

VESSELS FOR STORAGING WINE IN ANCIENT ROME AND TODAY

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ABSTRACT

Wine seems to be one of the oldest beverages known to man. In order for the wine to have the required quality and not posing a danger to human health, it is necessary, as part of the production process, to be stored in appropriate vessels before reaching the consumer. The authors of this article, using the historical method and the method of analysis and comparison, will merge two different periods: Rome and today. The unusual merging of two different periods of human civilization is aimed at proving the hypothesis of this article that wine storage vessels are not a creation of today world, and their development in modern times contributes to keeping the wine quality as a food agricultural product. Also, in the article, the authors will present the way of sale and inheritance of wine in Rome, because the storage of wine in the amphorae, during the sale or inheritance then, contributed to the preservation of its quality, sale and inheritance.

Key words: amphora, barrel, bottle, quality, product.

INTRODUCTION

The history indicate that wine and the vine have been present, it seems, since always in human life. Since ancient times, have been part of the tradition of mankind existence, regardless of whether we are talking about the tradition of growing vines or the tradition of wine production. The very mention of the term " a blissful drop - gift from the Gods" in everyday speech and life, there is an inevitable wine association (Jovanovic, Atanasovska Cvetkovic, 2021:1).

If we use the history in the context of the wine and the vine and deepen the historical knowledge, then the vine and the wine, until today, undoubtedly come a long way. The initial image and realization are the following: the vine appears before the appearance of the human kind (Avramov, 1975:10). Archeology and the archaeological record indicate that wine dates back to 7.5 thousand years ago, and the remains of wine found in present-day Iran (which are also considered to be the oldest finds) date back to the beginning or middle of the fifth millennium BC (P. Jackson, 2013:1). As for the old records, the hieroglyphic ones indicate that the first records of the wine press date back to the reign of Udimu in Egypt, about 5000 years ago (P. Jackson, 1994:1). The numerous literatures dealing with viticulture and wine also point out to the fact that the first vine that appeared even before the first man was the wild vine *Vitis vinifera* (Mijatovic, Jovanovic, 2014: 5-6). This variety of vine (*Vitis vinifera* L), according to paleontological discoveries and records, began to be cultivated and domesticated first in Transcaucasia, and then on the coasts of the Mediterranean and Aegean seas (Cindric, 1999: 9).

The history of civilization leads us to ancient Egypt, the eastern despotism, where we could detect the first serious cultivation of the vine and the production of wine. The great Nile River and irrigation systems provided the basis for the pharaohs to cultivate the vines and produce the wine. The discoveries made along with the discovery of Tutankhamun's tomb also contribute to these views: red and white wine were found in the vessels that were found in the tomb itself (P. Jackson, 2013: 2). From another completely different aspect, the aspect of legal rules, it could only be assumed that the wine and the vessels for storing the wine in that period were part of the legislation of the time, because the wine tax was paid in monetary amounts. It is believed that the first vessels for storing wine in ancient Egypt were sacks in which the crushed grapes were transported, and the fermented juice was collected in *amphorae* that were made of clay (earthenware jars). After the wine had fermented and the sediment settled, the new wine was racked in another amphora, and the new amphora was sealed with tree resin. There was an inscription, a hieroglyphic sign on the amphora itself - a "label" that presents what kind of wine was held in (P. Vine, 1997: 47). Given that the Egyptians were primarily polytheists throughout their history, there is no doubt that wine was part of their religious rituals.

If we look at the countries that are part of the so-called eastern despotisms, then the legislations and valid laws of that time, the oldest codes that regulated the behaviors in the social arrangements of that time, lead us to penetrate into the ancient city-states. The Codes of Ur-Namu, Bilalam and Hammurabi are some of the oldest written traces of ancient civilizations (Atanasovska Cvetkovic, 2021:32). The Babylonian Empire deserves to be part of the introductory historical observations related to grapes and wine, precisely of the most significant code brought on the territory of this kingdom - Hammurabi's Code (It is believed dates back from the mid-18th century BC, written in cuneiform on a large diorite pillar, found in the city of Susa, present-day Iran, and today is kept in the Louvre Museum in Paris, France). We emphasize this code because wine is mentioned in the provisions, which is important both from an agricultural and a legal point of view. It is interesting that wine is mentioned in the context of a beverage in Article 108, and from an aspect of the developed irrigation system and the plots of land on which vines were grown, we could conclude that the term "drink" also included wine, beer, and other beverages. In this Article, although lawyers will mention a crime in Babylon in context of merchants and agents and proceedings during their work, agriculturists and lawyer with agricultural law field of interests would see the very mention of wine: "If a tavern-keeper (feminine) does not accept corn according to gross weight in payment for drink, but takes money, and the price of the drink is less than that of the corn, she shall be convicted and thrown into the water." Hence, it is indisputable that the first barter, exchanges in kind and the first forms of trade were expressed not only through grain, but also through wine. As for the storage of wine, we assume that there were some kind of leather sacks that facilitated the transport or sale of wine, amphorae or larger vessels, and we also assume that there were specially designed places (rooms) for storage - wine cellars.

