealcoholized wines, most participants from Dubrovnik–Neretva County (35.7%) rated their interest as 3, indicating moderate interest. A similar trend was observed among tourist visitors, with 42.9% also giving a rating of 3 (Figure 8). Participants from Dubrovnik–Neretva County reported that they would most often choose dealcoholized wine in situations when they did not want to consume alcohol (44.4%) or when they knew they would be driving (38.9%). By contrast, tourist visitors most frequently cited health-related reasons (54%), followed by situations involving driving (41.3%). These results indicate a cautious but present interest in dealcoholized wines among both groups, with tourist visitors showing greater readiness to make an actual purchase. Participants from Dubrovnik–Neretva County primarily perceive dealcoholized wine as a practical alternative in situations requiring alcohol avoidance, whereas tourist visitors more often associate it with a healthier lifestyle, which further explains their higher openness and willingness to try these products.

These findings for participants from Dubrovnik–Neretva County are consistent with previous international studies, which highlight diverse consumer attitudes toward dealcoholized wines. For example, a study conducted in Australia reported consumer interest ranging from 6 to 8% (Mueller et al., 2011), while another Australian study noted a 16% acceptance rate for dealcoholized wine consumption (Saliba et al., 2013). Furthermore, results from Bucher et al. (2020) suggest that Australian consumers did not change their consumption habits despite the reduced alcohol content, although these wines were still perceived positively. Comparable patterns have also been reported in European markets. A study in the Trentino/Alto Adige region indicated that the main motivations for accepting dealcoholized wines were the opportunity for tasting, positive reviews and promotional activities, whereas low product availability and entrenched consumption habits were identified as key barriers to purchase (Akhtar et al., 2025b).

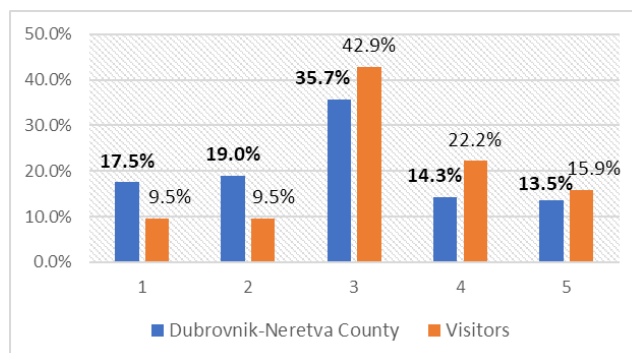


Figure 8. Level of interest in consuming dealcoholized wines (1 = not interested, 5 = very interested).

Health and nutritional values

Although participants from Dubrovnik–Neretva County rated their general wine knowledge as moderate, the study revealed that they were largely uninformed about the nutritional values of dealcoholized wines. Accordingly, the largest proportion (38.1%) assigned a score of 1 to indicate their level of information. Only a smaller portion, around 30% (ratings 4 and 5), demonstrated good and very good awareness. In contrast, visitors were considerably better informed, with the largest group (36.5%) falling into the middle category (rating 3), while nearly 45% considered themselves well or very well informed (ratings 4 and 5) about the nutritional and health-related properties of dealcoholized wines (Figure 9). These results indicate that, relative to the local population, visitors exhibit a higher level of knowledge regarding the nutritional value of dealcoholized wines. Almost half of the participants from Dubrovnik–Neretva County (47.6%) were unsure whether dealcoholized wine constitutes a healthier alternative to conventional wines, further confirming their lower level of awareness on this topic. In contrast, a total of 74.6% of visitors considered dealcoholized wine to be a healthier option.

