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REPORT

The Global Rise of Non-Alcoholic and Low-Alcohol Wines: A Strategic Analysis of Production, Consumption, Prices, and Trends for Wine Sector Professionals

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I. Executive Summary

The global market for non-alcoholic and low-alcohol (NOLO) wines is undergoing a dynamic transformation and accelerated growth, fundamentally driven by increasing health and wellness awareness among consumers, as well as a shift in consumption patterns towards moderation. This report offers a comprehensive analysis of this emerging segment, aimed at wine sector professionals seeking to understand its complexities and capitalize on the opportunities it presents.

Market figures indicate robust expansion. Estimates from various consulting firms place the global non-alcoholic wine market value between $1.18 billion [1] and $2.26 billion in 2023 [2], with projected compound annual growth rates (CAGR) varying significantly, from 7.9% [2] to an ambitious 23.5% [1] for the next decade. These variations partly reflect different methodologies and the scope of products included (only "non-alcoholic" versus a broader "NOLO" category), but the underlying growth trend is unequivocal. IWSR forecasts volume growth of +7% CAGR for non-alcoholic beverages in general and +5% CAGR specifically for non-alcoholic wine between 2024 and 2028 in major markets.[3]

The production of NOLO wines faces the primary challenge of maintaining organoleptic integrity after alcohol removal, a crucial component for the body, aroma, and flavor of wine. Technologies such as reverse osmosis and vacuum distillation, including the spinning cone column, are the most employed, each with its advantages and limitations regarding costs and quality preservation.[4] Innovation focuses on improving these techniques, as well as on viticultural and microbiological practices to produce wines with inherently lower alcohol content.[5] The quality of the base wine is a universally recognized critical factor for the success of the final product.[4]

Consumption is led by younger generations, Millennials and Gen Z, who seek alternatives that align with a healthy lifestyle and allow social participation without the effects of alcohol.[2] North America currently stands as the leading market in revenue [1], although Asia-Pacific shows the greatest growth potential.[1] NOLO sparkling wines dominate, especially in Europe, suggesting market entry through festive occasions.[1]

The international regulatory framework is fragmented, with definitions and alcohol content thresholds varying considerably between countries and regions (OIV, EU, USA, UK, Australia, etc.), posing challenges for global trade and marketing.[7] The recent EU regulation (2021/2117), which allows the labeling of dealcoholized products as "wine," could be a significant catalyst for acceptance in this key market.[10]

The prices of NOLO wines tend towards parity with their alcoholic equivalents, despite the exemption from excise duties in many cases.[12] This is due to the additional costs of the dealcoholization process and the need to use high-quality base wines.[13] Educating consumers about this added value is a challenge for the industry.

Future trends point towards continued premiumization, with a focus on improving sensory quality and offering products that reflect specific varietal and regional profiles.[8] Convergence with organic and vegan product trends offers "triple benefit" niches.[15] Packaging innovation, such as cans, is also gaining ground, aligning with convenience and sustainability.[2]

For wine sector professionals, the NOLO market represents both a significant opportunity for diversification and innovation and a set of technical, regulatory, and marketing challenges. Successful strategies will require investment in quality, a deep understanding of consumer dynamics, and astute navigation of the complex regulatory landscape. The ability to communicate the value and quality of these products will be fundamental to capturing the potential of this booming market.

II. Global Market Overview of Non-Alcoholic and Low-Alcohol Wines

The market for non-alcoholic and low-alcohol (NOLO) wines has transcended its initial niche to become a dynamic and rapidly growing segment within the global beverage industry. This boom responds to a confluence of socioeconomic factors and changes in consumer preferences, mainly increased health awareness and a trend towards moderation in alcohol consumption.

A. Market Sizing: Value, Volume, and Growth (CAGR)

The precise quantification of the global NOLO wine market presents certain complexities due to differing product definitions (non-alcoholic versus low-alcohol) and research methodologies employed by consulting firms. Nevertheless, available data converge in indicating a robust and sustained growth trajectory.

According to Global Growth Insights, the non-alcoholic wine market was valued at USD 1,180.83 million in 2023, with a projection to reach USD 7,892.17 million by 2032, implying a compound annual growth rate (CAGR) of 23.5% during the forecast period.[1] On the other hand, Grand View Research estimated the global non-alcoholic wine market at USD 2.26 billion in 2023, expecting growth at a CAGR of 7.9% between 2024 and 2030, to reach USD 3.78 billion in 2030.[2] Fact.MR also projects significant growth, estimating that the non-alcoholic wine market, valued at over USD 1.6 billion in 2021, will reach USD 4.5 billion in 2031 with a CAGR of 10.4% [17], and in a more recent report, estimates the market will reach USD 7.64 billion by 2035 with a CAGR of 10.4% (2025-2035).[18]

These variations in figures can be attributed to the different inclusions of products under the NOLO label; some reports focus strictly on "non-alcoholic" wines (typically below 0.5% alcohol by volume, ABV), while others may encompass a broader spectrum of "low-alcohol" wines. This divergence not only reflects methodological differences but may also indicate the youth and rapid evolution of the market, where definitions and included products are still consolidating. Such variability suggests that companies should approach these figures with a critical perspective, seeking a holistic understanding rather than basing strategic decisions on a single data source.

In terms of volume, IWSR, a recognized authority in alcoholic beverage data, forecasts a +7% CAGR for the volume of non-alcoholic beverages in general and a +5% CAGR specifically for non-alcoholic wine between 2024 and 2028 in the ten main global markets.[3] It is important to note that international organizations such as the International Organisation of Vine and Wine (OIV) do not yet publish specific and differentiated volume production statistics for NOLO wine categories in their global reports.[7] This absence of globally standardized volume data represents a limitation for a comprehensive analysis of the sector, although estimates from consultancies like IWSR provide a valuable perspective.

Table 1: Comparison of Global Market Size and CAGR for NOLO Wines (USD Millions)

Report Source	Base Year	Base Year Market Value (USD Millions)	Projection Period	Projected CAGR	Projected Market Value (USD Millions)
Global Growth Insights	2023	1,180.83	2024-2032	23.5%	7,892.17 (for 2032)
Grand View Research	2023	2,260	2024-2030	7.9%	3,780 (for 2030)

Fact.MR (Report 1)	2021	>1,600	2021-2031	10.4%	4,500 (for 2031)
Fact.MR (Report 2)	2025 (E)	2,840	2025-2035	10.4%	7,640 (for 2035)
IWSR (Non-alcoholic wine)	-	-	2024-2028	+5% (Volume)	-

Sources:.[1] *E=Estimated.*

This table consolidates estimates from leading consultancies, allowing a quick visualization of the market's magnitude and growth potential, while also underscoring the need for cautious interpretation of the figures.

