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INDUSTRIAL USE OF WINE





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Abbreviations

hl: hectolitres

khl: thousands of hectolitres

mhl: millions of hectolitres

W.B.B: Wine Based Beverages



INTRODUCTION

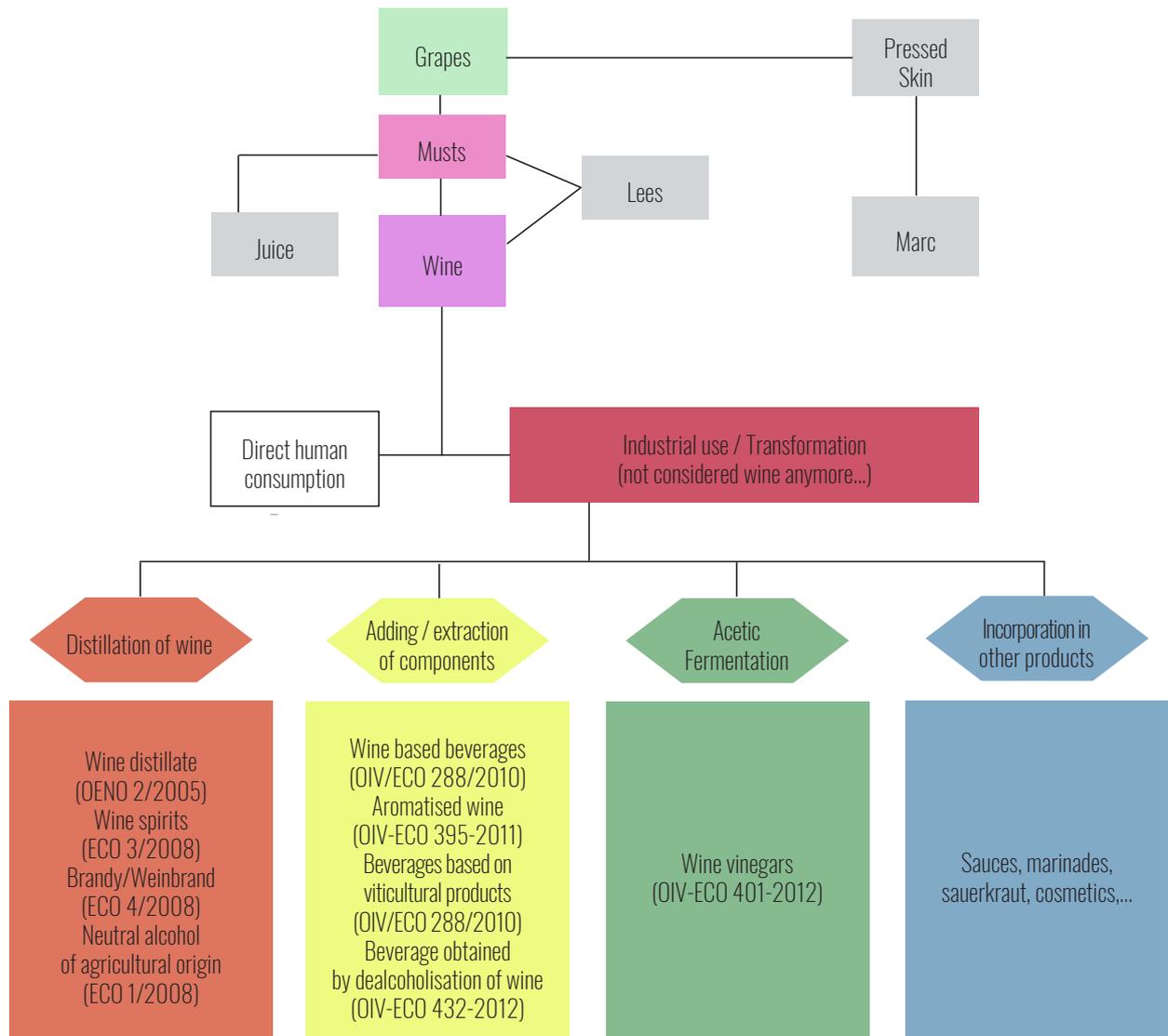
The purpose of this report is to provide an overview of the industrial use of wine and its place in the sector.

This focus is very important for analysis of statistical data. Indeed, industrial use of wine represents on average around 12% of total wine production.

With the term industrial use of wine we consider a transformation of wine, such as distillation, modification of compounds, acetic fermentation, or integration in other products.

The global balance sheet of production and consumption of wines shows every year a surplus, which is attributed to industrial use of wine.

This study seeks, for the first time, to confirm this assumption and to estimate the volume of wine used to make the different industrial products derived from wine.





METHODOLOGY

For the majority of products coming from the industrial use of wine, economic information does not exist as an end in itself and is relatively difficult to obtain or to reconstruct, in most countries and at a global level.

The following sources were used to evaluate production data:

- data obtained from a questionnaire completed by OIV Member States
- data from public sources, such as national statistical agencies
- data from the European Commission

In order to make an estimation of the world industrial use of wine we assume that the countries for which we have data are the main producers of the products, based on qualitative knowledge (although this cannot be entirely assured).

We also assume that the weight of these countries in the input of wine for industrial purposes is distributed as the weight of the same countries in the overall production of wines.



DEFINITIONS OF PROCESSES AND PRODUCTS

This study, as mentioned above, will look into wine that is not consumed directly but industrially used.

According to their process of transformation we can have:

- 1 • Distillation of wine
- 2 • Adding/extraction of components
- 3 • Acetic fermentation of wine
- 4 • Incorporation in other products

1 • Distillation of wine

Distillation of wine is a process that concentrates alcohol, and aims to also do so for aromas, via a process involving heat¹. Alcohol, and most aroma compounds, are volatile compounds. Volatile compounds are among the first compounds which will react and separate from the original product, in this case wine, when heat is applied. As the wine heats to a boil, vapour composed of alcohols, flavour compounds and water rise from the wine. In the distillation process this vapour is funnelled or captured in a separate receptacle, is cooled and settles as the product of the distillation or 'distillate'.

