

“enslave the heart” (Hosea 4:11, NKJV). This may not infer intoxication so much as indulgence. Scripture describes **“storehouses”** for **“new wine (*tirosh*)”** (2 Chron. 32:28), which may infer the use of some technique to store juice unfermented. It is possible that *tirosh*, at times can refer to wine that goes on to ferment, just as *yayin* can refer to wine that is unfermented (cf. Isa. 16:10; Jer. 48:33), but the two are not synonymous. This shows us that not all “wine” was the same. This is further evident in the account of Daniel, Shadrach, Meshach, and Abed-nego. There was something different about the type of wine the king drank and that which these young men requested to drink instead (Dan. 1:5, 8). This could have been an issue of Mosaic cleanliness, but it could also have concerned the nature of the drink itself.

Were filtering and boiling of wine practiced in the Bible? Scripture directly refers to filtered **“wine on the lees, well-refined”** (Isa. 25:6, KJV, ASV), and its practice is well documented in rabbinical literature (Mishnah, *Terumot* 8.6; Babylonian Talmud, *Shabbat* 139b). The Bible does not refer directly to boiled wine, although it does refer to **“wine mixed with water”** (Isa. 1:22), which was sometimes the way boiled reduced wine was rehydrated. The Hebrew word for “mixed”—*mahol* means “to cut down or reduce”—which could allude to reduction before or after adding water. The word *mezeq* used in Song of Solomon 7:2, refers to wine mixed with water. A document found among the Dead Sea Scrolls uses the same word to refer to “dilute wine” (1Q23 1+6.5). We need not doubt that wines were boiled in biblical times because immediately after New Testament times Jewish rabbinical writings speak often of boiled wines (e.g. Mishnah, *Terumot* 11:1; Babylonian Talmud, *Eruvin* 29a; *Abadah Zarah* 30a-b). Modern Jews still use a wine considered Kosher called *mevushal* meaning “cooked or boiled” wine, the only difference being that modern *mevushal* wines are not reduced and they are allowed to ferment. Filtering and boiling were not the only ancient methods used to hinder alcoholic fermentation, but they were two that could be easily duplicated in a variety of conditions. Having demonstrated the validity of ancient claims regarding these methods it is now even clearer that we must use great caution when reading the biblical record in order to determine the exact nature of the “wine” described in any given text.

¹ I ran this article in last week’s issue on *Faithful Sayings*.

² To read the detailed report of this experiment visit my website: www.ancientroadpublications.com/Studies/BiblicalStudies/GrapeJuiceTest.html



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Bible Wines: Testing Ancient Claims

By Kyle Pope

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How It All Started

In April of 2010, Wilson Adams, who was then editing *Biblical Insights*, ran an article he had asked me to write entitled “Social Drinking—It’s Okay, Right?” 10.4 (Apr. 2010): 20-21.¹ In that article I cited a number of ancient sources who describe methods used in antiquity to impede alcoholic fermentation of grape juice. I demonstrated that scriptural writers use Hebrew and Greek words for “wine” to refer to the liquid produced from grapes at all stages from juice still in the grape (Isa. 65:8), to fresh-squeezed grape juice (Isa. 16:10), fermented wine (Prov. 23:31), all the way to vinegar produced from wine (Psa. 69:21; John 19:29-30). I concluded that while there were certainly alcoholic wines in Bible times, biblical writers concerned with sobriety likely used the techniques described by ancient writers to produce and consume “wine” that was more like what we would call “grape juice.” A short time after the article ran, I was contacted by a brother in Christ with a substantial background in microbiology who took exception to the claims of the ancient writers. After a good deal of correspondence, he declared confidently to me that ancient writers in their attempts to prevent fermentation were “grasping for straws.”

The Testing of Two Ancient Methods

This motivated me to find out for myself. In May of the same year I hand squeezed 11 1/2 pounds of black grapes and produced six test samples. The first was pure grape juice. The second was juice filtered

through a muslin cloth. The third was juice filtered and brought to a boil. The remaining samples were juice filtered, boiled, and reduced to 1/3, 1/5, and 1/10 of their original volume. I tried to find small earthenware vessels that would approximate ancient vessels but couldn't find any suitable containers. Instead, I put the samples in glass containers and sealed them by hand (without any water bath as used in modern canning). These six samples were stored in my office, unrefrigerated until March 2011, at which time my first sample was tested. The remaining samples remained unopened until January 2012 under the same conditions.