B. Key Market Segmentation

The NOLO market can be segmented according to various criteria, each revealing particular dynamics:

- By Alcohol Content:
  A fundamental distinction exists between "non-alcoholic" and "low-alcohol" wines. Generally, non-alcoholic wines contain less than 0.5% ABV, while low-alcohol wines have a variable alcohol content, but lower than traditional wines (e.g., between 0.5% and 7% ABV, or even up to 10.5% ABV according to some classifications 8).
  Grand View Research indicates that the segment of wines with up to 0.5% ABV represented the largest revenue share with 47.67% in 2023. Meanwhile, the segment of wines with 0.0% ABV is projected with a CAGR of 8.4% during the forecast period.2 There is an industry expectation that low-alcohol wines might experience faster adoption than completely non-alcoholic wines, due to better flavor retention and organoleptic characteristics closer to traditional wine.12
- By Product Type:
  NOLO sparkling wines have shown considerable popularity, especially in Europe, where they represented 60.41% of the revenue share of the non-alcoholic wine market in 2023.1 This dominance suggests that consumers initially turn to NOLO alternatives for festive and social occasions, where sparkling wine is a traditional choice. This familiarity could act as a gateway for consumers to subsequently explore NOLO still wines. The NOLO still wine segment is also expected to experience significant growth, with a projected CAGR of 8.9% between 2024 and

2030.2

- By Distribution Channel:
  The off-trade channel (supermarkets, liquor stores, online stores) currently dominates NOLO wine sales, accounting for 89.00% of revenue in 2023.2 This leadership is attributed to greater product visibility on shelves and the convenience of purchasing for home consumption. However, the on-trade channel (restaurants, bars) is gaining traction and is expected to grow at a CAGR of 6.6% between 2024 and 2030 2, as more establishments incorporate NOLO options into their menus to meet consumer demand.
- By Packaging:
  The glass bottle remains the predominant packaging format, with a market share of 86.84% in 2023.2 Nevertheless, a notable growth in the use of cans is observed, with a projected CAGR of 9.1% between 2024 and 2030 for this segment.2 This rise of cans not only responds to the search for convenience and portability but also aligns with a growing concern for sustainability and attracting a younger audience, who may perceive cans as a more modern, accessible, and environmentally friendly format compared to traditional bottles.2

C. Key Regional Dynamics

The growth of the NOLO market is not uniform globally, presenting particularities in each region:

- **North America:** Currently leads the market in terms of revenue, with a share of 49.58% in 2023.[1] The US market is particularly dynamic, with a projected CAGR of 6.4% between 2024 and 2030 for non-alcoholic wine [1], driven by significant lifestyle changes and a greater supply of high-quality products. IWSR reinforces this perspective, projecting a volume CAGR of 18% for the total non-alcoholic beverage market in the US between 2024 and 2028.[29]
- **Europe:** Represents a mature and substantial market, especially for NOLO sparkling wines.[1] Countries like Germany and Spain are considered large and consolidated markets for non-alcoholic beverages in general, while the United Kingdom stands out for its dynamism and rapid growth in this segment.[7] France and Italy, with their strong winemaking traditions, are emerging as key producers, with significant investments in dealcoholization facilities and development of new NOLO products.[14]
- **Asia-Pacific:** Is emerging as the fastest-growing region for non-alcoholic wine, with a forecasted CAGR of 13.0% between 2024 and 2030.[1] This growth is driven by increasing health and wellness awareness, as well as the adoption of Western consumption trends in countries like Japan, China, and Australia. The potential of

this region suggests a possible geographical shift in the epicenter of future NOLO market growth, presenting significant opportunities for exporters who can understand and adapt to local preferences.
- **Other Markets:** Regions such as South America (Mercosur), South Africa, and the Middle East also show growing interest, albeit at different paces. In the Middle East, for example, cultural and religious restrictions on alcohol may drive demand for high-quality non-alcoholic alternatives.[18]

Understanding these regional dynamics and market segmentations is crucial for wine industry players to design effective entry, product development, and marketing strategies tailored to the particularities of each context.

III. Regulatory Framework and International Definitions

The expansion of the non-alcoholic and low-alcohol (NOLO) wine market faces a complex and notably fragmented regulatory landscape internationally. Definitions of what constitutes a "non-alcoholic" or "low-alcohol" wine, permitted alcohol by volume (ABV) thresholds, and labeling requirements vary significantly between countries and regions. This regulatory divergence not only creates confusion among consumers but also poses considerable challenges for producers and distributors operating in multiple markets.

A. OIV (International Organisation of Vine and Wine) Standards and Resolutions

The International Organisation of Vine and Wine (OIV) plays a crucial role as a scientific and technical reference body in the global wine sector. Although its resolutions are not legally binding for all member countries, they do establish important guidelines that influence national legislations and facilitate international trade.

In relation to NOLO products, the OIV has adopted two fundamental resolutions:

- **OIV-ECO 432-2012:** Defines "Beverage obtained from the dealcoholization of wine" as one whose alcoholic strength by volume is less than 0.5% vol.[7]
- **OIV-ECO 433-2012:** Defines "Beverage obtained from the partial dealcoholization of wine" as one whose alcoholic strength by volume is equal to or greater than 0.5% vol. and lower than the minimum applicable alcoholic strength by volume of the wine or special wine from which it originates.[7]

Furthermore, the OIV specifies the permitted dealcoholization processes for the production of these products, which include partial vacuum evaporation, membrane techniques (such as reverse osmosis), and distillation.[7] The organization also emphasizes the importance of clear labeling indicating whether products are "dealcoholized" or "partially dealcoholized" [8], allowing consumers to make informed decisions.

B. Comparative Legislation in Key Markets

Despite OIV guidelines, the regulatory reality is diverse:

- European Union (EU):
  Regulation (EU) 2021/2117, amending the Common Market Organisation (CMO) for agricultural products, has been a milestone for the NOLO sector in Europe. This regulation permits the production of "dealcoholized" wines (with an acquired alcoholic strength not exceeding 0.5% vol.) and "partially dealcoholized" wines (with an acquired alcoholic strength greater than 0.5% vol. but lower than the minimum alcoholic strength of the wine category before dealcoholization).9 A crucial aspect of this regulation is that the base product must be a "wine" that meets all the characteristics of the established wine product categories, and the reduction in alcohol content must be achieved through a specific dealcoholization process, not by simple dilution or mixing with non-alcoholic beverages.11 Labeling must obligatorily include the terms "dealcoholized" or "partially dealcoholized" alongside the designation of the wine product category.11 This regulation represents a significant advancement, as it allows these products to be marketed under the "wine" denomination, conferring a legitimacy and appeal they previously lacked, which could considerably boost their acceptance and growth in the European market.10
- United States (USA):
  Regulation in the USA is dual and depends on alcohol content:
  - **Wines with less than 0.5% ABV:** Considered "non-alcoholic beverages" and are primarily regulated by the Food and Drug Administration (FDA). This means they must comply with food labeling requirements, including an ingredient list and a nutrition facts panel.[4] The term "alcohol-free" is reserved for products with less than 0.05% ABV, where alcohol is not detectable.[4]
  - **Wines with an ABV between 0.5% and 7%:** These products fall into a more complex regulatory zone. Labeling (nutritional information, ingredients) follows FDA guidelines, but permitted additives in their production are regulated by the Alcohol and Tobacco Tax and Trade Bureau (TTB).[31] This dual regulatory system (TTB and FDA) can create an additional administrative burden for producers, especially smaller wineries, who must navigate and comply with two distinct sets of regulations depending on the final product.[31] Additionally, there may be additional state-level licensing requirements, such

as food manufacturing or non-alcoholic beverage licenses, and regulations for direct-to-consumer (DTC) sales vary considerably between states.[31]

