Data sources, assumptions and acknowledgements relating to

Which Winegrape Varieties are Grown Where?

A Global Empirical Picture

3rd Edition

by

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Introduction

Since the late 1990s, the University of Adelaide has provided numerous editions of a global wine statistical compendium of annual time series data and various key indicators of national markets for grape wines. The ninth version was published by the University of Adelaide Press in 2017 as a book and e-book (www.adelaide.edu.au/press/titles/ global-wine-markets) and the data are regularly updated and freely available at the website of the University's Wine Economics Research Centre (https://economics.adelaide.edu.au/wine-economics/databases). However, very little of the wine market data in that compendium series relate to the grapes that are the key ingredient in winemaking. Nor are data included by wine region within each of the countries covered. Partly that is for space reasons (that compendium is around 600 pages long), but also because the most-readily available annual data for grapes do not distinguish winegrapes from grapes for fresh consumption or for drying. Moreover, most countries release detailed winegrape area, crush volume and price data by region and variety (cultivar) irregularly and rarely annually.[1]

Another reason for our global wine markets compendium including little information on winegrapes is that the relatively scant data on bearing area (and the even scanter data on winegrape production, yield and price) refer to varieties that have different names in different countries – and sometimes in different regions within countries – even though they may have the same DNA. This challenge has been reduced greatly, however, thanks to new DNA research. In particular, the well-known Robinson/Harding/Vouillamoz 2012 book called *Wine Grapes* (hereafter also referred to as RHV) provides a detailed guide to 1368 commercially grown 'prime' varieties, and it also identifies their various synonyms. The 'prime' name is chosen by those authors according to the name used in what they consider its country or region of origin. In addition, the Julius Kühn-Institut for Grapevine Breeding at the Federal Research Centre for Cultivated Plants in Geilweilerhof, Germany maintains a *Vitis International Variety Catalogue* (www.vivc.de, hereafter referred to as VIVC). That very comprehensive resource provides additional DNA-based varietal information, and is drawn of for all varieties not identified in RHV. In cases where a variety is listed in neither RHV or VIVC, the name used by the country providing area data is assumed to be an additional 'prime' variety with that as its country of origin.

As in RHV, the present volume defines prime names of varieties using Cyrillic letters if that is what is used by the country of origin. VIVC, by contrast, uses transliterated versions of those names, based on rules adopted by the journal *Chemical Abstracts*, thereby omitting any language-specific symbol (accent, cedilla, tilde, dieresis) in a prime name. Such transliterated spellings appear among the listed synonyms to our primes. Since there is still uncertainty about the country of origin of some varieties, it is unsurprising that VIVC considers a subset of our synonyms to be primes and nominates a different country of origin for some varieties. These are shown in Tables C to E of the Sources of Data part of the 2nd Edition of this database.

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[1] For several decades Australia was among the exceptions. Its regional and varietal time series data are compiled in Anderson, K. *(with the assistance of N.R. Aryal)*, *Growth and Cycles in Australia's Wine Industry: A Statistical Compendium, 1843 to 2013,* University of Adelaide Press, 2015. That volume is freely available as an e-book at www.adelaide.edu.au/press/titles/austwine, as are its updated data, in Excel format, at https://economics.adelaide.edu.au/wine-economics/databases. Also at that website are annual time series data on winegrape area, crush volume and price data by region and variety for Argentina and California.

With the far greater capacity becoming available to avoid spuriously indicating diversity of winegrape varieties across regions and countries, the first edition of our global compendium of data on bearing area by variety and region (and hence also by country) was produced in 2013. Consider it as a supplement to *Wine Grapes* and *The World Atlas of Wine* (or similar atlases) for readers seeking an idea of the relative importance of the world's wine regions and varieties, at least as reflected in winegrape bearing area data. Keep in mind, though, that yields vary by variety in each region. For example, whites generally yield more tonnes per hectare than do reds. Hence the relative importance of each region and variety would be somewhat different if grape crush volume rather than bearing area was the key criterion of interest.

