

WINE IN TALMUDIC TIMES

WHY DILUTE THE WINE?

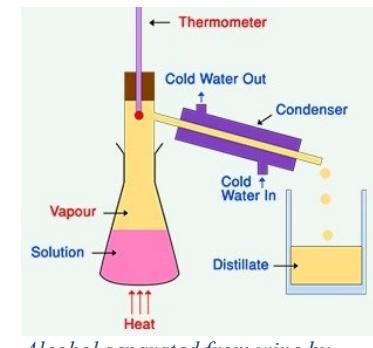
As we traverse the *Avodah Zarah* sugyos about wine, we come across a fascinating comment in Rashi on daf 58b, which rules that wine diluted by an idolater is forbidden. Even though he does not touch the wine, when water flows from the vessel in his hand, it is considered propelled by his force. Rashi describes the ancient practice of preparing wine for drinking by adding water after the wine had been poured into a cup, as wine needed to be diluted. *Berachos* 50b states that one cannot make the wine *berachah* on neat undiluted wine and Rashi explains that in Talmudic times wine was very strong and was not suitable for drinking without adding water. A typical water to wine ratio was 3:1 (*Shabbos* 77a). In which way was wine so different in Roman times from our wine that it had to be diluted?

DILUTION NOWADAYS

In connection with the four cups of wine on Pesach, *Pesachim* 108b teaches that if they were drunk undiluted one does not comply with the “freedom” component of the mitzvah. *Rashbam* explains that the mitzvah is incomplete because undiluted wine lacks prominence. *Rashbam* then adds that this only applies to ancient wine which had to be diluted 3:1, but our wines do not require dilution. *Tosafos* (*Pesachim* 108b s.v. *shasan*) also notes that the halachic water dilution requirement only concerns these ancient wines, but does not apply to our wines which are weak—that is, wine as drunk eight hundred years ago in the time of *Tosafos*. The *Mordechai* (*Pesachim* p.37b) writes similarly that the ancient wines were extremely strong, but our wines are not as strong, so one can drink them undiluted. The *Rosh* and other *Rishonim* do not mention a difference between ancient and contemporary wines and therefore rule that dilution rules still apply to our wines. The *Tur* and the *Rema* follow this view that our wines are weaker and do not require dilution for *kiddush*, four cups and *kos shel berachah*, but *Shulchan Aruch* rules in accordance with the other *Rishonim* that dilution still applies today (*Orach Chaim* 183, 272 and 472). Was ancient wine really so strong?

ALCOHOL STRENGTH

High alcohol levels in spirits are produced by distillation, a process which only came into common use in the thirteenth century. Prior to that alcoholic drinks were produced with fermentation. Natural fermentation only creates alcohol levels up to about 15% ABV (alcohol by volume) as the yeast which generates the fermentation is killed by alcohol above that level, stopping the fermentation process. Fortified wines can have a strength of 18-20% but that is achieved with the addition of distilled alcohol, which was not available in ancient times. Therefore, we are faced with the question: If it was impossible to produce stronger wine in Roman times than today, why was their wine considered so strong that it could not be drunk without dilution?



Alcohol separated from wine by distillation is used to fortify wine

INTENSITY AND COMPLEXITY OF FLAVORS

A clue to understanding why Roman wine was described as strong is to be found in *Avodah Zarah* 32a which discusses Hadrianic earthenware. Hadrian was the Roman Emperor who crushed the Bar Kochba revolt after the destruction of the Beis HaMikdash. Providing his soldiers with ample wine to drink was a priority to boost their morale. The Romans had to maintain supply lines wherever the soldiers operated, involving an extensive transport network across the world. The Gemara relates that the wine was made especially strong by growing the grapes in virgin soil, which had its full potential to insert very intense flavor into the grapes, which were used to produce a quality wine. In the wine trade this is called “terroir” which encompasses the environmental factors that influence a wine's taste, including soil composition, climate, and topography. Minerals in the soil can impart subtle nuances to the wine, and the climate affects the grape ripening process, influencing sugar levels and flavor development. Wine's complex flavors arise from a variety of compounds, including acids, sugars, tannins, esters, and volatile compounds. These interact with each other and are influenced by grape variety, growing conditions, and winemaking techniques. The Gemara does not describe the techniques that the Romans adopted to make this wine, but we know that from external sources, as we shall see. This full-bodied wine was transported to far-flung areas in new amphorae, whose walls absorbed the wine well. The soldiers could drink even on excursions by soaking shards of the earthenware amphorae in water, and even after soaking three times they still had as much flavor as regular wine. It is clear from this Gemara that reference to strength in the context of ancient wine is not to alcoholic strength, but to the quality of the wine in terms of intensity and complexity of flavor.



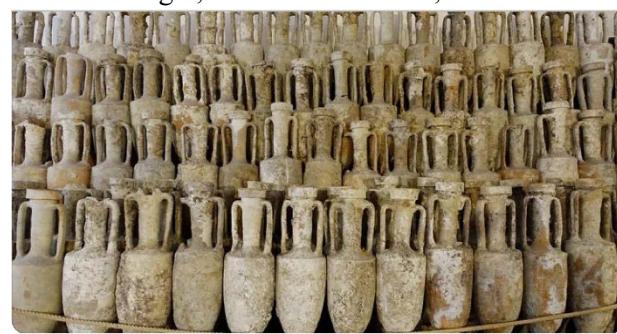
Amphorae stacked for shipping.