The OIV has defined, in its International Code of Oenological Practices, all vitivincultural products, including those obtained by distillation. Products derived from the distillation of wine can fall within one, or more, of four OIV product definitions:

- Wine distillate (OENO 2/2005)
- Wine spirits (ECO 3/2008)
- Brandy/Weinbrand (ECO 4/2008)
- Neutral alcohol of vitivincultural origin (ECO 2/2008)

The International Code of Oenological Practices also provides definitions of products obtained by distillation of other vitivincultural products than wine: marc, grapes, raisins and wine lees. These products are outside the scope of this study focused on the industrial use of wine.

Chemically all types of wine distillation are similar, yet many different production processes are used around the world, creating a wide variety of possible final products.

¹ The vast majority of the alcohol produced via the fermentation of sugar in the winemaking process, then concentrated via distillation, is ethyl alcohol or ethanol. Ethanol is, on its own, clear, colourless with an agreeable smell. The traditional distillation process produces an ethanol that is not pure or 100% ethanol molecules. It is the ~5% of impurity that gives each distillate its unique taste and flavour as these are other types of alcohols or aroma compounds. <https://sciencing.com/difference-between-ethanol-alcohol-8169825.html>

² The terms 'eau-de-vie' and 'acquavite' are derived from the old Latin term 'aqua vitæ' which literally translates to "water of life". While this term was classically used to refer to all distillates, its common use slowly transformed to distillates of other alcoholic beverages than for specifically wine distillates.

³ <https://www.winesandspiritsacademy.com/blog/pot-still-vs-column-still/> - <https://barleyhaven.com/pot-still-vs-reflux-still>

a) Wine distillate (OENO 2/2005)

Wine distillate is an alcoholic liquid produced by direct distillation of wine and possibly wine distillate added or by re-distillation of a wine distillate.

Unlike neutral alcohol of vitivincultural origin, wine distillate must have the aroma of the above mentioned raw materials.

b) Wine Spirits (ECO 3/2008)

Wine spirits, referred to by the French term 'eaux-de-vie' or Italian 'acquavite'², are exclusively obtained by the distillation of wine, fortified wine, wine possibly with the addition of wine distillate or by re-distillation of wine distillates with the result that the product retains the taste and aroma of the above-mentioned raw materials. Alcoholic strength of the end product must not be less than 37.5% volume.

Wine spirits category covers a considerable diversity of products, based on their ageing periods and methods, style of distillation and type of still used³.

c) Brandy/Weinbrand (ECO 4/2008)

Brandy or Weinbrand is a spirit beverage obtained exclusively by the distillation of wine, fortified wine, wine possibly with the addition of wine distillate or by re-distillation of a wine distillate with the result that the product retains the taste and aroma of the above-mentioned raw materials. A certain period of aging in oak wood containers is obligatory before marketing. Alcoholic strength of the end product must not be less than 36% volume.

d) Neutral alcohol of vitivincultural origin (ECO 2/2008)

Ethyl alcohol obtained by distillation and rectification, with a minimum alcoholic strength of 96% volume, either after alcoholic fermentation, products of vitivincultural origin such as grape must, grapes or raisins, grape marcs of wine, wine with the addition of wine distillate, wine lees which present no detectable taste. These products are not destined for direct human consumption. Some possible uses include bioethanol, perfumes, etc.



2 • Addition/extraction of components

In this category we include wines that are transformed by one or more processes including dealcoholisation, colouring, aromatisation, sweetening and addition of food products, and any other oenological practice.

The OIV defines four different products that fall in this category:

- Wine Based Beverages (OIV/ECO 288/2010) & Beverages Based on Vitivinicultural products (OIV/ECO 288/2010)
- Aromatised wine/ Vermouth (OIV-ECO 395-2011)
- Beverages obtained by (partial) dealcoholisation of wine (OIV-ECO 433-2012, OIV-ECO 432-2012)

a) Wine Based Beverages & Beverages Based on Vitivinicultural products

The OIV resolution OIV/ECO 288/2010 defines wine based beverages and beverages based on vitivinicultural products.

Wine Based Beverages are defined as: “a beverage obtained from at least 50% by volume of wine, and/or special wine as defined in the International Code of Oenological Practices of the OIV, which could have undergone the following treatments:

- sweetening
- colouring
- addition of aromatising substances or preparations
- addition of food-related products, such as must or nonalcoholic products or beverages including water

for which the actual alcoholic strength by volume is equal to or above 3.5% vol. and below 14.5% vol., and for which the alcoholic component derives exclusively from the wine or special wine used, except for doses used only to dilute aromatic substances, or colorants, or any other authorised substance.”

Beverages Based on Vitivinicultural Products are defined as: “obtained from at least 50% by volume of wine, and/or special wine and/or must as defined in the International Code of Oenological Practices of the OIV, which could have undergone the following treatments:

- sweetening
- colouring
- addition of aromatising substances or preparations
- addition of food-related products or non alcoholic products or beverages including water

for which the actual alcoholic strength by volume is equal to or above 1.2% vol. and below 14.5% vol., and for which the alcoholic component derives exclusively from the wine or special wine used, except for doses used only to dilute aromatic substances, or colorants, or any other authorised substance.”

b) Aromatised wine/Vermouth

Ancient civilisations such as Egypt, China, Greece and the Roman Empire, produced a type of wine, or fermented beverage, with residues or infusions of other products, mainly wormwood. These beverages continued to be produced and alongside continued to evolve into the 18th century⁴.

Among the first commercialised vermouths was a product originating in Turin, Italy which was named ‘wermut’ as a tribute to the German connections of the Duchy of Savoy, whose capital was Turin⁵.

As vermouth continued to evolve, other aromatisation techniques and processes were tested and put into practice. While vermouth remains the common usage name, vermouths actually fall into an OIV category of products called ‘Aromatised Wines’.