Unexpectedly, the European Union published data on bearing area by variety and region for the 2015 vintage for the EU's winegrape-producing member countries. We therefore updated our global winegrape database and ebook to circa 2016 (that is, using late 2015 data from the northern hemisphere and early 2016 data from the southern hemisphere, or as close to those vintages as possible). That also gave us the opportunity to revise the database for earlier years in numerous minor ways, such as using the exact spelling for each variety as used in its nominated country of origin, ensuring the same names are used across the years for each region, and concording regional and super-regional names where aggregations within countries varied across time. The 2nd Edition of our global database was published in 2020, and again has been made freely available as both as an ebook and as a set of Excel files for the years 2000, 2010 and 2016, with more-limited data on national and global varietal totals for 1990 and on fewer nations' data back to 1960 (see https://economics.adelaide.edu.au/wine-economics/databases#database-of-regional-national-and-global-winegrape-bearing-areas-by-variety-1960-to-2016).

Assembling and 'cleaning' those data is an extremely time-consuming task. The 2nd Edition would have taken much longer (and in some cases been impossible) without the generous assistance of a large number of people in numerous countries. They are listed in the Acknowledgement section below, together with additional people who have helped assemble the circa 2023 data for this 3rd Edition.

Together these revisions over time have expanded the global dataset to almost 2000 prime varieties. In addition, there are more than 1400 synonyms for those prime varieties in the complete dataset. As for the number of regions, it varies by year but sums to more than 800. For the convenience of the reader, regions within each state are identified for Australia, Italy and the United States in Table 70 in the 2nd Edition. Some concordances of regions in a few other countries over time are provided in its Table 71, and in its Tables 72 to 74 concordances are provided between the regions in this database and the regions identified in the 8th Edition (2019) of the Hugh Johnson/Jancis Robinson *World Atlas of Wine.*

The making of wine is intimately related to the climate in which its grapes are grown. The climate of each winegrowing region is a critical determinant of the suitability of the region to particular winegrape varieties, their potential wine style, and the region's overall productivity and profitability. Thus as climates change and planting areas expand in the various wine regions, so does the quality, productivity and profitability of the wines produced there. Hence an effort was made to include in the 2nd Edition at least some key climate variables for each of our 700+ identified wine regions. The geographic location of each region and its climate variables are shown in Section VII of the 2nd Edition. By classifying each region as either cool, temperate, warm or hot as suggested by Gregory Jones, according to its growing season average temperature, we estimated shares of the national and global winegrape area of each variety growing in cool, temperate, warm and hot climates.

The remainder of this note provides details of the raw data sources, the key assumptions we made to fill gaps, and our acknowledgements for both data provision and financial support.

Data sources

All the national and regional data sources, and the exact years to which they relate, are listed in Table 1 at the end of this note. This and the next section elaborate on that tabled information.

The most important source of winegrape bearing area data for this compendium is EUROSTAT, because it has provided data by region for the European Union's member countries for the two most-recent decadal censuses, which were circa 2000 and 2010, and updates for 2015 and 2020. They can be found at http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database [In the Data Navigation Tree, click on "Agriculture, forestry and fisheries" then "Agriculture" then "Structure of orchards and vineyards" then "Vineyard " and then "Basic vineyard survey".] Since that source provides data for a large share of the world's winegrape production, those census years were the ones targeted for all other countries in the 1st and 2nd editions of this database. For the majority of the EU countries the census dates were a year earlier, so 1999, 2009 and 2015 were the vintages targeted for other Northern Hemisphere countries while 2000, 2010 and 2016 were targeted for Southern Hemisphere countries – bearing in mind that harvesting is late in the calendar year in the north and early in the calendar year in the south.

Not all EU-28 countries had their latest census data uploaded on that EUROSTAT website initially, so we approached government officials in the missing member countries (France, Greece, Hungary, Italy) to secure advance copies of the circa 2010 data that were yet to be uploaded in those countries, as we did also for Hungary and Romania for more-detailed circa 2016 data. For circa 2023 we sought national data for all EU countries but in a few cases where they were not publicly available (most notably Italy) we had to rely on EUROSTAT's 2020 data.