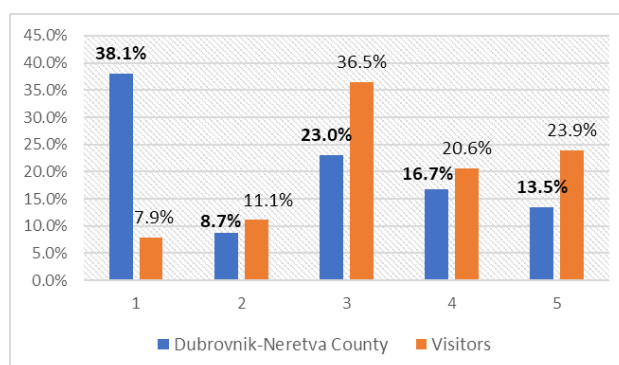


Figure 9. Level of awareness regarding the nutritional values of dealcoholized wines (1 = not informed, 5 = very well informed)

Furthermore, participants from Dubrovnik-Neretva County (57.1%) reported that they would consume dealcoholized wine more frequently if they knew it would reduce health risks. A higher proportion was observed among tourist visitors (74.4%), indicating a stronger responsiveness to health-related information. Regarding the importance of nutritional composition, 42.9% of participants from Dubrovnik-Neretva County considered it moderately important that the wine contains lower levels of alcohol, calories, and sugar, while a greater share of tourist visitors (57.1%) expressed the same view. These findings indicate that, although local participants recognise the potential benefits of dealcoholized wines, this awareness remains less pronounced than among visitors, who appear more inclined to incorporate such products into their consumption habits. Such attitudes are consistent with the results

of a study conducted in the Trentino/Alto Adige region of Italy, where 74% of respondents, despite low levels of awareness, expressed willingness to recommend dealcoholized wines to other consumers (Akhtar et al., 2025b). At the same time, international research indicates that cultural and religious factors can strongly shape the perception and acceptance of these products. For example, in Malaysia, belief in the health benefits of dealcoholized wine was present, but low alcohol consumption in consumer culture, combined with the perception that the product is non-halal, resulted in low preference. Most respondents (81%) considered dealcoholized wine a non-halal product; 20% had heard of it, but only 9% had consumed it (Chan et al., 2012). These findings further support the conclusion that, in addition to awareness, broader cultural and lifestyle factors play a key role in shaping the acceptance of dealcoholized wines, including among the local population of Dubrovnik–Neretva County.

Market potential

Participants from Dubrovnik–Neretva County most frequently indicated that they would be willing to pay between €5 and €10 for a bottle of quality dealcoholized wine (47.6%). A higher preference for this price range was observed among tourist visitors (61.9%), while both groups rarely accepted prices above €15. The proportion of those who would not purchase such wine at all was higher among participants from Dubrovnik–Neretva County (11.9%) than among tourist visitors (6.3%), indicating somewhat lower interest in this wine category among the domestic population (Figure 10). This trend is further supported by additional questions: only 32.5% of participants from Dubrovnik–Neretva County stated they would visit a winery offering dealcoholized wines, although an additional 46.8% indicated they might do so. In contrast, a substantially higher proportion of visitors (69.8%) expressed willingness to visit such wineries. Moreover, 34.9% of participants from Dubrovnik–Neretva County believe that wineries should produce dealcoholized wines, whereas this view was more strongly supported among tourist visitors (65.1%), suggesting that current demand is more pronounced among visitors. Nevertheless, despite the lower expressed willingness among the local population, a notable proportion of participants from Dubrovnik–Neretva County still recognise the potential of dealcoholized wines in the hospitality and gastronomy sectors. For example, 52.6% participants from Dubrovnik–Neretva County and 38.1% of tourist visitors considered that dealcoholized wines have a role in gastronomy and that hospitality establishments could enhance their offerings specifically for guests who do not consume alcohol.