The OIV provides the following definition of aromatised wines:

“Aromatised wine is a beverage:

- obtained from at least 75% by volume of wine and/or special wine, as defined in the International Code of Oenological Practices of the OIV, and which has undergone an aromatisation process;
- to which ethyl alcohol of viticultural origin and/or a wine distillate and/or alcohol of agricultural origin could have been added;
- which could have undergone a sweetening;
- which could have undergone a colouring;
- which could have undergone one or more of other specific oenological practices applicable to this beverage;
- with an actual alcoholic strength by volume varying between 14.5% minimum and 22%”

The major differences between aromatised wines and wine based beverages are the percentage of wine in the final product (75% for aromatised wine vs 50% in wine based beverages) and the alcohol content (between 14.5% and 22% in aromatised wines compared to between 3.5% and 14.5% for wine based beverages)

c) Products obtained by (partial) dealcoholisation

Beverage obtained by dealcoholisation of wine

⁴ Mattick LR and Robinson WB, Changes in volatile acids during the baking of sherry wine and by the Tressler baking process, AM J Emol Vitiv, 1960, 11, 113-116.

⁵ Phillip Duff PPT for Vermouth Institute.



is a beverage:

- obtained exclusively from wine or special wine as described in the International Code of oenological practices of the OIV;
- which has undergone exclusively specific for this type of products treatments in accordance with the OIV International Code of Oenological practices, in particular a dealcoholisation;
- and with an alcoholic strength by volume below 0.5% vol.

Beverage obtained by partial dealcoholisation of wine is a beverage:

- obtained exclusively from wine or special wine as described in the International Code of oenological practices of the OIV;
- which has undergone exclusively specific for this type of products treatments in accordance with the OIV International Code of Oenological practices, in particular a dealcoholisation
- and with an alcoholic strength by volume equal or above 0.5% vol. and less than the applicable minimum alcoholic strength of wine or special wine.

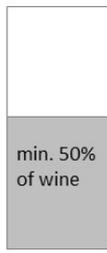
Aromatised wine/ Vermouth



aromatisation
colouring
addition of ethyl alcohol of viticultural origin and/or a wine distillate

TVA 14.5% to 22%

Wine Based Beverages & Beverages Based on Vitivinicultural Products



sweetening
colouring
addition of food-related products or non alcoholic products or beverages including water

TVA 1.2% to 14.5%

Products obtained by (partial) dealcoholisation



obtained exclusively from wine production practices , eventually sweetening and aromatisation (under discussion)

TVA 0% to 0.5%
TVA 0.5% to wine



3 • Acetic fermentation

a) Wine Vinegars

Vinegars can be classified by the base product used for their production. Some of the most common types of vinegars include⁶:

- Wine Vinegar (both red and white)
- Cider Vinegar
- Infused or Flavoured Vinegar
- Malt Vinegar
- Rice Vinegar
- White Distilled Vinegar

Vinegar is produced via a fermentation process⁷.

The speed of the fermentation can vary based on multiple factors including, but not limited to, the type of bacteria involved in the fermentation and contact with oxygen. In the case of wine vinegar the fermentation is carried out primarily by acetic acid bacteria. Wine vinegars, and vinegars in general, can be classified into two types, traditional and commercial⁸.

Traditional production methods tend to be much slower than commercial methods⁹. Traditional production can take months or years for the fermentation to take place as the process is left to occur naturally with the bacteria, sugar, and alcohol in the original wine. Commercial or fast vinegar production involves the addition of a 'mother of vinegar' which contains sugar and acetic acids to stimulate the fermentation process. In addition the fermentation in the production of commercial vinegars will be stimulated by oxygen via continuous air sparging or other methods¹⁰. These processes shorten the production time to a matter of days rather than months or years.

Working via the OIV definition OIV-ECO 401-2012, it is relatively simple to treat wine vinegars as a unique product type:

"Wine vinegar is a product suitable for human consumption, produced exclusively by the acetic fermentation of wine with a minimum acidity of 60 g/L expressed as acetic acid and with a maximum ethanol content of 4% vol."

While the OIV has provided a definition for Wine Vinegars, they are not defined as an individual products within the sphere of international trade by the World Customs Organization. The Harmonised System (HS) code only provides a category for vinegars, HS 2209, but there is no further breakdown based on type of vinegar. It is possible that certain countries do keep data on individual vinegar types via internal codes at the 9th digit level but data is sporadic at best. This publication will focus on data provided by member states and obtained via other official sources on the quantities of wine destined for or earmarked for vinegar production.

4 • Other Industrial Uses of Wine

The OIV does not define food products, even those in which wine is an integral part. Two of the major products that use wine are certain variations of sauerkraut and also pre-made sauces/marinades.

These products do not necessarily have their own HS codes. In addition, even if there were data available via HS codes, it would be very difficult to quantify the use of wine in these products as recipes can vary from producer to producer and international trade data would only be available for the final product.

As mentioned above the data presented here are provided by Member States or other official sources but cannot be considered complete on a worldwide level as there is almost certainly familial production and utilisation of these types of products that are not controlled or quantified.

One important industrial use of wine that does not meet the above definitions are wine coolers. Wine coolers are alcoholic beverages made from wine and fruit juice, carbonated beverage and sugar in proportions which do not allow them to fit in the definition of aromatised wines or wine based beverages.

6 Berry B. 'The Global Vinegar Market: Opportunities for Canadian Vinegar Exporters'. Agriculture and Agri-Food Canada. January 2011.
7 <https://academic.oup.com/jb/article-abstract/46/9/1217/2183731>

8 <http://www.jmb.or.kr/journal/viewJournal.html?doi=10.4014/jmb.1408.08021>

9 <https://onlinelibrary.wiley.com/doi/pdf/10.1111/1750-3841.12434>

10 Ibidem.



MARKET ANALYSIS OF THE INDUSTRIAL USE OF WINE

This section provides an evaluation and analysis of volumes of wine destined to industrial uses. More precisely, it examines the volume of wine devoted for the production of wine spirits and brandies, wine based beverages, aromatised wines and wine vinegars, and its evolution over time.

As described above various products can be derived from wine through different processes of transformation; however, the lack of information allows only the evaluation of wine quantities used to make Wine Spirits and Brandies, Wine Based Beverages and Aromatised wines, Wine vinegars.