The first test I performed was conducted with the assistance of Dr. Pat Goguen, a brother in Christ who is a chemist, and with a chemistry professor at West Texas A&M University in a lab on the campus. This test analyzed my control sample of pure grape juice that had not been filtered or boiled. As expected, this sample had fermented and had ac-

tually attained an alcohol content of 12% by volume! This made it clear that the juice had all of the properties needed to produce strong alcoholic wine if nothing was done to it. *What would the other samples reveal?*

Unfortunately, we were not able to test any of the other samples at that time and planned on testing the remaining samples later in the summer. As circumstance would have it, this was not to be. The professor at WT was not able to help with any other tests, leaving brother Goguen and I to test the remaining samples ourselves. In January of 2012, more than a year and a half after the samples were first sealed, we tested the final samples. I had expected that some alcohol content would be found in the sample that was only filtered. The lid of the jar had tightened but not as much as the control sample. Pressure from fermentation dramatically bent the lid of the first sample. To my amazement after using three different methods to test alcohol content there was no alcohol! The same was true of the remaining boiled samples. Simply by filtering and boiling the juice I was able to preserve grape juice unfermented for a year and a half. If I could do this why would we doubt that the ancients could do the same?²

To bring this matter full circle I thought it appropriate to offer the record of my experiment to the brother in Christ who first took exception to the claims of the ancients. Unfortunately, my test did not change his mind. He thought that the glass jars and lids I had used did not approximate storage methods of ancient times closely enough. The problem with this objection was the control sample. If the control sample that was not boiled or filtered produced 12% alcohol content although kept in the same type of container, we can't blame the jars for the fact that alcoholic fermentation didn't take place in the other samples! After further correspondence with him it became evident that his main concern was not the focus of my test but whether other types of harmful bacteria and microbes would still be present if alcoholic fermentation was prevented. He basically believes that the only way that juices in ancient times would have been safe from harmful growth would be by allowing alcoholic fermentation to occur thus killing harmful elements. Certainly, modern standards of

sanitation, cleanliness, and food preservation are superior to those in the past, but the record of history testifies to the fact that ancient people were able to preserve fruits, vegetables, and juices throughout the year in ways that were safe for consumption. My experiment confirmed this at least so far as it relates to alcoholic fermentation.

Implications for Our Understanding of the Biblical Record

So, what does this tell us about "wine" in the Bible and its use by God's people? The biggest problem in this whole issue is terminology. Modern readers see the word "wine" in Scripture and imagine that it is the same thing a person could buy at the liquor store today. That is a mistake! Most modern wines are fortified with added sugars, yeast, and in some cases even distilled alcohols. In modern language we do not call grape juice simply "wine," but ancient and biblical writers did. In modern usage wine is not diluted with water. In ancient times even pagans did this to alcoholic wines as well as juice that had been boiled and reduced. Clearly there were alcoholic wines, but this is much more complicated than many are willing to acknowledge. Ancient people did as many things with the product of the grape as we do with soft drinks. If today I told you "I drink cola" would you be right in assuming I consume drinks with sugar? No, I am a diabetic, so I drink diet (or sugar-free) "cola." In the same way, the evidence from Scripture and the record of ancient wine consumption demands that when we read the word "wine" in Scripture we must consider the context to determine if the drink in question was alcoholic wine or "wine" that is what we would call "grape juice" or "must" (from the Latin word *mustum* referring to a wine that was simply fresh-squeezed grape juice).

A manuscript from the Dead Sea Scrolls confirms this distinction, speaking of separating out "the must (*halmah*)" (4Q251 5.2), using the Hebrew word for "virgin" in much the same way we speak of "virgin olive oil." In

the Old Testament the way this was most frequently indicated was by the use of the word *tirosh*, which in the Hebrew refers to "new wine." *Tirosh* is that which is found within the cluster of grapes (Isa. 65:8), while it was being trod with the feet (Micah 6:15), and fresh from the "presses" (Prov. 3:10). It is this which is said to cheer "**both God and man**" (Judges 9:13), while the more generic word for "**wine (*yayin*)**" is described as a "**mocker**" (Prov. 20:1) which kings ought not drink (Prov. 31:4). *How can this be talking about the same type of drink?* *Tirosh* was considered a blessing from God (Deut. 7:13; 11:14; 33:28) and taken away as punishment (Deut. 28:51; Isa. 24:7; 62:8). But man is warned not to "**look upon**" the more generic type of "**wine (*yayin*)**"—going on to picture what likely describes the process of alcoholic fermentation—"**when it is red, when it giveth his colour in the cup, when it moveth itself aright**" (Prov 23:31, KJV). Only once is *tirosh* clearly used in a negative sense when it is joined with "**harlotry**" and the more generic word for "**wine**"—*yayin* where all three are said to