

Cider 201 – An Apple A Day – Cider / Yeast experiment

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Shire of Caer Gwyn, Middle Kingdom, Known World

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Introduction

Anglo-Saxon literature tells us the Anglo-Saxons knew of four drinks: *beor*, *ealu*, *medu*, and *win*. We know for certain *ealu* is ale, *medu* is mead, and *win* is wine. While it seems obvious *beor* must be beer, scholars know it wasn’t beer but they don’t know for sure what it was. One of the classic drinks missing is cider, and scholar Ann Hagan [1] makes a good case that *beor* might have been cider. Others dismiss that conclusion and say *beor* was something else, perhaps a barley wine or another type of beverage.

In any case, we do know that true cider does eventually enter England and becomes a popular drink. Clearly, cider has been around for a good long time. Let’s explore.

Ancient History

Historically, apples come into existence 50 to 65 million years ago, around the time the dinosaurs went extinct and during the rise of the primates. Apples also have an extremely complex genetic code, containing nearly twice as many genes as humans. Apples are also heterozygous, able to produce fruit

that doesn't resemble the parent trees. Hence it is very easy to produce a wide variety of colors and flavor characteristics in apples.

Classical Period

The first recorded existence of apple trees is along the Nile River around 1300 BC. We have no idea if the Egyptians or anyone else made cider from these apples.

Through archaeology, we believe the first cultivated apples come from Central Asia, Kazakhstan, where *malus sieversii* grows wild. The largest city in the region, Almaty, has several potential translations but they all involve apples. It could be "full of apples", "apple mountain", or "grandfather of apples." The founding of this city dates back to around 1000 BC.

Around the 4th century BC, we get evidence of the *malus pumila*, which spreads from Asia into Europe by the Greeks and Romans. Our common apples today are descended from this apple.

Homer mentions apples in the *The Odyssey*. Odysseus mentions them growing in the gardens of Alkinoos.

The Persians customarily served apples as a dessert and Phillip of Macedon and Alexander adopted that custom.

In Imperial Rome, the phrase, *ova ad malum*, means from egg to apple. This is in reference to the entire course of a meal and therefore, it means the whole of a thing.

Around 60 BC, Strabo makes reference to cider-like drinks common in Gaul and Hibernia.

We don't know for sure when apples make it to England. It is possible they were growing wild there. When Caesar visits the island in 55 BC, he reports the locals are drinking something made from wild crab apples. We also know that the Romans introduced some of their own apple trees to England. The Vindolanda tablets found near Hadrian's Wall suggest these Roman men from Aestria (Spain) were looking for apples and pears to make cider.

By the fourth century AD, the Romans were drinking perry and Columella mentions 38 different varieties of pears and 24 varieties of apples [2].

Anglo-Saxon Period

Things get confusing in the Anglo-Saxon period. Our modern word "apple" comes from the Old English word "aepel", but there is good evidence that the word was used for any fruit. For instance, *brembel aepel* means blackberry. The same problem exists for *beor*. *Beor* is often used to indicate any type of alcohol. For instance, *gebeorscipe* is a drinking party. *Beordrunken* means very drunk [3].

Martyn Comell notes that after the Conquest, the Norman word "cider" comes into English and the Old English word *beor* leaves the language [4]. Beer enters English again in the 15th century from the German *bier* as hopped, grain beverages are steadily imported for the Flemish wool workers.

Christine Fell [5] suggests that this “beor” was an apple based alcohol, sweetened with honey and fermented to a high alcohol concentration. It could even be done via freeze distillation. It would have been served in small cups and those cups are a common grave good. While Anglo-Saxon paganism is not exactly equal to Norse paganism, it is interesting to me to note that Idunn guards the apples that give the Norse gods their youth and immortality. If this “beor” is some sort of cider made from native crab apples and quite bitter, sweetening it with honey makes sense.

Norman times and beyond

The Domesday book makes one reference to a true Apple Orchard. And with the Normans and their sweet apples, England has something that is very similar to modern cider.

It is from the Normans that we get one final connection between *beor* and cider. In dialectical Norman, the word “bere” means cider. There is a lot of debate on what *beor* means and while I am spending a lot of time on it, it is cider that is important here. Whether *beor* means cider or not, the Anglo Saxons knew about cider (or something sort of like it) and the Normans made it better. If only the Normans had given us their apples and gone home.