In 2016, 13% of world wine production (almost 34 mhl) was used for industrial purposes (i.e. production of brandies, vinegars and vermouths)¹¹.

As shown in Figure 1, the wine used for industrial purposes saw a decrease in 2011, mainly due to a reduction of the wine used for distillation in Europe. Between 2011 and 2016 the input of wine for industrial purposes increased by 18%. This growth was mainly driven by the increase in quantities of wine destined for industrial purposes in Spain, South Africa, Germany and Argentina.

France, Spain, Italy and the USA are the biggest users of wine for industrial purposes in 2016: together they account for 65% of the total volume of wine that is industrially transformed.

In France 18% of wine production (8.3 mhl) is used for industrial purposes in 2016. This share seems to be stable since 2001.

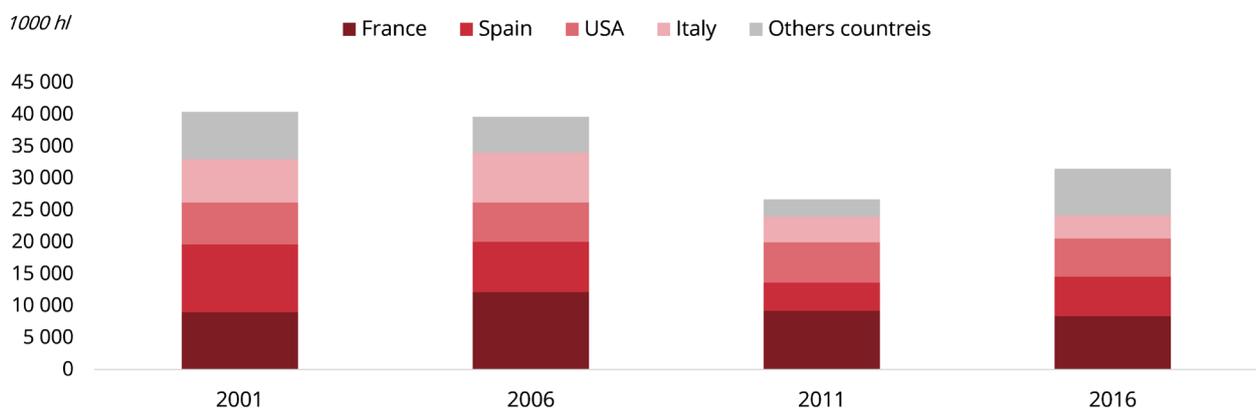
In Spain this share decreased from 35% in 2001 to 16% in 2016 (from more than 10 mhl in 2011 to 6.2 mhl in 2016).

In the USA 25% of the wine production (about 6 mhl) goes to the industry, a decrease of 9% point between 2001 and 2016.

In Italy the share of wine for industrial purpose is estimated at 7% of its wine production in 2016 (3.6 mhl); this share was at 14% in 2001.

By type of products, in 2016 65% (22 mhl) of the wine input was distilled, 14% (almost 5 mhl) was used for the production of wine based beverages and aromatised wines, and 14% for the production of wine vinegars.

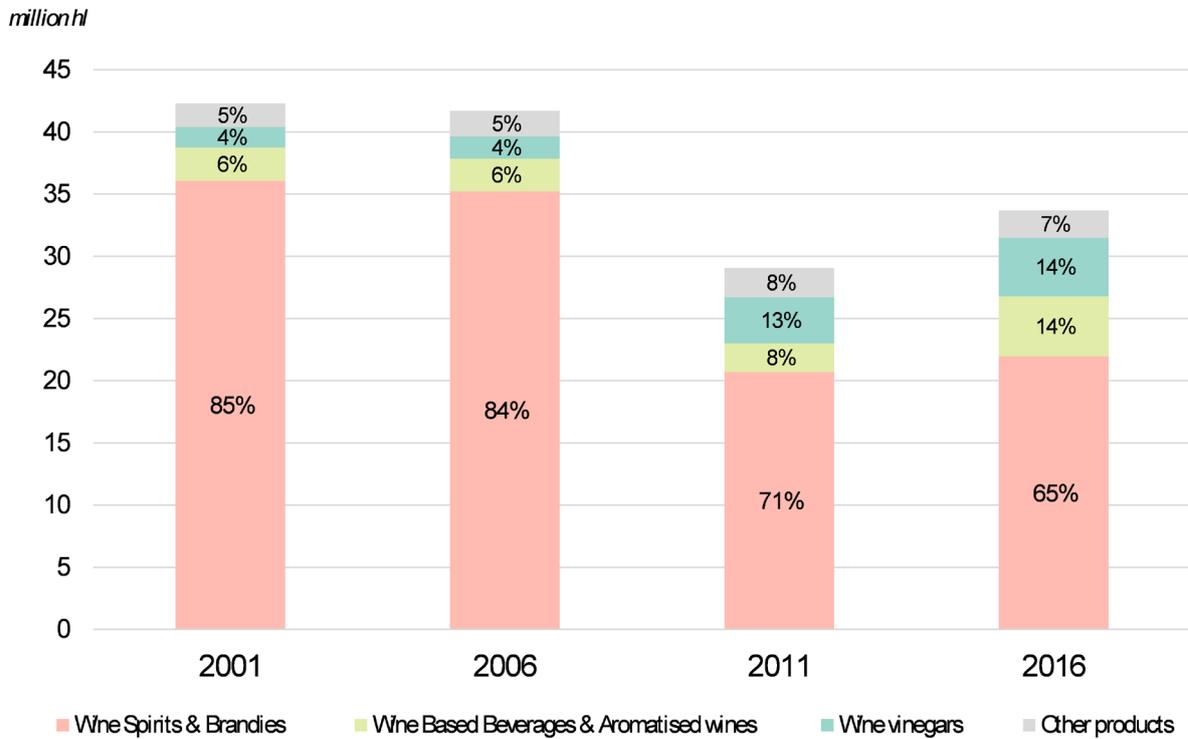
Figure 1: Repartition of wine for industrial use by country



¹¹ This estimation is based on data available for 23 countries, the others countries have been estimated according to the methodology described above.