- United Kingdom (UK):
  Following Brexit, the United Kingdom maintains its own set of descriptors for low and no-alcohol beverages, which differ from those of the EU:
  - "Alcohol-free": No more than 0.05% ABV.
  - "De-alcoholised": No more than 0.5% ABV, and the alcohol must have been extracted.
  - "Low-alcohol": No more than 1.2% ABV. .[6] The Wine and Spirit Trade Association (WSTA) has been advocating for a simplification and alignment of these descriptors with those of the EU and other international markets, including the proposal to raise the threshold for "alcohol-free" to 0.5% ABV.[32] This initiative reflects industry pressure towards harmonization to facilitate trade and improve consumer understanding, especially relevant in the post-Brexit context.
- Australia and New Zealand:
  Governed by the Australia New Zealand Food Standards Code (FSANZ), these markets have their own particularities:
  - The term "low alcohol" cannot be used on a beverage containing more than 1.15% ABV.[34]
  - Terms like "non-intoxicating" must not appear on the label of a beverage with more than 0.5% ABV.[34]
  - Recently, changes have been introduced allowing products with as little as 4.5% ABV to be classified as "wine," approaching European standards.[8] In Australia, "wine" is considered for products with more than 4.5% ABV; "low-alcohol wine" for those between 0.5% and 1.15% ABV; and products with less than 0.5% ABV are labeled as "alcohol-free," "non-alcoholic," or "dealcoholized."[9] Standard 2.7.4 of the FSANZ regulates "Wine and Wine Product," while Standard 2.6.2 covers "Non-alcoholic beverages and brewed soft drinks."[35]
- **Other relevant markets:**
  - **Canada:** Defines "dealcoholized" as a product with less than 1.1% ABV and "alcohol-free" with less than 0.05% ABV.[19] "Light wines" can have up to 9% ABV.[20]
  - **South Africa:** Establishes "low alcohol" for wines with more than 0.5% and less than 4.5% ABV; "dealcoholized" for wines with less than 0.5% ABV; and "alcohol-free" if the content is below 0.05% ABV.[7]
  - **Mercosur:** Wine must have a minimum of 7% ABV. If the alcohol content is reduced, it must be labeled as "Vino parcialmente desalcoholizado" (Partially

dealcoholized wine).[7]

- **China:** "Low-alcohol wines" range from 1% to 7% ABV, while "non-alcoholic wines" must have a natural alcohol content between 0.5% and 1% ABV.[20]
- **Japan:** Specific information on labeling regulations for NOLO wines was not found in detail in the sources consulted for this report [40], underscoring the need to consult official Japanese sources for a complete analysis.

Table 2: International Comparison of NOLO Wine Definitions and ABV Thresholds

Country/Region	Regulatory Body	Common Term	ABV Threshold (%)	Additional Notes
OIV	OIV	Dealcoholized	<0.5%	International reference; dealcoholization processes defined.
OIV	OIV	Partially Dealcoholized	≥0.5% and lower than the minimum of the original wine	
European Union	European Commission	Dealcoholized	≤0.5%	Regulation (EU) 2021/2117. Must be "wine" before dealcoholizing.
European Union	European Commission	Partially Dealcoholized	>0.5% and lower than the minimum of the original wine	Regulation (EU) 2021/2117.
United States	FDA / TTB	Non-alcoholic	<0.5%	Regulated by FDA (food labeling).
United States	FDA / TTB	Alcohol-free	<0.05%	
United States	FDA / TTB	(Wine <7% ABV)	0.5% - 7%	FDA (food labeling), TTB

				(additives).
United Kingdom	Dept. of Health & Social Care	Alcohol-free	≤0.05%	
United Kingdom	Dept. of Health & Social Care	De-alcoholised	≤0.5% (alcohol extracted)	
United Kingdom	Dept. of Health & Social Care	Low-alcohol	≤1.2%	WSTA proposals to align with EU (e.g., "alcohol-free" to ≤0.5%).
Australia/NZ	FSANZ	Non-alcoholic / Alcohol-free	<0.5%	Australia: "wine" >4.5% ABV.
Australia/NZ	FSANZ	Low-alcohol	0.5% - 1.15% (Australia) / No >1.15% (General)	
Canada	CFIA	Alcohol-free	<0.05%	
Canada	CFIA	Dealcoholized	<1.1%	"Light wines" ≤9% ABV.
South Africa	Dept. Agriculture, Land Reform & Rural Dev.	Alcohol-free	<0.05%	
South Africa	Dept. Agriculture, Land Reform & Rural Dev.	Dealcoholized	<0.5%	
South Africa	Dept. Agriculture, Land Reform & Rural Dev.	Low-alcohol	>0.5% and <4.5%	
Mercosur	Mercosur Wine	Partially	<7% (if base	Base wine min.

	Regulation	dealcoholized wine	wine alcohol is reduced)	7% ABV.
China	National Standards	Non-alcoholic wine	0.5% - 1% (natural)	
China	National Standards	Low-alcohol wine	1% - 7%	

Sources:.[6]

This table is fundamental for professionals in the sector, especially those involved in export and import, as it clearly visualizes regulatory fragmentation and terminological differences, vital for regulatory compliance and international marketing strategies.

C. Implications of Regulatory Divergence

The lack of global harmonization in the definitions and labeling of NOLO wines has direct and significant consequences. As noted [8], this inconsistency not only creates confusion among consumers, who may find similarly characterized products labeled differently in various markets, but also erects barriers to international trade. Companies must invest considerable resources in adapting their labels and, sometimes, their formulations to comply with the specific regulations of each destination country.