The destruction of Babylon by the Hittites did not mean that wine ceases to exist, and thus its mention in the laws that have yet to be passed in history also ceases. On the contrary, wine is also mentioned in the Hittite Code, which leads to the conclusion that wine was part of regular life in the Hittite kingdom.

Antiquity and the ancient states as part of the history of civilization refers us to Old Greece, where we owe the descriptions and writings about good wines from Macedonia and Greece to the great poet Homer (Jovanovic, Atanasovska Cvetkovic, 2022: 518). Homer's "Odyssey" and the scene where Odysseus gives the Cyclops wine kept in leather bellows to make him drunk, put him to sleep and put out his eye so he can escape from his cave, is just one segment where we record wine in Homer's writings. Even in ancient Greece, there were amphorae as vessels for storing wine that looked like pitchers with two handles. There was

another type of amphora - a one-handled amphora called *oinokoe* (the term is based on the prefix "*oinos*", which means "*wine*" in ancient Greek language). Just like in Egypt, the lid of the amphora was sealed with resin. The Greeks kept the mixture of wine with aromatic ingredients (plants, honey, pepper, resin) in special vessels called *kraters*. They drank the wine from special vessels, from glasses that had two handles, made of clay dominated by ornaments and images in the spirit of their religion (polytheism) called *skyphos* (P. Vine, 2012: 47). So, the wine was not excluded from the law of that time period. For example, we find mentions of wine in Gortyn Code, the legislative act of the aristocratic Cretan polis Gortyn dating from the middle of the 5th century BC.

The ancient Greeks contributed to the development and cultivation of vines and wine in Rome, or better said in today's meaning of the words, in Italy, and Rome and the great Roman Empire gets its merits. The great Roman lawyers full with pragmatism and good developed legal sense, made the wine an integral part of the *Digesta* (hereinafter D.). The Digests, on the other hand, are part of Justinian's famous codification *Corpus Iuris Civilis*, which represent one of the sources for the further part of the article in which we will talk about the vessels for storing wine in this historical epoch. We can attribute one more merit to the great Roman Empire: the great Roman Empire can be declared the "culprit" for the expansion of vines and wine in our areas, on the Balkan Peninsula, and the Slavs, with their immigration, accepted the way of cultivation of the vine and the making of wine (Hristov, 2010: 13-15).

The historical records as presented, regardless of whether we are talking different point of view, a legal or an agricultural point, undoubtedly indicate the existence of wine storage vessels and their contribution to human history. Even today. The existence can be seen through several aspects: purchase and sale, inheritance, transport, preserving the quality of the wine. This paper is an attempt to find another connection between agriculture and law, another connection between the past and the present, and another touching point that the authors find in this article: wine storage vessels in ancient Rome and today.

MATERIAL AND METHODS

In order to reach objective results, the historical method and comparative analysis were used. The source of data used in this paper are legal regulations from history – the oldest written legal traces: the Codes of Ur-Namu, Bilalam and Hammurabi, the Hittite Code. Also, the law and regulations of Roman law contribute to the sources. For the purposes of this paper, the Roman law – *Digesta* (part of Justinian's codification) will be observed from the aspect of wine i.e. vessels for storing wine. The same regulations from Roman times are used for purpose of presentation of selling and inheriting the wine in Roman times. Also, historical written papers, books and prose from roman period will be used for the purposes of finding old writings and historical mentions of vessels for storing wine from this concrete period (*De agri cultura, De rustica*).

In the same time, the use of comparative method is for purpose of presentation what Romans use as a vessel then and what kind of vessels are used in contemporary times. This indicates that the analysis in the paper is based on the following hypotheses: wine is an important agricultural and food product since the oldest civilization, the vessels are of great importance for storing wine and its quality, vessels made the selling, buying, inheriting and the transport easier, some vessels left the history scene and some of them are still in use today.