The choice of other countries to include was determined primarily by national shares of global wine production, in addition to availability of data. The 62 countries for which data are available for circa 2023 account for 99% of global grapewine output. Of the extra countries added for the circa 2016 and 2023 updates, they account for less than 0.5% of global wine production. Their inclusion is nonetheless worthy because they indicate the movement toward the Arctic of the northern limit of winegrape growing and the types of varieties (often hybrids) that can be grown there.

Since excluded countries account for less than 1% of global wine production, one can assume that the sum of included countries is very close to the global winegrape area. This total is sub-divided into 'Old World' and 'New World' in some files. 'Old World' refers to traditional winegrape-growing countries of Europe, the former Soviet Union, the Levant, and France's former North African colonies. All others ('New World' countries) grow winegrapes in and for newer markets and include, unusually, Belgium, Denmark, Lithuania, Netherlands, Norway, Poland, Sweden and the United Kingdom (although their winegrape areas are so tiny that it makes little difference which sub-section includes them) plus Asian countries other than those of Central Asia that had been part of the Soviet Union. Prior to

World War II, the 'Old World' accounted for all but 7% of global wine production, and as recently as the 1990s its share still exceeded 80%.

In addition to aggregate national data, bearing area data by variety are available for 700+ regions within up to 29 of our 62 countries. The degree of regional disaggregation of any one country varies through time though. For the convenience of the reader, Table 71 of the 2nd Edition reveals how some of them aggregate to super-regions, providing a total of 813 regions in the entire dataset in 2016. A concordance between these and the regions identified in the 8th edition of the Hugh Johnson/Jancis Robinson *World Atlas of Wine* is provided in Tables 72-74 of the 2nd Edition. For three countries, Table 70 shows the State/Province in which each region is located.

As mentioned in the introduction to this note, our key source for identifying DNA-identical varieties and their synonyms is the Robinson/Harding/Vouillamoz book called *Wine Grapes: A Complete Guide to 1,368 Vine Varieties, Including their Origins and Flavours* (London: Allen Lane, 2012), supplemented by the *Vitis International Variety Catalogue* (www.vivc.de), which also provides DNA-based varietal information. The RHV book's prime varieties account for most of the global winegrape area. VIVC accounts for much of the rest, and for a larger share of the number of minor varieties' prime names, with thanks to Erika Maul of VIVC for assisting with prime identifications. We also adopt RHV and VIVC berry colours, although we simplify their five categories to just three: the darkest two we call red, the lightest two we call white, and the middle colour we call 'grey' (which accounts for just 3.6% of the global area in 2023 and 2.3% in 2010 (two-fifths of which was Pinot Gris/Grigio).

There are two exceptions to our use of RHV prime names. One concerns Pinot, which is thought to have existed for two millennia and which therefore has many clones. Until recently the most popular clones – which include all three of our colour categories – were thought to be distinct varieties, and have been promoted separately to different niches in the market. For that reason we retain separately the following five, each of which has several synonyms identified by RHV: Pinot Blanc, Pinot Gris, Pinot Meunier, Pinot Noir, and Pinot Noir Précoce. The other exception is Garnacha, which also has both red and white mutations. In that case we retain separately the following four, each of which has several synonyms identified by RHV: Garnacha Blanca, Garnacha Peluda, Garnacha Roja, and Garnacha Tinta.

There are no official data on China's winegrape area by variety and region, so reliance has been on estimates by well-informed individuals. For the 2016 numbers we drew on national estimates by Professor Yulin Fang, Dean of the College of Enology, Northwest Agricultural and Forestry University, who in turn drew on data for 2017 from the China Grape & Wine Industry Network (http://www.chngw.net/Default.aspx). The total area is consistent with the volume of wine produced from domestic grapes in China.[2] Senior staff at Pernod Ricard Asia in China agreed these were the best estimates available, but they felt the share of Cabernet Sauvignon in that total was probably twice the actual share (as producers of various other red grape varieties try to suggest their vines are this noble variety). We therefore halved the area listed for that variety and included the other half in 'Other red varieties' in 2016.