Figure 2: Repartition of wine input by type of destination



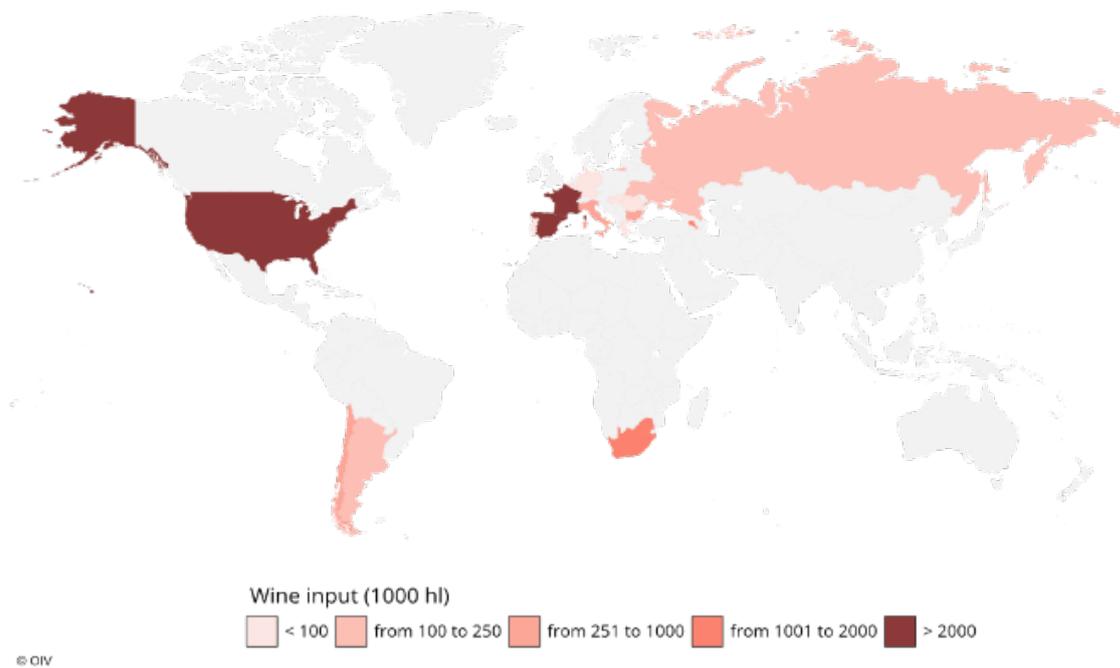
As shown in Figure 2, in 2001 89% of wine input was distilled, 7% was used for wine based beverages and aromatised wines, and 4% for the production of wine vinegars. The market for these beverages seems to be expanding, highlighted by the success of the 'rosé-pamplemousse' in France (mixture of grapefruit juice and rosé wine) for example and the return of vermouth consumption.



1 • Wine Spirits and Brandies

In 2016, the volume of wine to be distilled¹² reached 22 mhl, which represents over 8% of the world wine production.

Wine input for distillation in 2016

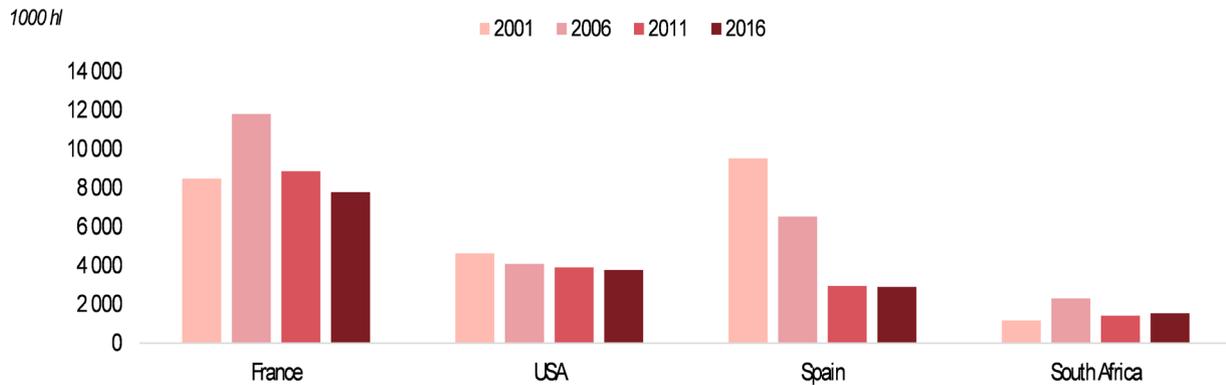


Wine used for distillation decreased: from 36 mhl in 2001 to 22 mhl in 2016. In particular, by looking at the major producing countries, distillation decreased substantially in Spain, Italy and to a lesser extent in the USA.

¹² In the European Union distillation of table wine is one of the various measures taken in response to the wine surplus (Council Regulation (EC) No 1493/1999). Distillation has been used continually in the face of the persistent wine surplus. Since 2006, the European Commission has been engaged in a process of progressively change this support policy. A period of transition therefore takes place from 2008 onwards with the reform of wine Common Market Organization (CMO) and this abandon is finally implemented in 2013 with the reform of the Common Market Organization 1308/2013 Regulation (EU) No 1308/2013.



Wine input for wine distillation: leading countries



From the above graph, we can observe:

- France is the first producing country of wine spirits and brandies, with an input of wine of 7.8 mhl in 2016. 17% of French wine production goes into the distillation. This share represents only the wine used for the production of Cognac and Armagnac.
- With 3.8 mhl of wine distilled in 2016 (16% of its wine production), USA is the second producer of wine spirits and brandies. Input wine for distillation has been decreasing over time, -19% since 2001.
- Spain is in third place with 2.9 mhl in 2016, representing 7% of its wine production. After a drop in 2011, wine distillation has stabilised between 2011 and 2016 at around 3 mhl. Over the period 2001-2010 it averaged 7 mhl.
- In South Africa 1.5 mhl of wine is distilled, which represents 15% of the total wine production. 2016 level is in line with the 5 year average of the 2011-2016 period.