RESULTS AND DISCUSION

It seems that wine storage vessels are as old as civilization itself. With the discovery of the possibility of producing wine from vines, the need for its storage and preservation of its quality appears. The Romans paid a lot of attention to the wine storage vessels, so the very mention is no surprise from the aspect of the Roman legal rules and other writings from that

time period that today have meaning of historical documents and writings. With the various types of vessels, the Romans facilitated the way of trading, storing inheriting and selling wine itself with main goal: keeping the quality of the wine. Today, the progress of viticulture and wine production requires solid vessels for storing wine in terms of easy and safe portability as a contribution to the development of production and trade of “a blissful drop – a gift from Gods”.

Vessels for storing wine in Ancient Rome

Considering the long Roman history (for more see: Maskin, 1951) the Roman rituals included the wine, the enjoyment of the wine and its production were an integral part of the society at that time. Wine was enjoyed by every social class - from emperors to slaves. The wine was produced, sell, inherit and was a part of transportation through whole Roman empire. So, the vessels were in use through Roman history for wine storage. Great deal of authors significant for Rome time period in their writing talk about the vessels, for example Cato the Elder and Varo. So, *Cato* (Cato the Elder) mentions wine 33 times in *De agri cultura*, and also gives instructions how to make Greek wine (Cato: 24). Also mentions *amphorae* as appropriate equipment for a vineyard, jars (*dolia*), as well as *urnae* and the term *vasa vinaria* (a term used to denote any vessel for storing wine). The best definition of *vasa vinaria* we can find in the *Digesta*. So, by this term, the ancient Romans meant a wine vessel that was used together with a wine press. The jars (*dolia*) were considered wine vessels only in situations when the wine was contained in. Otherwise, could be used for another purpose - storing grain, so that makes the *dolia* vessel with multipurpose use in Rome, not just for wine. *Amphora*, also, was considered vessel for storing wine in Rome only when the wine was stored and not, for example, oil or any other product (D.50.16.206.). *Varo* was another Roman who mentioned vessels for storing wine. Source which supports this opinion is *Varo's De rustica*. For example, in 1.65 from *De rustica*, *Varo* mentions:” *Must which is stored in jars (dolia) to make wine should not be brought out while it is fermenting, and not even after the fermentation has gone far enough to make wine...*”. In this manner, in ancient Rome, the vessels for storing wine in the wine cellars (*cella vinaria*) were: amphora (*amphorae*), casks (*dolium*) – jars (*dolium*), pots (*cati*), urns (*urnae*), barrels (*cuppae*), leather bags, leather sacks (*utres*) and huge leather bags, sacks (*cullei*). We have to bear in mind that all of the vessels contained different measure of liquid and were *vasa vinaria* only when contained the wine and only when are used with the wine press (D.50.16.206.). Otherwise, in the same vessels, oil or grain could be stored.

Amphora (*amphorae*) followed the Greek semblance including the materials used for their manufacturing: cylindrical pitchers with two handles, earthenware jars (ceramic), sealed with resin, and contained about 26 liters of wine. The amphoras, in ancient Rome, were the measurement unit when one was selling or purchasing wine (Bělovsky, 2019: 3). For example, when cask of wine was sold, the amount of liquid and measurement was seen through amphoras. If a cask of wine was sold, the price was determined on bases of how many amphoras were contained in the cask. When we talk about the amphoras, one Roman who inherit the wine from wine cellars, along with the wine he inherited also the amphora.



Picture 1. Amphorae, <https://se.dreamstime.com/romersk-potti-och-amforae-romska-potterier-amphorae-som-%C3%A5tervunnits-fr%C3%A5n-ruinerna-i-staden-pompeii-italien-image172506637>

Casks - jars (*dolium*) were also considered as type of vessels for storing wine, were made of earth (clay), contained about 1000 liters of wine, circa 39 amphoras, so the price was settled for one amphora when the wine was sold or bought. Also, *dolium* were useful for storing other food products: grain or oil. Specificity is presented through keeping: casks were kept in wine cellars, buried up to 2/3 in the ground and rarely used for transport, except in specially made ships intended for such type of vessels.