The varied (and sometimes contradictory) terminology – "non-alcoholic," "alcohol-free," "dealcoholized," "low alcohol," "light wine" – used in different countries [7] can dilute the marketing and branding efforts of companies seeking to build a global identity for their NOLO products. A product successfully marketed under one descriptor in one market may need refocusing in another, hindering the creation of a coherent global brand narrative. The need for standardized global definitions, possibly under the aegis of bodies like Codex Alimentarius, is a growing demand from the industry to facilitate a more transparent and efficient market.[8]

IV. Production Analysis

The production of non-alcoholic and low-alcohol (NOLO) wines is a process that combines traditional winemaking with specialized dealcoholization technologies and, increasingly, with innovations in viticulture and microbiology. The main objective is to reduce or eliminate the ethanol content of the wine while preserving its original sensory characteristics as much as possible.

A. Dealcoholization Technologies

Once the wine has completed its fermentation and development, various technologies can be applied to extract the alcohol. The most common are:

- Reverse Osmosis (RO):
  This method uses semipermeable membranes that, under pressure, allow water and ethanol to pass through while retaining most other wine components (aromas, color, acids, sugars, phenols). The permeate (water and ethanol) is distilled to separate the ethanol, and the dealcoholized water is reincorporated into the wine concentrate.4
  - **Advantages:** It is a process that generally does not subject the wine to high temperatures, which helps preserve the integrity of the product and its delicate aromas. It offers low wine volume loss and is technologically versatile for different production scales.[4]
  - **Challenges and Disadvantages:** Achieving very low alcohol levels (below 0.05% ABV) can be inefficient and costly with RO.[4] Furthermore, although considered a gentle method, there can be a selective loss of some volatile compounds and an impact on the final sensory balance of the wine.[9] Membrane fouling can also be an operational problem.
- Vacuum Distillation (including Spinning Cone Column - SCC):
  This technique is based on reducing atmospheric pressure within a distillation chamber, which significantly lowers the boiling point of ethanol. This allows alcohol to evaporate at relatively low temperatures (e.g., 25-35°C), minimizing thermal damage to sensitive wine compounds.4 The Spinning Cone Column (SCC) is an advanced and efficient form of vacuum distillation that uses a series of inverted, rotating cones to create a thin film of wine, facilitating alcohol evaporation and the capture of volatile aromatic compounds, which can be reincorporated into the dealcoholized wine.4
  - **Advantages:** Allows for gentle alcohol removal and good aroma recovery if managed properly. The SCC is known for its ability to fractionate and selectively recover different volatile compounds.
  - **Challenges and Disadvantages:** Can induce chemical changes in the wine, such as a reduction in pH and free SO_2, and an increase in titratable acidity and volatile acidity.[4] Inevitably, some loss of volatile compounds occurs along with the ethanol.[9] The SCC, in particular, is a technology that involves considerable capital investment and can have high operating costs.[7]
- Other Techniques:

Other methods exist, some of which are variants or combinations of the above:

- **Partial Vacuum Evaporation:** Similar to vacuum distillation, but may be less sophisticated in aroma recovery.
- **Osmotic Distillation (OD) and Membrane Contactors (MC):** These are membrane techniques that do not apply direct hydraulic pressure to the wine. In OD, wine flows on one side of a microporous hydrophobic membrane and an extracting solution (water) on the other. Ethanol is transferred across the membrane due to the vapor pressure difference. MCs can operate similarly. These techniques can be very selective for ethanol.[9]
- **Pervaporation:** Another membrane technique where the liquid is in contact with one side of the membrane and the permeate is removed as vapor from the other side.

The impact of each technology on the final quality of the wine (aroma, flavor, body, texture) is a primary consideration. The removal of ethanol, an important solvent, affects the solubility and volatility of aromatic compounds, tannin extraction during maceration, the perception of viscosity and body in the mouth, and the microbiological stability of the wine.[4] Therefore, the choice of technology and its correct application are crucial.

Regarding **costs and efficiency**, although there are no exhaustive and standardized comparisons in the consulted sources, it is recognized that different technologies involve different levels of capital investment, energy consumption, and operating costs.[4] The need for additional wine processing after its complete production inevitably adds a cost to the final product.[13] The SCC is considered one of the most expensive options.[7]

Table 3: Comparison of Wine Dealcoholization Technologies

Technology	Operating Principle	Key Advantages	Disadvantages/Challenges	Impact on Organoleptic Quality	Relative Cost/Efficiency Considerations
Reverse Osmosis (RO)	Membrane separation under pressure; permeate	Does not heat the wine, preserves integrity and	Difficult to efficiently achieve <0.05% ABV [4], possible	Can reduce esters and organic acids; affects body	Cost of membranes and energy; can be more economical

	(water/ethanol) is distilled, and water is reincorporated.	aroma, low volume loss, versatile. [4]	loss of volatiles, membrane fouling.	and aroma. [9]	on a large scale.
Vacuum Distillation (General)	Pressure reduction to lower ethanol's boiling point, evaporation at low temperature.	Gentle alcohol removal, minimizes thermal damage.	Loss of some volatile compounds, possible chemical changes (pH, acidity). [4]	Significant loss of esters and other volatiles if not properly recovered and reincorporated. [9]	Variable; depends on equipment sophistication and aroma recovery.
Spinning Cone Column (SCC)	Advanced vacuum distillation with rotating cones to create a thin wine film, facilitating evaporation and aroma recovery.	High efficiency in alcohol separation and aroma recovery. [4]	High capital investment, operating costs can be high. [7]	Allows good aroma recovery, but final quality depends on process management. Can alter balance if not handled carefully. [9]	Considered one of the most expensive options.
Osmotic Distillation (OD)	Transfer of ethanol across a microporous hydrophobic membrane to an extracting solution (water) by vapor pressure difference.	Low-temperature process, potentially very selective for ethanol.	Flow rates can be slow, requires management of the extracting solution.	Can lead to significant losses of esters and higher alcohols; impact on body and sweetness. [9]	Costs associated with membranes and handling large volumes of extracting water.
Membrane Contactors	Similar to OD, uses	Potential selectivity,	May require multiple	Variation in the	Similar to other

(MC)	membranes to facilitate mass transfer of ethanol.	low-temperature operation.	passes for deep dealcoholization.	concentration of aromatic alcohols and esters; increase in astringency and acidity. [9]	membrane technologies.

Sources:.[4]

For producers and oenologists, this table summarizes the key characteristics of each method, allowing an initial assessment of which might be most suitable for their quality, volume, and budget objectives.