Australia's official area data had been compiled by the Australian Bureau of Statistics (ABS) until 2015, but ceased thereafter. Those ABS data included only the largest 40 or so varieties. However, annual estimates of the winegrape crush by every variety and source

[2] As estimated by Anderson, K and K. Harada (2018), 'How Much Wine is *Really* Produced and Consumed in China, Hong Kong and Japan?', *Journal of Wine Economics* 13(2): 199-220.

region have been assembled by Wine Australia. Anderson and Puga drew on them to estimate the bearing area by region for each missing year up to 2023, as detailed at https://economics.adelaide.edu.au/wine-economics/databases#australian-winegrape-vine-area-production-and-price-database-by-region-and-variety-1956-to-2023

We were unable to get 2015/16 data for several countries that were included in the 2010 dataset: Algeria, Ethiopia, Georgia, Kazakhstan, Korea, Mexico, Peru, Russia and Taiwan. Hence we assumed their varietal mix and total area were the same as in 2010. These countries accounted for just 2% of the global bearing area in 2010. In the case of Russia, though, we added the region of Crimea (part of southeast Ukraine prior to its annexation by Russia in 2014) by assuming that region was half of Ukraine's winegrapes area[3] and, less plausibly but in the absence of further evidence, that the varietal mix in Crimea was the same as in the rest of Ukraine in 2016.

For six important EU wine-producing countries – France, Greece, Italy, Portugal and Romania – the number of varieties reported in Eurostat was far smaller in 2016 than in 2010, as only major varieties were shown separately. So too was the number of regions, but a concordance between the more-detailed and less-detailed sets was easy to compile (Tables 71-74 of the 2nd Edition). So for each of these five countries we added the minor varieties that were separated out in 2010 but not in 2016 by assuming that for each of those red, white and grey varieties not separately showing in the 2016 data, their 2016 share of total area for each region was the same as in 2010. We then subtracted the sum of those newly added areas of red or white or grey varieties from the 2016 'Other red' or 'Other white' or 'Other grey' area for that region. Similar to Australia, those added varieties account for only a small fraction of the total bearing area for each country in 2016, but they help to indicate the relative importance of those minor varieties in the global bearing area.

The list of fungal-resistant hybrid varieties reported in Table 29 of the 2nd Edition is a collective whose German name is Pilzwiderstandsfähige Sorten, popularly known by the acronym PIWI, It includes all those varieties listed at http://www.zukunft-weinbau.de/forschung/piwi-liste/ that are reported in our global database. There may be others in production that are hidden in the 'Other varieties' residual catch-all for each country, but in almost all cases their bearing area is very minor.

Assumptions

For some countries and years, it has been necessary to make some assumptions in order to fill gaps. The most important of these are noted in this section.

Of the 44 countries reported for 2010, we were unable to secure reliable data for 2000 for nine of them (China, Japan, Kazakhstan, Mexico, Myanmar, Peru, Thailand, Turkey, and Ukraine). The combined share of global wine production of those nine countries in 2000 was only 1.6% (compared with 5.1% in 2010), but to retain their unusual varietal contributions we have included them as a group (called "Missing 9 in 2000") by assuming each of them had (i) the same varietal mix then as in 2010 and (ii) a national acreage in 2000 that was the same fraction of its 2010 acreage as was its national wine production volume.

[3] Tsymbliuk, K. and Y. Larina (2017), 'The Current State of the Vitiviniculture Sector in Ukraine', *Baltic Journal of Economic* Studies 3(5): 431-36.

Numerous countries have an 'other varieties' category for each region, and only some of them sub-divide that category according to berry colour. When no sub-division is provided, we assume the proportions of 'other varieties' that are red, white and grey are the same as the proportions for the named varieties for that region or country.

For some countries for 2023, notably France, Germany, Italy, Portugal, Spain, and Switzerland, there were only major varieties specified and so far fewer that year than in 2016. To avoid losing the minor varieties it was assumed their share of the national total was the same in 2023 as in 2016 and that the "Other" varieties' categories in 2023 were shrunk accordingly to that extent. It was not possible to allocate those minor varieties to individual regions, however, so their sum in 2023 is not identical to the national sum.