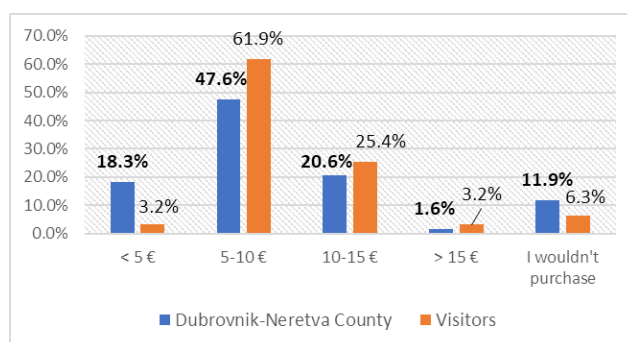


Figure 10. Price acceptability of dealcoholised wine

These findings for participants from Dubrovnik–Neretva County are consistent with previous studies. For example, an Australian study showed that consumers are not willing to pay a price equivalent to that of traditional wine for dealcoholized wine (Bucher et al., 2020). Similarly, research conducted in Italy indicates that consumers are more inclined to purchase dealcoholized wine only when a price discount proportional to the level of alcohol removal is offered. This aligns with the observed price sensitivity

among the local population in the present study. The most promising target groups identified include younger consumers in their twenties, infrequent wine drinkers, individuals who pay attention to labels, and those who avoid alcohol for personal or health-related reasons. These segments may also represent potential target groups within the Dubrovnik–Neretva County market.

At the same time, a segment of consumers continues to show a certain degree of resistance to dealcoholization, with alcohol content exerting a positive influence on preferences, a finding that has been further supported by results from an Italian study (Stasi et al., 2014). This may help explain the more cautious attitudes observed among participants from Dubrovnik–Neretva County.

Sensory properties and technology

Participants from Dubrovnik–Neretva County were generally unfamiliar with wine dealcoholization methods, with 42.9% reporting that they had no knowledge of these processes, while 32.5% indicated only partial understanding. A higher level of familiarity was observed among tourist visitors, as 15.9% considered themselves well acquainted with dealcoholization methods, and an additional 47.9% reported only superficial knowledge. Regarding the perceived impact of dealcoholization on the aroma and taste of wine, 25.4% of participants from Dubrovnik–Neretva County believed that the process could partially alter sensory properties, but not to an extent that would be decisive for overall quality. A similar perception was noted among tourist visitors, among whom 52.4% agreed that dealcoholization somewhat affects aroma and taste but does not compromise the key characteristics of the wine. The results highlight variations in attitudes primarily within the local population, while differences observed among visitors provide additional context. Participants from Dubrovnik–Neretva County were more likely to hold polarised opinions: 12.7% considered the preservation of sensory properties not important at all, whereas none of the visitors shared this view. At the same time, the largest proportion of participants from Dubrovnik–Neretva County (34.9%) rated this characteristic as very important, while a smaller share of visitors (27.0%) expressed the same opinion. In contrast to the more diverse views among the local population, tourist visitors more frequently expressed moderate attitudes, with 50.8% of them considering the preservation of taste and aroma moderately important, which is substantially higher than the corresponding proportion among participants from Dubrovnik–Neretva County (27.8%) (Figure 11).

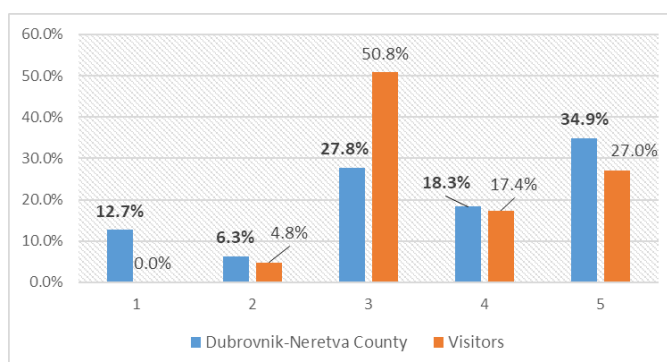


Figure 11. Perceived importance of preserving the characteristic organoleptic compounds (1 = not important, 5 = very important).

Similar trends observed among participants from Dubrovnik–Neretva County are supported by findings from international studies. For example, 40% of respondents in Australia reported that they would consider purchasing lower-alcohol wines, but only if the taste remained comparable to that of conventional wines

(Saliba et al., 2013). This finding reinforces the importance of preserving recognisable sensory characteristics, which also appears to be a relevant factor for the local population in the present study, as it plays a key role in the acceptance of low-alcohol and dealcoholized wines.