B. Innovations in Winemaking

Beyond post-fermentation technologies, the industry is exploring innovative approaches to produce wines with lower alcohol content from the vineyard or during fermentation:

- Viticultural Practices:
  Techniques are being researched and applied in the vineyard to control sugar accumulation in grapes, resulting in lower potential alcohol content in the must. These practices include early harvesting (picking grapes before they reach full sugar ripeness), reducing the vine's leaf area (limiting photosynthetic capacity), and late pruning (delaying the ripening cycle).5 While these techniques can reduce final alcohol, they can also affect the development of aromatic precursors and phenolic maturity, so their application must be carefully managed.
- Microbiological Methods:
  The use of non-Saccharomyces yeasts is one of the most promising areas of innovation. Certain yeast strains like Metschnikowia pulcherrima, Torulaspora delbrueckii, or Zygosaccharomyces bailii can produce less ethanol from the same sugars compared to the traditional Saccharomyces cerevisiae, or can divert carbon metabolism towards the production of other compounds like glycerol, which can improve mouthfeel.5 Additionally, some of these yeasts can positively contribute to the wine's aromatic profile, increasing complexity with desirable esters and higher alcohols. Optimizing fermentation conditions, such as controlled aeration, also plays a role.5 In the longer term, genetic engineering of yeasts could offer solutions to produce compounds structurally similar to ethanol but non-intoxicating, although this raises other regulatory and consumer acceptance considerations.43
  These "preventive" or "gentler" approaches are attractive because they could be

perceived as more "natural" by consumers and potentially better preserve the wine's intrinsic profile, reducing the need for intensive subsequent dealcoholization.

- Importance of Base Wine Quality:
  A widespread consensus among oenologists and NOLO wine producers is the imperative need to start with an exceptionally high-quality base wine.4 The idea that dealcoholization can be a way to use lower-quality wines is erroneous. On the contrary, since the alcohol removal process inevitably subtracts or modifies some sensory components, starting with a wine that is already aromatic, flavorful, and balanced is fundamental to obtaining a final NOLO product that is attractive and enjoyable. Grape selection for NOLO wines is often based more on the intensity and profile of aromas and flavors than on traditional ripeness parameters like sugar and acidity levels.4 This demand for quality in the raw material implies that the production of high-end NOLO wines is not necessarily a low-cost process.

C. Main Producing Countries and Strategies of Leading Companies

Interest and investment in NOLO wine production are growing globally. Countries with strong winemaking traditions are beginning to stand out:

- **France:** Significant investment in production capacity is observed, with examples such as the Le Chai Sobre dealcoholization facility in Gers, with an annual capacity of 50,000 hectoliters, and the investment by the Bordeaux Families cooperative in its own dealcoholization plant.[14]
- **Italy and Spain:** Are also emerging as important players, with regulatory changes and growing interest from producers.[14]
- **Germany:** Has been a historical leader in non-alcoholic wine production, with companies like Carl Jung operating for decades.[14]

Large alcoholic beverage industry groups are recognizing the potential of the NOLO market and are actively investing, either through the development of line extensions of their existing brands or through the acquisition of specialized NOLO brands. Companies like Diageo, Pernod Ricard, Asahi, Anheuser-Busch InBev, and Moët Hennessy Louis Vuitton (LVMH) have made strategic moves in this space.[44] For example, Moët Hennessy acquired a minority stake in the super-premium non-alcoholic sparkling wine brand French Bloom.[14]

Concurrently, there is a growing ecosystem of specialized producers dedicated exclusively to NOLO wines. Some notable examples include:

- Europe: Le Mat (Romania), BevZero (Spain, also a technology provider), Le Petit

Béret (France), Oddbird (Sweden), Peter Herres (Germany).[15]
- North America: St-Regis Wines (Canada), Ariel Vineyards (USA), Grüvi (USA), Waterbrook (USA).[1]
- Oceania: McGuigan (Australia), Giesen (New Zealand).[1]
- Traditional producers who have made strong inroads: Castel Frères (France), Trinchero Family Estates (USA), Codorniu and Freixenet (Spain), Schloss Wachenheim AG (Germany), Australian Vintage Limited (Australia), Sutter Home Wine Estate (USA), Miguel Torres S.A (Spain).[1]

Investment in large dealcoholization facilities, often by cooperatives or companies offering third-party services (such as Le Chai Sobre or the Bordeaux Families facilities [14]), suggests professionalization and a pursuit of economies of scale in NOLO production. This could, in the long term, reduce production costs and make the technology more accessible to smaller wineries that cannot afford their own investment in dealcoholization equipment.

A technical aspect of production is the management of the ethanol stream separated during the dealcoholization process. This ethanol can be considered waste, implying disposal costs, or, if its quality permits and local regulations authorize, it could be recovered and sold as a byproduct for other uses, such as fortifying other wines or for industrial applications.[4] This duality presents both a management challenge and a potential revenue stream or cost reduction for producers.

D. Production Challenges

Despite advances, the production of high-quality NOLO wines continues to present significant challenges:

- **Organoleptic Profile:** This is undoubtedly the biggest hurdle. Ethanol not only provides the alcoholic sensation but also contributes significantly to body, viscosity, sweetness perception, and the volatility of aromatic compounds.[4] Its removal can result in wines that are perceived as thin, watery, excessively acidic, or with a diminished or altered aromatic profile. Recreating the complexity and balance of a traditional wine without alcohol is the "holy grail" of NOLO production.
- **Stability and Shelf Life:** Ethanol is a natural preservative. Its reduction or removal can make NOLO wines more susceptible to microbiological spoilage and oxidation, affecting their shelf life.[4] This may require the use of additional preservatives (which must be declared on the label according to food regulations in many markets) or more protective packaging techniques.
- **Scalability and Profitability:** Dealcoholization processes, especially those aimed

at preserving quality, can be costly and energy-intensive.[13] Investment in specialized equipment is high, and outsourcing dealcoholization services also adds considerable cost. Balancing quality with profitability, especially in a market where consumers may have lower price expectations, is a constant challenge.

V. Consumption Patterns and Consumer Behavior

The growing popularity of non-alcoholic and low-alcohol (NOLO) wines is intrinsically linked to an evolution in consumer habits and priorities globally. Understanding the drivers of this demand, the profile of those who opt for these beverages, and the factors influencing their purchasing decisions is fundamental for any wine sector player wishing to enter or expand in this market.

A. Key Demand Drivers

Several factors converge to drive the demand for NOLO wines:

- **Health and Wellness:** This is the main catalyst. There is increasing awareness of the long-term effects of excessive alcohol consumption and a desire to adopt healthier lifestyles.[2] NOLO wines are perceived as an alternative that allows enjoyment of a socially accepted beverage without the risks associated with alcohol. Additionally, the lower caloric content compared to traditional wines is attractive to diet-conscious consumers.[6]
- **Moderation:** The trend towards moderation in alcohol consumption is a global phenomenon, particularly pronounced among younger generations.[3] It is not necessarily about total abstinence, but rather more conscious and controlled consumption. Studies indicate that a significant proportion of wine consumers in mature markets like the US are actively moderating their intake [7], and surveys reveal that a considerable percentage of the population plans to reduce their alcohol consumption.[12] This "flexible moderation" means that many NOLO consumers also consume alcoholic beverages on other occasions, meaning NOLO products must compete in terms of quality and sensory experience not only with other NOLO options but also with their alcoholic counterparts.
- **Lifestyle and Social Occasions:** NOLO wines offer solutions for situations where alcohol consumption is not desirable or possible. This includes being able to drive safely after a social event, compatibility with certain medical treatments, pregnancy, or adherence to religious or ethical precepts that discourage alcohol.[7] A decrease in social pressure to consume alcohol at gatherings is also observed, facilitating the choice of NOLO alternatives.[6] These products are consumed throughout the year and on a variety of social occasions, not limited to specific periods like "Dry January."[12]