Picture 2. Dolium (<https://glossary.wein.plus/dolium>)

Pots (*cadi*) are mentioned by the Roman lawyers Proculus, Pomponius and Ulpianus. (The authors decided that the term pot is suitable translation in English for the term *cadi* with reference to the material that was made of – clay and containment of measurement and quantity of wine). Proculus and Pomponius mention them in Book 33. Titulus 6, p. 6, 14 and 15 of the Digesta, in a special title dedicated to the legal rules of wine inheritance. In a manner of speaking, the term *cadi* also includes the term amphorae concerning the materials which were used in the process of producing the vessels. Hence, the *cadi* was, also a vessel made of ceramics, earth.



Picture 3., Cadi (<https://nmkv.rs/zbirke/etnologija/cup-e-207/>)

And **urns** (*urnae*) were clay vessels for storing wine, much smaller than *amphorae*, they could contain half an amphora of wine, and were often used by the ancient Romans to store, sell or inherit the wine.



Picture 4, Urnae (<https://josipdol.hr/josipdol/povijest/rim/>)

Barrels (*cuppae*), are perhaps the most similar to what wineries and winemakers understand and use in the production and storage processes of wine today: wooden barrels (*vasa lignea*) fastened with metal hoops, which prevented the wine from freezing and were used in the Alpine regions (White, 1975: 115).



Picture 5, Cuppae (<https://narodni.net/pinteri-staro-zanimanje-izrade-buradi/>)

Ulpianus in the already mentioned book and title of the Digesta (D.33.6.3.1) mentions **leather bags, sacks** (*utres*), which were mostly used for transport because the *amphorae*, often broke during the transportation and consequently the wine spilled out of them. The small *utres* were mostly used by soldiers and travelers, but also by individual consumers who bought wine in small quantities.

In ancient Rome, it seems that **huge leather bags**, sacks also played a significant role in transporting wine, but this time with ox carts, so (*cullei*) were a common image of that historical period. These huge leather bags could contain a quantity of wine of 20 amphorae (Alicic, 2017: 136).

At the end of this part of the article, dedicated to ancient Rome, we are obliged to mention some characteristics that are related to the sale, purchase and inheritance of wine, as well as the vessels for storing wine in that age. Digesta, again, is our main source. The sale was carried out in the measuring unit amphora, and the price was determined for each amphora individually. The ancient Romans pay attention of the quality of wine, so if the sale was made

in *dolium* or *cuppae*, it was necessary to seal them with resin in manner that the wine does not lose any of its quality (D.18.6.1.2). In addition to selling in vessels, the Romans also recognized "bulk" sales. The supplier was obliged to keep the wine until it was measured, and an exact day was set when the wine ought to be measured. If the buyer did not respect this day set by the seller, then the seller could pour the wine out from the large vessels (Jovanovic, Atanasovska Cvetkovic, 2022: 520). A specificity that we can mention for the sale of wine in ancient Rome was the tasting of wine. To the buyer, an opportunity was given: wine-tasting. Before purchasing the wine, the buyer had to be sure of its quality, and at the time, it was quite unusual for someone to purchase wine without tasting it first (D.18.6.4.1). The inheritance of wine had its own rules, also contained in the *Digesta*. As rule that was followed then, in addition of inheritance of the wine, the vessels were also inherited. After all, what made the ancient Romans different and specific was the acknowledgement of the term old wine - old wine was any wine that is not young, that is, the term "old wine" meant every wine produced and preserved, for example, in amphorae, from last year (D.33.6.11).

Vessels for storing wine today

Conditions and equipment for storing and processing wine in the 20th and 21st century have seen significant changes that directly affect its quality and quantity. Winemaking in the world recorded enormous progress in its development in the 1970s and 1980s of the 20th century while, with the introduction of modern electronics as well as new materials for the production of containers for primary and secondary processing of grapes, the control of fermentation as and controlling the quality of the wine was a simple process.

In the period after the Second World War, as well as in the period that followed, the preservation and processing of grapes, as well as the preservation of wine, was mostly carried out in the so-called open vessels, (pools) made most often of concrete, which were then coated with various materials in order to reduce their porosity, and to improve hygiene during the storage and fermentation of young wine. Such containers were used in industrial facilities, wine cellars, which were the largest processors of wine grapes at that time. These pools were made with different capacities, and their capacity was expressed depending on the number of "wagons" that could accept and store them. Remains of such concrete vessels can be found in the oldest wine cellars in the Republic of N. Macedonia even today, but they are not used.