Acknowledgements

For the 1st Edition of our global database, our grateful thanks go to Jancis Robinson MW, Julia Harding MW and José Vouillamoz for promptly responding to emailed questions and for sharing their vast knowledge by reacting to drafts of numerous tables, as well as for providing 2010 data for such countries as China, Japan, Russia and Ukraine. Also extremely helpful were comments on varietal names/spellings and countries of origin for the 2nd Edition by Domen Presern of the University of Oxford (and President of its Blind Tasting Society). As well, Erika Maul provided detailed information on VIVC prime names and synonyms. Peter Dry of the Australian Wine Research Institute and Gregory Jones (then of Linfield University in Oregon) cast their eyes over our listings and provided many additional helpful comments. Professor Gregory Jones also provided invaluable guidance on the nature and limitations of regional location and climate data. That helped us compile and report new data in Section VII of the 2nd Edition. Germán Puga, an Argentinean PhD student at the University of Adelaide at the time, provided excellent research assistance in concording regional names across years with those used in the 8th Edition of *The World Atlas of Wine,* in finding the latitude and longitude of a representative town or city for each region, and in aggregating these climate data in various ways and in generating the Climatic National Similarity Index numbers in Sections VII and X of the 2nd Edition.

We remain grateful also to the late Patrick Fegan of the Chicago Wine School, whose 2003 book *The Vineyard Handbook: Appellations, Maps and Statistics* helped with its 1990 varietal data and also circa 2000 data for several small wine-producing countries. The data for Italy for 1990 (and 1970) were greatly expanded to include many minor varieties, thanks to Table 3 of Ian D'Agata's book, *Native Wine Grapes of Italy* (University of California Press, 2014). In the latest version we have added 1990 data for New Zealand and 1980 and 1990 data for South Africa, from their national winegrower organizations.

At the risk of accidentally omitting some names (for which we humbly apologize), our sincere thanks for providing or leading us to the following national data up to 2010 go to, in author alphabetical order, Julian Alston, Kate Fuller and Sandro Steinbach (California and Washington States, USA), Georgi Apkhazava (Georgia), Peter Bailey, Sheralee Davies, Alan Nankivell and Mark Rowley (Australia), Stefan Bojnec (Croatia, Serbia and Slovenia), Bruce Bordelon (Indianan, USA), Jasna Čačić (Croatia), Mark Chien (Pennsylvania, USA), Donald Cyr (Canada), Dominique Desbois (for carefully assembling French survey data for 2009, pending the publication of the official census data which have yet to be released), Christy Eckstein (Ohio, USA), Denis Gastin (Thailand), Anatassios Haniotis and Kargarita Koumanioti (for advance access to the 2009 Greek census data), Giulia Meloni (EUROSTAT

data plus Brazil, Italy, Peru), Jimena Estrella, Javier Merino and Germán Puga (Argentina), Taner Öğütoğlu (Turkey), Sergey Oleichenko, Dauren Oshakbaev and Alfinura Sharafeyeva (Kazakhstan), Bruce Reisch (New York State, USA), Jorge Tenotio (Mexico), Gabriel Tinguely (Switzerland), Áron Török (for advance access to the 2010 Hungarian census data), Angeliki Tsiolo of the OIV (for contacts in various countries), and last but definitely not least, the trio of Annalisa Zezza, Roberta Sardone and Eugenio Pomarici (for advance access to and heroic efforts to polish the 2010 Italian census data).

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While we have made every effort to ensure the accuracy and currency of information within this database, we cannot accept responsibility for information that may later prove to be misrepresented or inaccurate, or for any reliance placed on the information by readers. We warmly welcome comments on the raw data and the indicators derived from them, and we would gratefully receive any new databases for omitted countries or updated, expanded or revised databases for those countries already included.

Table 1 below summarizes, for each country, the vintages represented in our database and their sources.