- **Improved Quality and Availability:** As production technology advances and producers invest in the quality of NOLO wines, the supply of products with more satisfactory flavor profiles closer to traditional wines has increased. This improvement in quality, along with greater availability in both on-trade and off-trade sales channels, is driving trial and adoption by consumers.[3]

B. Demographic Profile of the NOLO Consumer

While NOLO wines attract a diverse spectrum of consumers, certain demographic groups stand out as the main drivers of the trend:

- **Young People (Millennials and Generation Z):** These cohorts are consistently identified as the most curious, open to experimentation, and primary adopters of NOLO beverages.[2] In the US, for example, a 2022 Drizly study showed that 22% of millennials and 21% of the Generation Z population (of legal drinking age) were most interested in exploring non-alcoholic wine.[2] Millennials, in particular, tend to have the broadest NOLO consumption portfolios, trying different categories and brands.[3] This youth leadership suggests that marketing strategies for NOLO wines should adapt to their preferred communication channels (digital, social media) and resonate with their values, which often include sustainability, authenticity, and the pursuit of experiences. Traditional wine brands might need innovative approaches to attract this audience to the NOLO segment.
- **Other Segments:** Although young people lead, other groups are also relevant. Historically, non-alcoholic beverage consumption has been associated with pregnant or lactating women, and people who must abstain for medical or sports reasons.[7] While these groups remain important, the market has expanded considerably beyond these traditional niches.

C. Influencing Factors in Purchase and Barriers

The decision to buy (or not buy) a NOLO wine is influenced by a series of factors:

- **Taste and Perceived Quality:** This is, overwhelmingly, the most critical factor.[3] The main barrier to wider adoption remains the perception (often justified in the past) that NOLO wines are "less tasty," lack body, or have a sensory profile that does not compare favorably with traditional wine. Continuous taste improvement is, therefore, a fundamental driver for market growth.[3] As the market matures, consumers are no longer just looking for "anything non-alcoholic," but "a good non-alcoholic or low-alcohol product from a brand they trust."
- **Price:** Price is an important attribute in the purchasing decision, especially for younger consumers.[46] There is a tendency among consumers to expect NOLO wines to be cheaper than their alcoholic equivalents, often unaware of the

additional costs associated with the dealcoholization process and the need to use high-quality base wines.[13] This expectation of lower prices, despite potentially higher production costs, creates significant tension for producers.
- **Availability:** Greater and better availability in stores and restaurants drives purchases.[3] However, distribution can still be a challenge in some markets or specific channels, limiting consumer access to a variety of NOLO options.[29]
- **Brand and Labeling:** Brand familiarity and clear, informative, and attractive labeling are increasingly important to consumers.[3] Confusion generated by the diversity of regulatory terminology ("non-alcoholic," "dealcoholized," etc.) can be a barrier.[8]
- **Knowledge and Education:** There is still a lack of widespread knowledge among consumers about how NOLO wines are made, what to expect in terms of taste, and why their prices may be comparable to traditional wines.[46] Consumer education about the production process and added value can be crucial.

D. Perception of Quality and Taste: Challenges and Solutions

As mentioned, the main challenge for the NOLO wine industry is to overcome negative perceptions about taste and quality.[4] Alcohol is an integral component of wine, contributing not only to the "effect" but also to body, mouthfeel, stability, and how aromas and flavors are perceived. Its absence can lead to wines that feel "thin," "empty," or excessively acidic.[43]

Solutions to address these sensory challenges include:

- **Use of High-Quality Base Wine:** Starting with grapes and base wines with intense and balanced aromatic and gustatory profiles is fundamental.[4]
- **Technological Advances:** Continuous improvement of dealcoholization techniques (such as reverse osmosis and vacuum distillation) to minimize the loss of aromatic compounds and preserve the wine's structure.[4]
- **Additives and Adjustments (with caution):** Some producers may add small amounts of sugar, concentrated grape must, or glycerol to improve texture and body, although this must be managed carefully to avoid creating an unbalanced or excessively sweet product, and has implications for ingredient and nutritional labeling.[43]
- **Innovations in Yeasts and Fermentation:** The use of non-Saccharomyces yeasts that produce less alcohol and can contribute aromatic and textural complexity (e.g., higher glycerol production).[5]
- **Acidity Management:** Adjusting acidity to balance the lack of "weight" from alcohol.

Table 5: Consumer Motivations and Barriers towards NOLO Wines

Factor (Motivation/Barrier)	Detailed Description	Implication for the Industry
Motivations		
Health and Wellness	Reduction of caloric intake, avoiding negative effects of alcohol, pursuit of a healthier lifestyle. [2]	Communicate health benefits (lower alcohol, calories), position as part of a balanced lifestyle.
Moderation	Desire to reduce alcohol consumption without eliminating it completely, control over intake. [3]	Offer quality alternatives that allow moderation without sacrificing the social experience of wine.
Social Influence/Occasion	Ability to drive, pregnancy, medication, religious/ethical reasons, less social pressure to drink alcohol. [6]	Position as an inclusive option for all social occasions and individual needs.
Improved Quality/Taste	Perception that new NOLO products taste better than before, greater sophistication. [3]	Continuously invest in R&D to improve sensory profile. Communicate quality improvements.
Availability	Greater ease in finding NOLO products in stores and restaurants. [3]	Expand distribution in on-trade and off-trade channels. Ensure good visibility at the point of sale.
Barriers		
Taste/Perceived Quality	Concern that the taste is not comparable to traditional wine, perception of being "watery" or "too sweet/acidic." [4]	Prioritize sensory quality. Offer samples. Manage expectations through honest communication.
Price	Expectation that NOLO wines	Educate about added value

	are cheaper than alcoholic wine; lack of awareness of production costs. [13]	and production processes. Consider different price levels. Justify premium prices with superior quality and branding.
Knowledge/Education	Lack of knowledge about how NOLO wines are made, what to expect from them, or the variety of options available. [46]	Develop educational marketing campaigns. Provide clear information about the product and its benefits.
Labeling/Brand	Confusion due to terminology ("non-alcoholic," "dealcoholized," etc.), lack of trust in unknown brands. [3]	Use clear and consistent labeling (within regulatory allowances). Build strong and trustworthy brands in the NOLO segment. Leverage the reputation of established brands.