Conclusion

The results of this study indicate that the perception and acceptance of dealcoholized wines among participants from Dubrovnik–Neretva County are diverse and strongly influenced by the level of consumer awareness, consumption habits and the context in which the wine is consumed. Local participants generally approach this wine category with caution and a more traditional perspective, often perceiving it primarily as a functional alternative in situations where they wish to avoid alcohol. The findings suggest that, although awareness and interest are present within the local population, their translation into actual consumption remains limited, highlighting the importance of factors such as product availability, tasting opportunities, and clear communication of product value.

While differences observed among tourist visitors provide additional context and indicate broader market trends, the present results emphasise that, within Dubrovnik–Neretva County, dealcoholized wines are primarily recognised as a niche but potentially valuable product, particularly in specific consumption contexts. Despite the relatively moderate willingness for personal purchase among residents, their recognition of the role of dealcoholized wines within the hospitality and gastronomy sector suggests an opportunity for gradual market development.

In conclusion, the market potential of dealcoholized wines in Dubrovnik–Neretva County lies in a targeted approach involving education, improved availability, focused marketing, and sensory refinement of the products. Such an approach is essential for increasing acceptance among the local population, while insights from tourists may serve as a useful reference for understanding broader consumer trends. The continuation of this research focuses on the sensory perception of dealcoholized wines, with particular emphasis on how tasting experiences affect consumer attitudes and purchase intentions.

Author Contributions: IMR and RP: Investigation, Writing – Original Draft, Visualisation. MM and SD: Writing–Reviewing and Editing.

Funding: This research received no external funding.

Acknowledgements: The authors would like to thank all respondents for their participation and valuable contributions to this study.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Agencija za plaćanja u poljoprivredi, ribarstvu i ruralnom razvoju (APPR). 2024. Podaci iz Vinogradarskog registra za 2023. godinu. <https://www.apprrr.hr/wp-content/uploads/2024/01/Podaci-iz-Vinogradarskog-registra-za-2023-1.xlsx>. Accessed November 24, 2025.
- Afonso, S. M., Inês, A., Vilela, A. (2024): Bio-dealcoholization of wines: can yeast make lighter wines? *Fermentation* 10(1), 36. <https://doi.org/10.3390/fermentation10010036>
- Afonso, S., Teixeira, A. L., Escobar, E., Inês, A., Vilela, A. (2025): Non-alcoholic wines: sensory pleasantness and health benefits. *Foods* 14(8), 1356. <https://doi.org/10.3390/foods14081356>