Table 1: Sources of national winegrape bearing area data for the circa 2000, 2010, 2016 and 2023 datasets, showing actual years for each country and US State[a]

Country	*Latest year*	*Actual past years*	*Data sources* (latest, and earlier years)
Albania	2024		Caroline Gilby, *Decanter* article June 2025
Algeria	2022	2001, 2015	OIV (2018) for 2016, assumed to be only 28% of 2016 by 2023; Fegan (2003) for 2000, assumed same for 2010
Argentina	2022	2002, 2011, 2016	Anderson and Puga (2024), *Database of Argentinian Winegrape Vine Area, Crush, Price and Per Hectare Volume and Value of Production, by Region and Variety, 2002 to 2022,* based on Argentinean Instituto Nacional de Vitivinicultural http://www.inv.gov.ar
Armenia	2022	2001, 2009, 2015	Aramayis Mkrtchyan, of Vine and Wine Foundation of Armenia, provided 2022; Nelli Hovhannisyan, personal communication, provided 2016; Fegan (2003) for 2000, assumed same for 2010
Australia	2023	2001, 2010, 2015	Anderson and Puga (2023), *Database of Australian Winegrape Vine Area, Price, Crush Volume and Value, and Per Hectare Yield and Value, by Region and Variety, 1956 to 2023* (detailed series begins in 2001)
Austria	2022	1999, 2009, 2015	Austrian Wine (2024), *Austrian Wine Statistics Report* www.austrianwine.com; EUROSTAT to 2015
Belgium	2023		SPF Economie, thanks to Jorgan Magnusson
Brazil	2022	2000, 2010, 2016	2023 mix assumed same as 2016 but area assumed to be 50% larger; Embrapa for 2010 and 2016 (http://vitibrasil.cnpuv.embrapa.br/index.php?opcao=opt_03); Fegan (2003) for 2000
Bulgaria	2021	2001, 2009, 2015	Caroline Gilby, personal communication; EUROSTAT for 2010 and 2016; Fegan (2003) for 2000
Cambodia		2015	Denis Gastin, personal communication for 2016 (2023 assumed same)
Canada	2022 for BC	2001, 2009, 2015	British Columbia data from www.winebc.com, British Colombia Grapegrowers' Association for 2023; other provinces for earlier years (and assumed same in 2023) are from Grapegrowers of Ontario, Grapegrowers' Association of Nova Scotia, *Vignerons Indépendants du Québec*; Fegan (2003) for 2000
Chile	2022	2000, 2009, 2016	https://www.odepa.gob.cl/rubro/vinos/catastro-viticola-nacional; earlier years from Ministerio de Agricultura, *Catastro Viticola Nacional 2016* and www.odepa.gob.cl/odepaweb/servicios-informacion/publica/catastro-vides
China	2022	2009, 2015	*China Agricultural Yearbook* (guestimate based on wine production) for 2016 and assumed same mix in 2023 but areas multiplied by 0.4 and Marselan added (press estimate of 3500 ha); Julia Harding, personal communication for 2010
Croatia	2022	2001, 2011, 2015	2023 via Caroline Gilby; EUROSTAT for 2010 and 2016; 2000 from Fegan (2003)
Cyprus	2022	2000, 2009, 2015	Caroline Gilby, personal communication; EUROSTAT for 2010 and 2016; 2000 from Fegan (2003)
Czechia	2023	2001,2009, 2015	2023 from Statistika odrůd | Národní vinařské centrum, o.p.s.; EUROSTAT for 2010 and 2016; 2000 from Fegan (2003)
Denmark	2017	2016, 2023	2017 data from Danish Vineyards Association, https://vinavl.dk/, assumed the same in 2023 and 2016
Ethiopia	2009	2009, 2015	Ministry of Agriculture for 2009; assumed unchanged for 2016 and 2023
EU members	2020		https://ec.europa.eu/eurostat/databrowser/view/vit_t1/default/table?lang=e by region in each member country in 2020 (used as default if no national data are available for 2023)
France	2022	1999, 2010, 2015	EUROSTAT and personal communication with Dominique Desbois and J.-M. Cardebat; Champagne data from www.champagne.com (see https://visionet.franceagrimer.fr/Pages/Statistiques.aspx?menuurl=Statistiq uperficies); EUROSTAT for 2000, 2010 and 2016
Georgia	2023	2004, 2009, 2015	Georgian Wine Association, *Georgian Vineyard Cadaster: Report 2023;*