Sources:.[2]

Understanding these nuances of consumer behavior is essential. For example, consumer expectation to pay less for NOLO wines [46], despite potentially higher production costs [13], creates significant price tension. Educating consumers about the dealcoholization process and the added value of a quality product could be crucial to justify prices that reflect these costs and allow for the sustainability of the segment. Brands that effectively communicate the story behind a good NOLO wine, including the quality of the base wine and the sophistication of the dealcoholization process, could gain a significant competitive advantage.

VI. Price Dynamics and Economic Aspects

The pricing structure of non-alcoholic and low-alcohol (NOLO) wines is a critical component that influences both consumer perception and economic viability for producers. This section analyzes the price comparison with traditional wines, the factors composing production costs, the impact of taxation, and the quality-price ratio from the consumer's perspective.

A. Comparative Price Analysis

The question of whether NOLO wines are more expensive, cheaper, or have price parity with traditional alcoholic wines does not have a single answer, as it varies by market, quality segment, and specific brand. However, available data and industry observations suggest a trend towards price parity or, in some cases, slightly higher prices for quality NOLO products.

- A Wine Business report based on US data indicated that the average price per unit of non-alcoholic wine was $8.87, compared to $9.15 for regular wine, suggesting NOLO wines were slightly cheaper at that time and in that specific context.[48]
- However, more recent data from NIQ for the US market, also cited by Wine Business, showed that the average price of a 750ml bottle of table wine was $9.33, while a non-alcoholic wine averaged $10.06 per 750ml, indicating a slightly higher price for the NOLO option.[12] This same report noted that experts expect that, over time, price parity will be established between a NOLO wine and a full-alcohol wine of the same style and quality.

This apparent contradiction or variability in relative prices can be explained by several factors. On one hand, consumers often expect non-alcoholic products to be cheaper, assuming that the absence of alcohol (and its associated taxes) should translate into a lower cost.[13] On the other hand, the reality of producing quality NOLO wines involves significant additional costs, as will be detailed later.

The trend towards "price parity" [12] suggests that the NOLO market is increasingly positioning itself as an "equivalent" alternative in terms of experience and quality, rather than an inherently "cheap" or lower-value option. This positioning is crucial for the branding and marketing strategy of companies investing in the production of high-end NOLO wines.

B. Cost Structure

The production costs of NOLO wines are complex and often higher than those of equivalent traditional wines:

- **Base Wine Production:** The process begins with the production of a fully fermented wine. As highlighted earlier, the industry agrees that a high-quality, aromatic, and well-structured base wine is required to produce a good NOLO product.[4] This may involve using higher-cost grapes and careful winemaking practices, which already establishes a high cost base.
- **Dealcoholization Process:** This is the most significant differential cost. Technologies for removing alcohol (reverse osmosis, vacuum distillation, SCC, etc.) require considerable investment in specialized equipment or payment for third-party services.[13] These processes consume energy and require qualified personnel, adding a significant unit cost to the final product.
- **Additives and Post-Dealcoholization Adjustments:** After alcohol removal, adjustments may be necessary to improve the sensory profile (flavor, body,

texture) or ensure the product's microbiological stability. This may involve using concentrated grape must, sugars, glycerol, acidifiers, or preservatives, each with its own cost and implications for labeling.[31]

- **Volume Losses:** Although some technologies like RO boast low volume losses [4], other processes may involve a loss of the original product, which also impacts the final cost.
- **Packaging, Marketing, and Distribution:** These costs are, in principle, similar to those of traditional wines. However, marketing NOLO wines may require additional investment to educate consumers, build the category, and overcome potential skepticism about quality.

The combination of a quality base wine and a costly dealcoholization process largely explains why NOLO wines are not significantly cheaper than alcoholic wines, despite tax savings.

C. Impact of Taxation

The taxation of alcoholic beverages is an important factor differentiating NOLO wines from their traditional counterparts:

- **Excise Duties:** In most jurisdictions, beverages with an alcohol content below a specific threshold (commonly 1.2% ABV or 0.5% ABV) are exempt from excise duties on alcohol, or pay considerably reduced rates.[50] This represents a theoretical advantage in the cost structure of NOLO wines.
  - For example, in Sweden, wines with an ABV between >1.2% and ≤2.25% pay no alcohol tax, while those with >8.5% and ≤15% ABV have a rate of 29.58 SEK per liter in 2024. Non-alcoholic wines, although exempt from this tax, have a specific surcharge from Systembolaget (the state alcohol retail monopoly) that is slightly higher than that for alcoholic wines (5.92 SEK vs 5.40 SEK).[51]
  - A European Commission document concerning Ireland mentions exemptions for non-alcoholic wines from the Sugar Sweetened Drinks tax (SSD), which could be relevant if no sugar is added.[52] The key question is whether this saving in excise duties is effectively passed on to the final consumer price or if it is absorbed by higher production costs. Evidence suggests that, in many cases, production costs (especially dealcoholization and base wine quality) are predominant factors that offset tax savings.[12]
- **Value Added Tax (VAT):** NOLO wines are generally subject to VAT like any other beverage or food product. VAT rates can vary between countries and, in some cases, might differ between alcoholic and non-alcoholic beverages. For example, in Sweden, the VAT for alcoholic beverages is 25%.[51] The applicable VAT rate for NOLO products in key markets should be investigated specifically, as it can add

another layer of complexity to international pricing, even if alcohol excise duties are nil.

Direct government sources from the USA (TTB, IRS) [53] and Australia (ATO) [57] consulted for this report did not provide specific and comparative details on the federal taxation of NOLO wines versus alcoholic wines, although the general exemption from excise duties for very low alcohol content products is a common practice.[50]

D. Quality-Price Ratio and Consumer Expectations

There is an inherent tension between the cost structure of quality NOLO wines and consumer price expectations. Many consumers, not perceiving alcohol, assume the product should be cheaper.[13] However, as analyzed, producing a NOLO wine that offers a satisfactory sensory experience is a complex and costly process.

The industry faces the challenge of educating consumers about the intrinsic value of these products: the quality of the original wine, the sophistication of the dealcoholization technology used to preserve aromas and flavors, and the benefit of being able to enjoy a wine-like beverage without the effects of alcohol. Brands that effectively communicate this value and justify a price reflecting quality and production costs will have a higher probability of success. Continuous improvement in sensory quality is fundamental for consumers to perceive a favorable quality-price ratio, even if prices are comparable to traditional wines.

VII. Market Trends and Future Outlook

The non-alcoholic and low-alcohol (NOLO) wine market is not only growing in size but also rapidly evolving in terms of product innovation, market strategies, and consumer expectations. Several key trends are shaping its future trajectory.