ROMAN AND GREEK PARALLELS

As Jewish wine was made in the same way as gentile wine, we should be able to find a similar situation in the ancient non-Jewish world and that may help us discover the reason for dilution. Greek and Roman historical sources vividly back up what Rashi says about ancient wine being too strong to drink without dilution. Plutarch (Greek historian, born around 46 CE) writes “We call a mixture ‘wine’ although the greater part is water. For wine is too fiery and strong and must be tamed by water.” In Homer’s *Odyssey* Book 9, (8th cent. BCE) the hero Odysseus brings strong wine to the Cyclops: “I brought with me a wine so strong and sweet that no one could drink it undiluted — not even in twenty parts of water.” In Natural History, Pliny the Elder (1st cent. CE) devotes Book XIV to the history of wine and describes wines that were so thick they had to be cut with a knife and wines that needed to be soaked or reconstituted with water. Some Roman wines were boiled down into a syrup (like defrutum) to concentrate them, especially for transport or storage. These had to be diluted heavily before use. In ancient times wine was often fermented for longer periods, as fermentation was not interrupted earlier like nowadays to achieve reduced alcohol levels. It was left to become concentrated due to evaporation or boiling (especially in warm climates). There was no modern control over fermentation, temperature, or yeast, so alcohol levels would reach their maximum up to 16%, and the wine could become very dense and syrupy, maturing the multiple compounds found in grapes. They would tend to be much thicker in texture and more acidic or astringent. Hence, drinking it neat could be unpleasant or even unhealthy. Wines were produced in this way because concentrated wine lasted longer without spoiling and it was cheaper to store and transport wine in concentrated form. Thus, their raw wine was more like a concentrate or thick, potent brew.

WHY ROMANS DRANK SO MUCH WINE

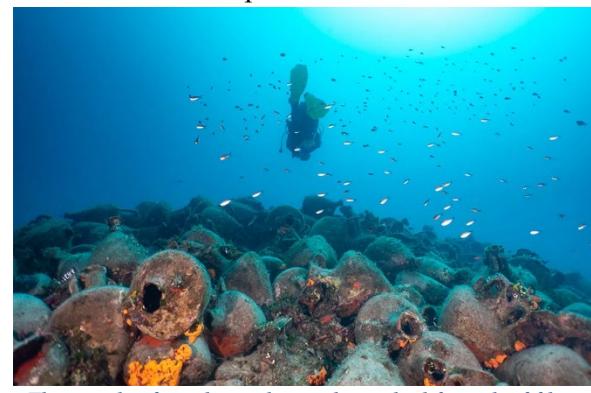
Romans drank large quantities of diluted wine because it was much safer than water, which was often obtained from water sources which were not always clean, so mixing wine with water could act as a mild antiseptic, making the water safer to drink. Pliny wrote: “Wine can make bad water drinkable.” Alcohol (even low concentrations), acidity, and polyphenols in wine inhibit bacteria. Wine was often consumed as a daily beverage, both with meals and as a social drink, like beer today. When Roman writers referred to wines as strong, they did not mean higher alcohol, but they were often referring to flavor intensity, viscosity or sweetness from residual sugar, effects of additives, like herbs, resins, or even sea water, and concentration through boiling or partial evaporation of must, which might slightly raise alcohol content but mostly just thickened or sweetened the wine. The full flavor remains when the wine is diluted with water and the multiple flavors are appreciated when one can discern the different levels of taste. When the Rishonim talk about their wine being weak, they mean that they lack these intense levels of flavor. Today, expert winemakers attempt to produce higher quality wines by careful selection of terroir for their grapes.



Wine amphorae recovered from the Albenga shipwreck.

EVIDENCE FROM SHIPWRECKS

The primary method for transporting Roman wine was via amphorae—ceramic jars with pointed bases and two handles. These design features made them ideal for stacking and securing in ships or embedding in soft ground. Roman shipping was a massive operation; around 400,000 amphorae annually are estimated to have been sent from Cosa to Gaul. Wine ships typically carried up to 3,000 amphorae, equating to around 150 tons of wine aboard each vessel. Several underwater shipwreck discoveries have unveiled intact cargoes of wine amphorae. A 2nd-century BCE shipwreck off Sicily was found laden with wine. The Artiglio shipwreck near Albenga contained over 10,000 amphorae, demonstrating the sheer scale of Roman wine exportation to southern France and Spain. Ancient amphorae, especially those found in shipwrecks, are typically thousands of years old and waterlogged, buried in sediment or seawater. The wine inside is usually completely degraded. What survives is typically, residue (tartrate crystals, organic acids), sediment (charred remains, resins, grape skins/seeds) and sometimes traces of DNA. Laboratory techniques like chromatography allow researchers to identify grape species, wine additives (e.g. pine resin, seawater, herbs, spices, honey), fermentation style, sugar and alcohol content to some extent. The chemical residues that have been recovered tell us that ancient wine was often strong, dense, and sometimes syrupy, supporting Rashi’s assessment of ancient wine.



Thousands of amphorae lie on the seabed from the fifth century BCE Peristera shipwreck off the Greek coast.