			Georgian Wine Association also for 2004; assumed mix unchanged for 2000, small growth in area by 2010 and 2016
Germany	2022	1999, 2009, 2015	Deutscherweine (2024), '*23/'24 Deutscher Wein Statistik*, at https://www.winesofgermany.com/news-media/statistics-reports/; EUROSTAT for 2000, 2010 and 2016
Greece	2020	1999, 2009, 2015	2020 from EUROSTAT; EUROSTAT and Hellenic Statistical Authority for 2000, 2010 and 2016
Hungary	2022	2000, 2010, 2015	2023 from Hungarian Ministry of Agriculture, https://www.hnt.hu/statisztikak/termoterulet-es-termesmennyiseg/borszolo Áron Török and Gabriella Szmilkó, personal communication for 2010 and 2016; Fegan (2003) for 2000
India	2022	2015	2016 from OIV (2018), assumed same mix but 20% larger areas for 2023
Israel	2022	1999, 2009, 2015	2016 from OIV (2018), assumed same for 2010 and 30% larger areas for 2023; 2000 from Fegan (2003)
Italy	2020	2000, 2010, 2015	2023 from EUROSTAT; Italian Ministry of Agriculture for earlier years
Japan	2022	2009, 2015	Ministry of Agriculture, Forestry, and Fisheries (MAFF): https://www.maff.go.jp/j/tokei/kouhyou/tokusan_kazyu/, compiled carefully for 2022 by Kimie Harada, personal communication; 2010 & 2016 from Julia Harding, personal communication
Kazakhstan	2022	2007, 2015	Dauren Oshakbaev, personal communication via Alfinura Sharafeyeva for 2016; assumed unchanged for 2010 and 2023
Korea, Rep.	2022	1999, 2011, 2015	www.vivaioenotria.com for 2010; assumed the same in 2000 and 2016, and one-quarter less in 2023
Latvia	2022		Association of Latvian Vinegrowers and Winemakers
Lebanon	2022	2015	OIV (2018) for 2016, assumed same in 2023
Lithuania	2022		Lithuanian Vine Growers Association, https://vynuogininkai.lt/
Luxembourg	2020	1999, 2009, 2015	2020 and 2000 from EUROSTAT; OIV (2018) for 2015 and assumed same for 2010
Mexico	2022	2011, 2015	*Mexican Vitiviniculture Council* (Consejo Mexicano Vitivinícola); 2010 from Mexican Ministry of Agriculture, www.siap.gob.mx; assumed unchanged for 2016 and one-quarter greater for 2023
Moldova	2022	2009, 2015	2023 assumed same as 2016, from Caroline Gilby, personal communication and Stefan Iamandi, Wine of Moldova; 2010 via Julia Harding, personal communication and assumed same in 2000
Morocco	2022	1999, 2009, 2015	OIV (2018) for 2016, assumed same mix for 2023 but total area only 38% of 2016's; 2000 from Fegan (2003) and assumed same in 2010
Myanmar	2022	2012, 2015	Denis Gastin, personal communication for 2010 and 2016, assumed 2023 is same as in 2016
Netherlands	2022		Total area of 337 ha from press, assumed same mix as for Belgium
New Zealand	2023	2000, 2009, 2016	http://wineinf.nzwine.com
North Macedonia	2020	2015	2020 via Caroline Gilby; 2015 from Wines of Macedonia https://winesofm communication
Norway	2024	2019	Albert Schamaun; 2016 refers to 2019 data, from Erik Lindås, personal communication
Peru	2022	2008, 2015	2008 data for 2010 (assumed unchanged for 2016 and 2023) are from www.minag.gob.pe/portal/download/pdf/herramientas/boletines/Documen
Poland	2022	2024	Poland's National Support Centre for Agriculture, KOWR (Krajowy Ośrodek Wsparcia Rolnictwa), via much computation by Marcin Rzegocki, personal communication
Portugal	2022	1999, 2009, 2015	2022 from https://www.ivv.gov.pt/np4/35/; earlier years from EUROSTAT
Romania	2022	2001, 2009, 2015	Caroline Gilby, personal communication; 2010 and 2016 from EUROSTAT; 2000 from Fegan (2003)
Russia	2021	2000, 2009, 2015	Russian Ministry of Agriculture via Vladinmir Pukish; 2010 via Julia Harding, personal communication; mix assumed unchanged for 2016 but Crimea added; 2000 from Fegan (2003)