A. Product Innovation and Premiumization

One of the most significant trends is the constant effort to improve the sensory quality of NOLO wines.[5] Producers are investing in research and development to overcome the organoleptic challenges associated with alcohol removal, seeking to offer products that more faithfully mimic the complexity, balance, and nuances of traditional wines. This includes the development of NOLO wines that reflect specific varietal profiles (such as non-alcoholic Cabernet Sauvignon, Chardonnay, Sauvignon Blanc) and, potentially in the future, characteristics of particular terroirs.

Concurrently, a clear trend towards **premiumization** is observed within the NOLO segment.[8] As quality improves, consumers are showing a willingness to pay higher prices for NOLO wines that offer a superior experience. This aligns with the macro-trend of "drinking less, but better," where consumers prioritize quality over quantity. Brands like French Bloom, with non-alcoholic sparkling wines reaching prices of up to $119 USD, exemplify the potential of this premium end of the market.[14] Premiumization is crucial because it not only helps overcome the historical perception of low quality in NOLO wines but also allows producers to justify the higher prices needed to cover high-quality production costs.

B. Rise of Organic and Vegan NOLO Wines

The growing demand for NOLO products converges with other important conscious consumption trends: the preference for organic and vegan products.

- **Organic NOLO Wines:** The global organic wine market is experiencing significant growth [16], and this trend is naturally extending to the NOLO segment. Consumers who choose NOLO for health and wellness reasons often also value organic production methods that avoid the use of synthetic pesticides and herbicides. Producers like Le Petit Béret and Oddbird already offer organic NOLO options.[15]
- **Vegan NOLO Wines:** Similarly, the demand for vegan wines is on the rise, driven by ethical considerations regarding the use of animal-derived products (such as egg whites, gelatin, or isinglass) in traditional wine clarification processes, as well as sustainability concerns.[59] Many wineries, including those producing NOLO wines, are adopting vegan winemaking practices and labeling their products accordingly.

The confluence of these three trends –NOLO, organic, and vegan– creates a market niche with strong appeal for specific consumer segments, especially Millennials and Generation Z, who seek products that align with a holistic set of values related to personal health, animal ethics, and environmental sustainability. Products that can offer this "triple benefit" have considerable differentiation potential.

C. Packaging Evolution

The packaging of NOLO wines is also evolving, reflecting broader trends in the beverage industry:

- **Growth of Cans:** Cans are gaining significant traction in the NOLO market.[2] They offer advantages in terms of convenience (single-serve, portability, rapid cooling), sustainability (they are lightweight and highly recyclable), and appeal to a younger audience who may perceive them as more modern and informal than traditional glass bottles. The NOLO segment, being less constrained by the entrenched traditions of wine, could adopt alternative packaging formats at a faster pace than conventional wine.

- **Other Alternatives:** Formats like bag-in-box and recycled PET are also being explored, especially for NOLO wines intended for more casual consumption or to reduce the carbon footprint in logistics.[27]
- **Lighter Glass Bottles:** Even within the traditional glass bottle format, there is a trend towards using lighter glass to reduce weight, transport costs, and environmental impact.[2]

D. Competitive Landscape and Strategic Moves

The dynamism of the NOLO market is attracting a variety of players and generating notable strategic moves:

- **Entry of Large Players:** Large corporations in the alcoholic and non-alcoholic beverage industry are entering the NOLO market, either by launching line extensions of their established brands or by acquiring specialized brands.[44] This entry of giants has a dual effect: on one hand, it legitimizes and accelerates market growth through increased investment in marketing, R&D, and distribution; on the other, it intensifies competition for smaller, specialized producers.
- **Market Consolidation and M&A:** Mergers and acquisitions (M&A) activity is expected to continue as the market matures and companies seek to gain scale, expand their product portfolios, and access new technologies or distribution channels.[45]
- **Emergence of Specialized Brands:** Alongside large conglomerates, an ecosystem of smaller, agile brands dedicated exclusively to developing and marketing innovative, high-quality NOLO products continues to flourish.[1]
- **Investment in R&D and Production Capacity:** Significant investments are being made both in research into new dealcoholization techniques and flavor improvement, and in expanding production capacity to meet growing demand.[14]

E. Opportunities in Emerging Markets and Specific Niches

While established markets in North America and Europe are currently the largest, significant opportunities exist in other areas:

- **Asia-Pacific:** As mentioned earlier, this region is projected to be the fastest-growing for non-alcoholic wine [1], offering vast potential for brands that can adapt their products and messages to local preferences.
- **Countries with Alcohol Restrictions:** Markets in regions like the Middle East, where cultural or religious restrictions on alcohol consumption exist, represent a natural niche for high-quality non-alcoholic wines.[18]
- **On-Trade Channel:** As more restaurants, bars, and hotels seek to offer inclusive

and sophisticated options for all their customers, the on-trade channel (out-of-home consumption) presents an important area of expansion for NOLO wines.[2]

F. Growth Projections and Future Scenarios

Growth projections for the NOLO market are consistently optimistic, with double-digit CAGR rates forecasted by various sources for the next decade.[1] If the NOLO wine category were to achieve a market share similar to that of non-alcoholic beer (which is around 2% of the total beer market in some markets), this would represent a sales opportunity of millions of additional cases each year for the wine industry.[12]

The sustainability of this growth will depend on several factors, including:

- **Continuous Technological Advances:** Improvements in dealcoholization techniques resulting in products with sensory profiles indistinguishable or very close to traditional wines.
- **Regulatory Evolution:** Greater harmonization of definitions and labeling regulations internationally could facilitate trade and consumer understanding.
- **Changes in Consumer Preferences:** Consolidation of the trend towards moderation and health and wellness.
- **Effective Marketing Strategies:** The industry's ability to educate consumers, communicate the value of NOLO products, and build strong brands.

The future of the NOLO wine market appears promising, but its full development will require a continued commitment to quality, innovation, and a deep understanding of the changing needs of global consumers.

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IX. Annexes

Glossary of Technical Terms and Acronyms

- **ABV:** Alcohol By Volume
- **ATO:** Australian Taxation Office
- **CAGR:** Compound Annual Growth Rate
- **DTC:** Direct-to-Consumer
- **FDA:** Food and Drug Administration (USA)
- **FSANZ:** Food Standards Australia New Zealand
- **IWSR:** International Wine and Spirit Research
- **MC:** Membrane Contactor - dealcoholization technology.
- **NOLO:** No- and Low-alcohol
- **OD:** Osmotic Distillation - dealcoholization technology.
- **OIV:** Organisation Internationale de la Vigne et du Vin (International Organisation of Vine and Wine)
- **RO:** Reverse Osmosis - dealcoholization technology.
- **SCC:** Spinning Cone Column - dealcoholization technology.
- **SEK:** Swedish Krona (currency).
- **TTB:** Alcohol and Tobacco Tax and Trade Bureau (USA)
- **USD:** United States Dollar.
- **VAT:** Value Added Tax.
- **WSTA:** Wine and Spirit Trade Association (UK).

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