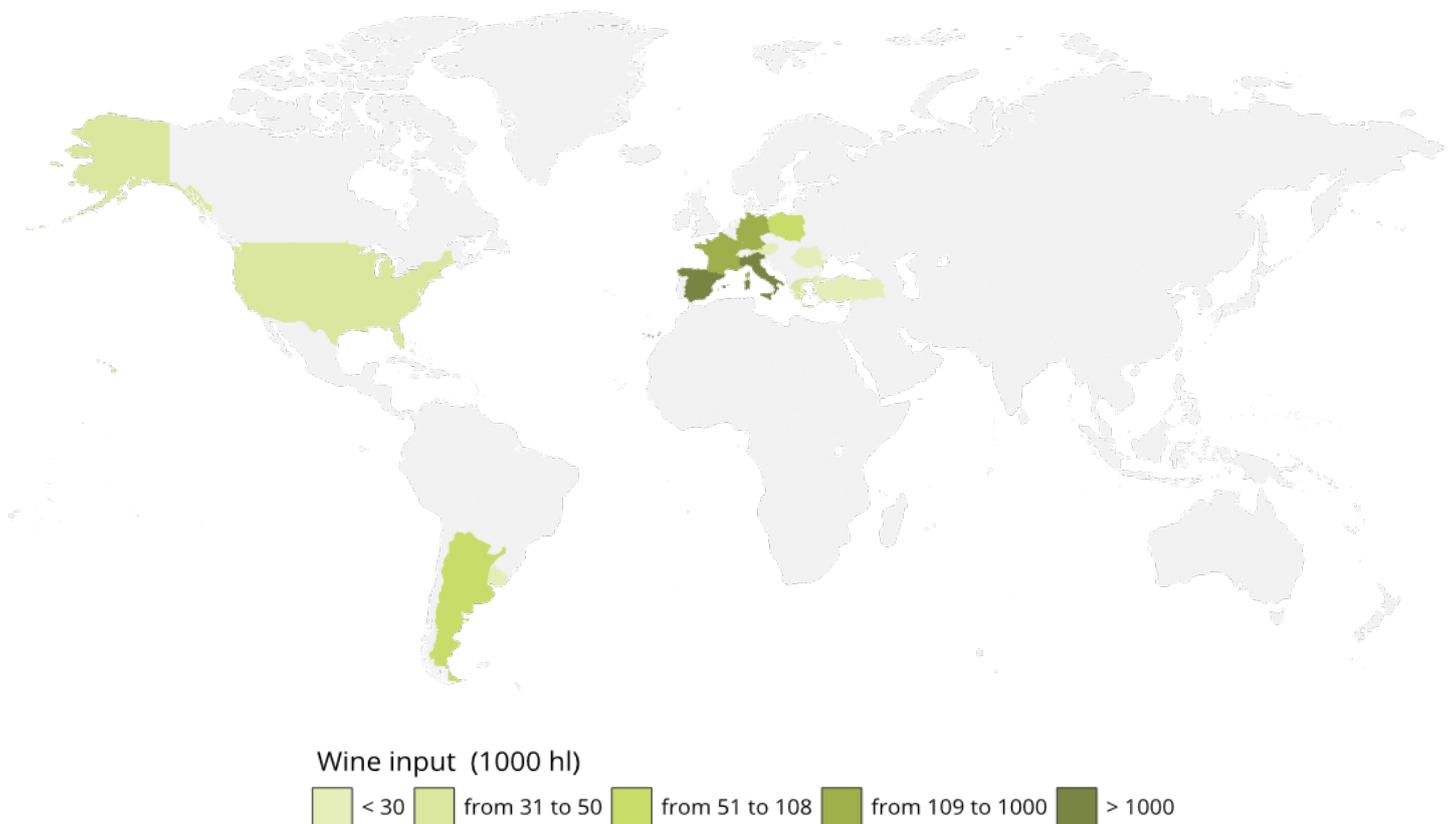
2 • Wine Based Beverages and Aromatised wines

In 2016, the amount of wine used to make wine based beverages and aromatised wines is estimated at 4.9 mhl. This represents almost 2% of the total wine production.

The quantity of wine used for the production of wine-based beverages and aromatised wine has grown strongly in recent years. Indeed, it has almost doubled from 2.7 mhl in 2001 to 4.9 mhl in 2016, representing 1% and 1.8% of the total wine production respectively.

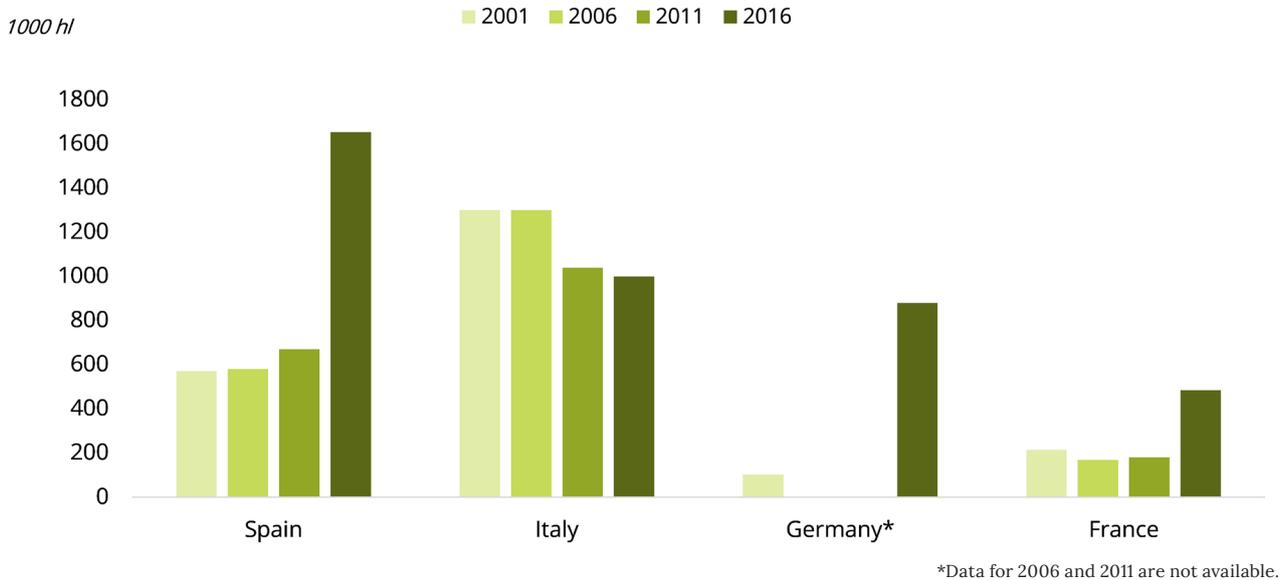
As already mentioned, the market for these beverages seems to be expanding, as shown for example by the success of the French 'rosé-pamplemousse' (grapefruit juice mixed with rosé wine) or the new growth in vermouth consumption. Their production therefore takes an increasingly important place in the overall industrial use of wine.