Serbia	2019	2001, 2009, 2015	Caroline Gilby, personal communication; 2016 from National Office of Statistics, National Winery Register; Fegan (2003) for 2000, assumed unchanged for 2010
Slovakia	2020	2000, 2009, 2015	EUROSTAT except 2000 from Fegan (2003)
Slovenia	2022	2000, 2009, 2015	2022 via Caroline Gilby, personal communication; EUROSTAT for 2010 and 2016; Fegan (2003) for 2000
South Africa	2023	2002, 2011, 2016	http://www.wosa.co.za/sa/stats_sawis_annual.php
Spain	2022	1999, 2009, 2015	EUROSTAT
Sweden	2024		Swedish Wine Industry Association
Switzerland	2022	1999, 2009, 2015	http://www.blw.admin.ch/themen/00013/00084/00344/index.html?lang=d
Taiwan	2022	1999, 2009, 2015	Denis Gastin, personal communication up to 2016; 2023 assumed same as 2016
Thailand	2022	2010, 2015	Thailand Grape Vine Survey, from Denis Gastin, personal communication; ; 2023 assumed same as 2016
Tunisia	2022	2000, 2009, 2015	Assumed mix is same in 2023 as in 2016 but total area is 54% larger; assumed for 2016 that 6.3 kl wine came from each ha (as in Algeria); Fegan (2003) for 2000 and assumed same for 2010
Turkiye	2022	2010, 2015	2023 assumed same as 2016, from Taner Öğütoğlu of Wines of Turkey, personal communication; 2010 from Umay Çeviker, personal communication
Turkmenistan	2021		Turkmen Agricultural Institute, Ministry of Agriculture and Environmental Protection of Turkmenistan, https://tohi.edu.tm/usuly-gollanma/en/file/8.pdf
Ukraine	2022	2009, 2015	2023 based on winegrape production that year, from Bezhenar, I. (2024), "Wine Production in Ukraine: Challenges, Opportunities Today", *Ekonomika APK*: 31(5): 20-34; 2010 from Ukrainian Ministry of Agriculture via Julia Harding, personal communication; assumed unchanged for 2016 except Crimea transferred to Russia
United Kingdom	2022	1999, 2009, 2015	Wines of Great Britain, https://winegb.co.uk
United States[b]	2022	1999, 2009, 2015	www.nass.usda.gov and see footnote b for individual states
Uruguay	2023	2000, 2012, 2016	http://www.inavi.com.uy/categoria/38-estada-sticas-de-via-edos.html; Departamento Registro de Vinedos, Instituto Nacional De Vitivinicultura, Montevideo *Estadisticas de Vinedos 2016* (and 2023)

[a] EUROSTAT data are available at http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

[b] Dates for the various US states vary according to availability. For the 2nd Edition they are: Arizona-2008, 2015, Arkansas-2009, 2015, California-1991, 1999, 2009, 2015, Colorado-2009, 2015, Georgia-2009, 2015, llinois-2011, 2015, Indiana-2011, 2013, Iowa-2006, 2015, Kentucky-2010, 2015, Michigan-2002, 2011, 2018, Minnesota-2007, 2015, Missouri-2010, 2015, New York-1990, 2001, 2011, 2015, North-Carolina-2009, 2015, Ohio-2008, 2015, Oregon-1990, 2000, 201, 2015, Pennsylvania-2008, 2015, Texas-2010, 2017, Virginia-2008, 2015, Washington-1990, 1999, 2011, 2016. For the 3rd Edition they are: California-2022 (USDA-NASS, *California Grape Acreage Report 2022*); Michigan 2020 (https://www.nass.usda.gov/Statistics_by_State/Michigan/Publications/Michigan_Rotational_Surveys/mi_fruit20/Grapes%20hops.pdf), New York-2023 (New York Wine and Grape Foundation, *2024 Vineyard Report*; Oregon-2023 (University of Oregon, *Oregon Vineyard and Winery Report 2024*); Texas 2020 (USDA-NASS and Texas Wine & Grape Growers Association); and Washington-2023 (Washington Winegrowers).