- Akhtar, W., Ceci, A. T., Longo, E., Marconi, M. A., Lonardi, F., Boselli, E. (2025a): Dealcoholized wine: techniques, sensory impacts, stability, and perspectives of a growing industry. *Comprehensive Reviews in Food Science and Food Safety* 24(3), e70171. <https://doi.org/10.1111/1541-4337.70171>
- Akhtar, W., Longo, E., Boselli, E. (2025b): Sensory and consumer perceptions, and consumption barriers of low and no-alcohol wines in Trentino/Alto Adige. In: *Macrowine 2025: Book of Abstracts*, Ruault, N. (ed.), Bolzano, Italy, pp. 153. https://bia.unibz.it/esploro/outputs/conferencePoster/Sensory-and-Consumer-Perceptions-and-Consumption/991007063649801241?institution=39UBZ_INST. Accessed November 24, 2025.
- Bucher, T., Deroover, K., Stockley, C. (2018): Low-alcohol wine: a narrative review on consumer perception and behaviour. *Beverages* 4(4), 82. <https://doi.org/10.3390/beverages4040082>
- Bucher, T., Deroover, K., Stockley, C. (2019): Production and marketing of low-alcohol wine. In: *Advances in grape and wine biotechnology*, Morata, A., Loira, I. (eds.), London, UK: IntechOpen. https://openresearch.newcastle.edu.au/articles/chapter/Production_and_marketing_of_low-alcohol_wine/28970165?file=54326084. Accessed November 24, 2025.
- Bucher, T., Frey, E., Wilczynska, M., Deroover, K., Dohle, S. (2020): Consumer perception and behaviour related to low-alcohol wine: do people overcompensate? *Public Health Nutrition* 23(11), 1939–1947. <https://doi.org/10.1017/S1368980019005238>
- Catarino, M. and Mendes, A. (2011): Dealcoholizing wine by membrane separation processes. *Innovative Food Science & Emerging Technologies* 12(3), 330–337. <https://doi.org/10.1016/j.ifset.2011.03.006>
- Chan, S. M., Adzahan, N. M., Ab Karim, M. S., Karim, R., Lasekan, O., Regenstein, J. M. (2012): Consumer preferences and perceptions on dealcoholised wine. *Journal of Food Products Marketing* 18(1), 65–77. <https://doi.org/10.1080/10454446.2012.627292>
- Chiva-Blanch, G., Urpi-Sarda, M., Ros, E., Arranz, S., Valderas-Martínez, P., Casas, R., Sacanella, E., Llorach, R., Lamuela-Raventos, R. M., Andres-Lacueva, C., Estruch, R. (2012): Dealcoholized red wine decreases systolic and diastolic blood pressure and increases plasma nitric oxide. *Circulation Research* 111(8), 1065–1068. <https://doi.org/10.1161/CIRCRESAHA.112.275636>
- Dingwall, K. (2021): IWSR reports consumers prefer no-alcohol to low-alcohol. *Forbes*. <https://www.forbes.com/sites/katedingwall/2021/04/30/iwsr-reports-consumers-prefer-no-alcohol-to-low-alcohol/>. Accessed August 1, 2025.
- Europski parlament i Vijeće Europske unije (EU). (2021). Uredba (EU) 2021/2117 od 2. prosinca 2021. o izmjeni uredbi (EU) br. 1308/2013, (EU) br. 1151/2012, (EU) br. 251/2014 i (EU) br. 228/2013. Službeni list Europske unije. <https://eur-lex.europa.eu/legal-content/HR/TXT/?uri=CELEX%3A32021R2117> Accessed November 24, 2025.
- Hrelia, S., Di Renzo, L., Bavaresco, L., Bernardi, E., Malaguti, M., Giacosa, A. (2023): Moderate wine consumption and health: a narrative review. *Nutrients* 15(1), 175. <https://doi.org/10.3390/nu15010175>
- Hoffmann, R. and Surry, Y. (2013): The demand for (non)alcoholic beverages in France and the impact of advertising. In: *Wine economics: quantitative studies and empirical applications*, Giraud-Héraud, E., Pichery, M.-C. (eds.), London, UK: Palgrave Macmillan, pp. 49-70.
- IWSR (2020): Global low and no-alcohol strategic study. <https://www.theiwsr.com/global-low-and-no-alcohol-strategic-study/>. Accessed August 10, 2025.