Wine input for Wine Based Beverages & Aromatised Wines in 2016





Wine input for Wine Based Beverages and Aromatised Wines: leading countries



From the above graph, we can observe:

- With an average of 0.9 mhl of wine used to make wine based beverages and aromatised wines over the period 2012–2016, Spain ranks second. However, its production has grown since 2008 (+162%) and the country became the leading producer in 2016 with 1.7 mhl. It is also interesting to note that Spain devotes a greater proportion of its wine production to the production of these beverages than other countries. In 2016 this rate is estimated at 4.2% (on the average 2012–2016 is at around 2.5%).
- The second largest producer of wine based beverages and aromatised wines is Italy with 1 mhl of wine used to make these products in 2016. This is lower than the average quantity used in the period 2012–2016, that is estimated at more than 1.8 mhl. On average, the quantity of wine allocated for the production of these beverages is 2% of the total wine production.
- In 2016 Germany devoted 0.8 mhl of wine for the production of wine based beverages, almost 10% of its total wine production. Its production of wine based beverage has increased significantly over the past 15 years. The input of wine used for the production of such products was estimated at 102 000 hl in 2001 (1% of the total wine production in Germany).

- Production of wine based beverages and aromatised wines more than tripled since 2001 in France to reach 0.5 mhl in 2016. France devotes only 1.1% of its wine production on these products. Its production has increased significantly over the past 15 years, with a rise of 122% compared with 2001.

The top 4 of these countries account for 93% of the total production of aromatised wines and wine based beverages.

Even if aromatised wines are very popular in the USA its production seems to be very small. Only 35 000 hl of wine are destined to their production, a quantity that is in line with the average of the last 15 years production. However, it is interesting to note that USA produces high volumes of wine coolers that, as highlighted in the previous chapter, do not comply with the OIV definition of aromatised wines or wine based beverages. USA input of wine for other products is of 2.2 mhl.