Today, the quality of wine does not only depend on the quality of the raw materials, it also depends on the quality of the fruits that are used both in the primary and in the secondary processing of the grapes. In the processing industry in the last two decades, a massive expansion and use of inox began in the production of various lines of machines for processing both plant and animal raw materials. Of particular importance is the use of inox in the production of equipment and machine lines for primary and secondary processing of grapes, as well as vessels for storing wine in wine cellars. There is a demand for a material that does not leave a metallic aftertaste, and does not threaten the quality of the wine during its maturation and storage. The chemical composition of raw materials of plant and animal origin has no harmful effect on fruits made of stainless steel. It gives excellent results even when storing distillates and alcoholic beverages, without compromising their quality. They are produced in different volumes with a capacity of several liters 1, 3, 5, 10, 15, 25, 30, 50, 100, 200 liters, etc., for domestic use, and up to several tens of tons for industrial use up to 60 tons, and made to order and bigger. Inox vessels are produced in different variants and depending on their construction and way of "working". They are most often placed vertically, in the form of cylindrical vessels with a slanted bottom, equipped with special pipelines for young wine, through which the "hat" is constantly poured and wet. The introduction of precise electronics, as well as computer management and programming of the fermentation process, cooling, as well as the dynamics of silent fermentation, today has greatly facilitated the overall control

over the quality of the wine. Today, the so-called roto tanks, horizontally placed, at a certain angle, where the maceration is much longer, of better quality, and thus the release of the "quantity" of the aromatic specifics of certain grape varieties (Merlot, Cabernet) is also possible.

Inox vessels are easy to maintain, clean and prepare for the next harvest, for the next production year. Their use is long-lasting.



Picture 5. Wine cellar Imako and Wine cellar Skovin (gimar)

For obtaining the so-called top wine, wine that matures in "barrik", (barrel oaks with a strictly defined volume) wooden oak barrels are used, which give special characteristics to the wine and characterize its quality. In these barrels, wine can be stored for several years, increasing its value and quality. The slow fermentation, as well as the aging of the wine, is carried out in oak barrels with different layers, which give the wine a special flavor, aroma and taste. The main role of the wood (oak) is to improve the intensity and complete taste as well as the aroma in the wine, thus reducing the astringency and bitterness, and obtaining the stability of the color and reducing the vegetative herbal aromas in the wine (Garde Cerdán, Torrea Goñi, & Ancín Azpilicueta, 2004; Bozalongo, Carrillo, Fernández Torroba, & Tena, 2007; Macedo et al., 2008; Rayne, Sheppard, Di Bello, & Eggers, 2011).



Picture 6. Oak barrels, wine cellar Popov, village of Sopot

Today, the Republic of N. Macedonia can be proud of quality oak and good craftsmen, especially in Tikves region, who make quality barrels, vessels for storing and aging wine. Wine is like a woman, the more it is preserved and cared for, the more beautiful (delicious) will be.

CONSLUSIONS

Wine, as the oldest drink known to mankind, represents part of its traditions, regardless of whether we are talking about the oldest or the present-day civilization. Many archaeological finds speak for this understanding, the mention of wine is not absent in the oldest civilizational laws so this opinion is confirmed, and wine is regulated today by modern laws which confer the importance of wine as product or better said agrifood product. The need for its preservation in order to preserve its quality has deep roots. Since ancient times, ancient peoples have found ways to store it, and solution was found in vessels for storing wine. It seems that vessels have made their contribution to many segments of life: trade, transport, inheritance of wine. The preservation of the quality of the wine is also essential. Different in appearance, different in quantity of wine, made of earth, clay or ceramics, it seems that ancient Rome had the primacy concerning the fact that vessels for storing wine were part of the Roman legal rules of that time related to sale, purchase or wine inheritance.

The old wine vessels, for the most part, remain a part of history, but it seems that, nowadays, they are being actualized as a way of preserving and storing wine. It seems that are making a “comeback” today. However, modern times, the development of science, techniques and technology have offered new vessels for storing wine. Inox vessels are taking the precedence, but ancient vessels as relics of the past are here. Wooden barrels, today made of oak wood, which the Romans used in the Alpine regions to prevent the wine from freezing, have been preserved from the past. When are we talking about from the renaissance of some vessels for storing wine of the past, amphoras appear again, and they have a stylish and practical character for storing wine.

Bearing in mind the fact that history and the present, fused in this article in terms of wine storage vessels, show an unequivocal need to store wine and the need to trade it or inherit it then and now. Thus, the hypotheses of this paper are confirmed: wine is an important agricultural and food product since the oldest civilization, the vessels are of great importance for storing wine and its quality, vessels made the selling, buying, inheriting and the transport easier, some vessels left the history scene and some of them are still in use today.

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