- IWSR (2024): The innovations shaping future alcohol growth. <https://www.theiwsr.com/the-innovations-shaping-future-low-alcohol-growth/>. Accessed August 10, 2025.
- Kucherenko, V. and Uspalenko, O. (2023): Relevance of the production of non-alcoholic wines. BIO Web of Conferences: 44th World Congress of Vine and Wine, 68, 03017. <https://doi.org/10.1051/bioconf/20236803017>
- Lähteenmäki, L. (2004): Consumers and health: getting the probiotic message across. *Microbial Ecology in Health and Disease* 16(2-3), 145–149. <https://doi.org/10.1080/08910600410032358>
- Lisanti, M. T., Gambuti, A., Genovese, A., Piombino, P., Moio, L. (2013): Partial dealcoholization of red wines by membrane contactor technique: effect on sensory characteristics and volatile composition. *Food and Bioprocess Technology* 6(9), 2289–2305. <https://doi.org/10.1007/s11947-012-0942-2>
- Lockshin, L. and Corsi, A. M. (2012): Consumer behaviour for wine 2.0: a review since 2003 and future directions. *Wine Economics and Policy* 1(1), 2–23. <https://doi.org/10.1016/j.wep.2012.11.003>
- Longo, R., Blackman, J. W., Torley, P. J., Rogiers, S. Y., Schmidtke, L. M. (2017): Changes in volatile composition and sensory attributes of wines during alcohol content reduction. *Journal of the Science of Food and Agriculture* 97(1), 8–16. <https://doi.org/10.1002/jsfa.7757>
- Mangindaan, D., Khoiruddin, K., Wenten, I. G. (2018): Beverage dealcoholization processes: past, present, and future. *Trends in Food Science & Technology* 71, 36–45. <https://doi.org/10.1016/j.tifs.2017.10.018>
- Maletić, E., Kovačić, D., Njavro, M. (2012): Strategija razvoja vinarstva i vinogradarstva Dubrovačko-neretvanske županije. Dubrovačko-neretvanska županija, Dubrovnik, Croatia. https://www.smokvica.hr/dokumenti/Strategija_vin_DNZ.pdf. Accessed November 24, 2025.
- Mueller, S., Lockshin, L., Louviere, J. J. (2011): Alcohol in moderation: market potential for low-alcohol wine before and after excise tax increase. In: 6th International Conference of the Academy of Wine Business Research, Bordeaux, France. http://academyofwinebusiness.com/wp-content/uploads/2011/09/77-AWBR2011-Mueller_Lockshin_Louviere.pdf. Accessed November 24, 2025.
- Oro, C. E. D., Puton, B. M. S., Venquiaruto, L. D., Dallago, R. M., Arend, G. D., Tres, M. V. (2025): The role of membranes in modern winemaking: from clarification to dealcoholization. *Membranes* 15(1), 14. <https://doi.org/10.3390/membranes15010014>
- Podworny, M., Brian, L., Gosset, M., Peter, M., Cheriet, F., Geffroy, O. (2024): In a fully dealcoholised Chardonnay wine, sugar is a key driver of liking for young consumers. *OENO One* 58(4), 8290. <https://doi.org/10.20870/oeno-one.2024.58.4.8290>
- Saliba, A., Ovington, L., Moran, C. (2013): Consumer demand for low-alcohol wine in an Australian sample. *International Journal of Wine Research* 2013(5), 1–8. <https://doi.org/10.2147/IJWR.S41448>
- Sam, F. E., Ma, T.-Z., Salifu, R., Wang, J., Jiang, Y.-M., Zhang, B., Han, S.-Y. (2021): Techniques for dealcoholization of wines: their impact on wine phenolic composition, volatile composition, and sensory characteristics. *Foods* 10(10), 2498. <https://doi.org/10.3390/foods10102498>
- Schulz, F. N., Farid, H., Hanf, J. H. (2023): The Lower the Better? Discussion on Non-Alcoholic Wine and Its Marketing. *Dietetics* 2(3), 278–288. <https://doi.org/10.3390/dietetics2030020>

- Silva, P. (2024): Low-alcohol and nonalcoholic wines: from production to cardiovascular health, along with their economic effects. *Beverages* 10(3), 49. <https://doi.org/10.3390/beverages10030049>
- Stasi, A., Bimbo, F., Viscecchia, R., Seccia, A. (2014): Italian consumers' preferences regarding dealcoholized wine, information and price. *Wine Economics and Policy* 3(1), 54–61. <https://doi.org/10.1016/j.wep.2014.05.002>
- Stockley, C. S., Taylor, A. W., Montgomerie, A., Dal Grande E. (2017): Changes in wine consumption are influenced most by health: results from a population survey of South Australians in 2013. *International Journal of Wine Research* 9, 13–22. <https://doi.org/10.2147/IJWR.S126417>
- Uspalenko, O., Bilko, M., Kucherenko, V., Schmitt, M., Lorenzo, I. (2024): Vacuum distillation in the technology of non-alcoholic wines from Isabella grapes. *Ukrainian Journal of Food Science* 12(1), 56–66. <https://doi.org/10.24263/2310-1008-2024-12-1-7>