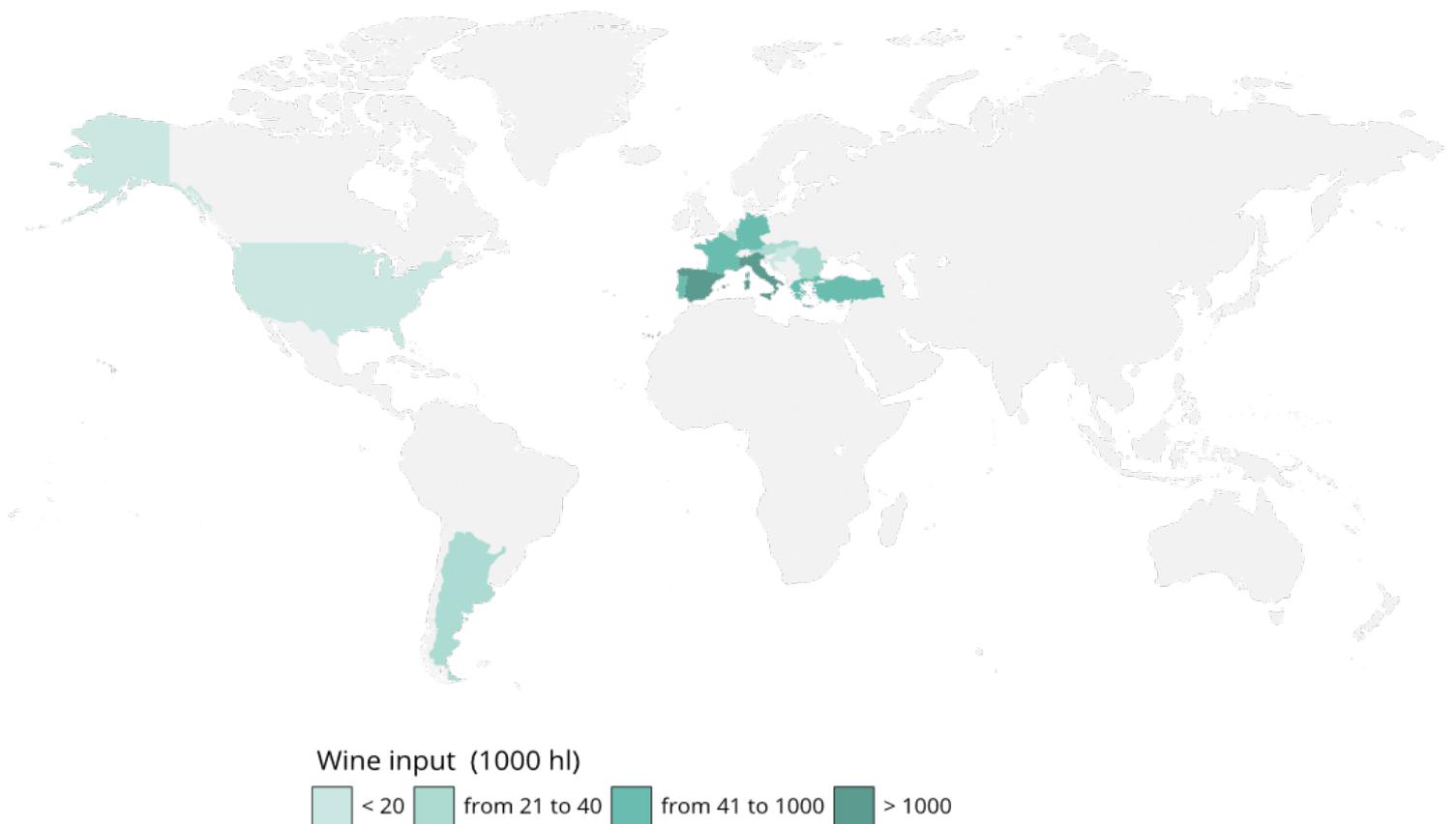


3 • Wine Vinegar

In 2016, the volume of wine used for acetic fermentation reached 4.7 mhl. Wine vinegar's share of the total wine production represents 1.5% in 2016. Wine input devoted to the production of vinegar has grown strongly in recent years. Indeed, it doubled from 1.6 mhl in 2001 to 4.7 mhl in 2016.

From 2001 to 2016, the world input of wine for making wine vinegar varies from year to year. Most years it is just above 1.5 mhl, but can double in certain years (2010, 2011, 2012, 2015 and 2016).

Wine input for Wine Vinegar in 2016





Wine input for Wine Vinegar: leading countries



From the above graph, we can observe:

- Since 2008, the largest producer of wine vinegar is Italy with an average of 2 mhl wine used for making vinegar. 3.9% of Italy's total wine production is destined to the production of vinegar in 2016.
- Concerning Spain the wine input for vinegar production increases regularly since 2000, starting at 580 000 hl in 2000, to reach 890 000 mhl in 2015 and showing a peak of 1.6 mhl in 2016, reaching 4.2% of its total wine production. Italy and Spain together account for almost 90% of the world's input destined to wine vinegar production.
- France's wine vinegar input volumes have decreased regularly since 2000, moving from 250 000 hl in 2000 to 93 000 hl in 2016, representing 0.2% of its total wine production.
- Portugal destines 1.2% of its wine production (72 000 hl) for vinegar in 2016



Examples of products coming from the industrial use of wine by producing country

You will find here below a table listing examples of products that are obtained by industrial use of wine. This list is not exhaustive. Some products have a Geographical Indication (GI) while others don't.

Country	Product	Examples
Austria	Wine spirits & brandies	Wachauer Weinbrand (GI)
Bulgaria	Wine spirits & brandies	Бургаска Мускатова ракия/Muscatova rakya from Bourgas (GI) Гроздова ракия от Търговище/Grozdova rakya from Targovishte (GI) Карловска гроздова ракия/Grozdova Rakya from Karlovo (GI) Карнобатска гроздова ракия/Grozdova rakya from Karnobat (GI) Поморийска гроздова ракия/Grozdova rakya from Pomorie (GI) Сливенска перла/Grozdova rakya from Sliven (GI) Стралджанска Мускатова ракия/Muscatova rakya from Straldja (GI) Сунгурларска гроздова ракия/Grozdova rakya from Sungurlare (GI) Сухиндолска гроздова ракия/Grozdova rakya from Suhindol (GI) Ямболска гроздова ракия/Grozdova rakya from Yambol (GI)
Croatia	W.B.B	Samoborski Bermet (GI)
France	Wine spirits & brandies	Armagnac (PDO) Cognac (PDO) Eau-de-vie de Cognac (PDO) Fine Champenoise (PGI) Fine Faugères (PGI) Fine des Côtes-du-Rhône (PGI) Fine de Bordeaux (PGI) Fine de Bourgogne (PGO) Fine du Bugey (PGI) Fine du Languedoc (PGI)
	W.B.B	Vermouth Bordelais Vermouth de Marseillan Vins d'épines Rosé pamplemousse Vermouth de Chambéry
	Vinegar	Vinaigre d'Orléans Vinaigre de Reims Vinaigre de Bordeaux Vinaigre de Beaune Vinaigre de Banyuls
Germany	Wine spirits & brandies	Deutscher Weinbrand (PGI) Pfälzer Weinbrand (PGI)
	W.B.B	Nürnberger Glühwein Thüringer Glühwein
Greece	Wine spirits & brandies	Brandy Αττικής/Brandy of Attica (GI) Brandy Κεντρικής Ελλάδας/Brandy of central Greece (GI) Brandy Πελοποννήσου/Brandy of the Peloponnese (GI)



Country	Product	Examples
Italy	Wine spirits & brandies	Brandy italiano (GI)
	W.B.B	Vermouth di torino (PGI)
	Vinegar	Vinaigre de Barolo Vinaigre de Lambrusco
Moldavia	Wine spirits & brandies	Divin (PGI)
Portugal	Wine spirits & brandies	Aguardente de Vinho Alentejo (GI)
		Aguardente de Vinho Douro (GI)
		Aguardente de Vinho Lourinhã (GI)
		Aguardente de Vinho Ribatejo (GI)
		Aguardente de Vinho da Região dos Vinhos Verdes (GI)
		Alentejana (GI)
		Bairrada (GI)
Lisboa (GI)		
Minho (GI)		
Trás-os-Montes (GI)		
Romania	Wine spirits & brandies	Vinars Segarcea (GI)
		Vinars Târnave (GI)
		Vinars Vaslui (GI)
		Vinars Vrancea (GI)
		Vinars Murfatlar (GI)
Serbia	W.B.B	Bermet (GI)
South Africa	Wine spirits & brandies	Brandy
Spain	Wine spirits & brandies	Brandy de Jerez (GI) Brandy del Penedés (GI)
	W.B.B	Sangria (PDO) Vino Naranja del Condado de Huelva (GI) Tinto de verano Catalan's vermouth
	Vinegar	Vinagre de Jerez (PDO) Vinagre del Condado de Huelva (PDO) Vinagre de Montilla-Moriles (PDO)
Usa	Wine spirits & brandies	Brandy
	W.B.B	Wine coolers American's vermouth



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- OIV, 2005. Wine distillate.
OENO 2/2005 Resolution. Paris
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