Since the Norman apples were naturally sweeter than crab apples, they needed no honey to help ferment them.

Near the end of the 12th century, we get a cultivar apple called “costard.” From this we get the term, “costermonger”, an apple seller.

The site plan for Christ Church Monastery in Canterbury includes a pomerium, an apple garden, for growing apples and pears. This is in the 12th century [2].

Cider and perries became a means to pay tithes and rents. A deed from 1204 for Runham in Norfolk shows “200 pear maines and 4 hogsheds of pear-maine cyder” as annual rent on this manor.

About 100 years later, church records for West Sussex show that 74 of the 80 parishes were paying their tithes in cider.

Farmer tenets received 2 quarts per day of cider as part of their wages.

Just outside of period, we get the *Vinetem Britannicum: A Treatise of Cider*. This was produced in 1676 by John Worlidge and describes the production and processing of apples to make cider. The techniques are not dissimilar now for hand-crafted cider. We can assume that much of the basics extend further back into period as well.

Oswyn’s time

Oswyn (my persona) is from the 960’s in Wessex. Somerset and Wales were and are known for their ciders. West country ciders tend to be more cloudy and bitter. The wild apples have higher tannin content.

We are still a little early for significant Norman influence in England but it is not too distant in time. With the Romans and perhaps some trade with Normandy, it is possible that some of these sweeter apples are in England. After the Conquest, they certainly are. The Welsh and Brittany certainly had some trade as well.

I am going to work this into Oswyn's persona story.

Later Period

Cider is subjected to a heavy tax during the Hundred Years War.

In 1532 Francois I toured Normandy and ordered several barrels of cider made from a specific apple variety.

In 1588, Julien le Paulmier, physician to Charles IX, publishes a treatise on 82 varieties of cider apples.

Styles of ciders

The type of apple really determines the type of cider and regional apples will produce a much different cider. As said previously, apples have many different varieties and produce different cultivars easily.

The early Spanish Romans, the Asturians, have *sidra* made from local Spanish apples. One unique difference is how it is served. Small amounts are poured from great height to induce air bubbles to give it a taste of sparkling cider without priming sugar. Sidra tends to be very dry, having almost no sweetness.

West Country English ciders tend to be complex and more bitter.

East Country English ciders tend to be sweeter.

Portugal used to be a major cider producer in Period. Their ciders were probably similar to Spanish ciders.

French ciders tend to be sparkling but it is post period. Charlemagne ordered his brewers to always be present on his estates to make, pomme and perry, among other things. Calvados is a distilled cider spirit.

Germany gives us appplewine. It can be higher in alcohol as it is closer to a true wine.

Perrys, mentioned above, are a cider-like drink made from pears. Wild pears are even more bitter than crab apples and didn't make good juice. Once pears are bred to be sweeter, perry comes into existence. In some places, there is no linguistic distinction between pear and apple (both are pommés in French until later).

Most bottled available ciders, like Woodchuck and Angry Orchard, are what is called Draft Ciders. They are made with the juice of dessert apples, fermented to up to 14% ABV, then diluted back with water or apple juice to around 5% or so.

Farmhouse ciders, or English ciders, are small locally produced ciders on farmsteads. About 5% ABV.

French ciders are typically sweeter and come in at 2 to 4% ABV.

Cyser is sometimes considered a type of mead. It is a cider made with honey to increase the ABV.

Apple Wine is a cider with added sugars to get an ABV in the 9 to 12% range.

Applejack is a cider that has undergone freeze distillation to produce an apple spirit in the 30%+ ABV range.

Making Cider

In the brewing world, cider is technically a wine. There is no heat involved and it simply fruit juice that has been fermented. We often substitute it for a beer or ale because the ABV is often more similar to beer or ale.

Apple juice, yeast, and flavorings are all that are needed.

If you consider that a commercial cider is ~\$10 per six-pack. That translates into ~\$1.67 per 12 oz bottle.

Store bought frozen apple juice concentrate comes in at ~\$2.00 per 48 oz plus yeast or ~\$0.50 per 12 oz bottle. It isn't exciting but it is drinkable. It is a good base if you are going to add flavorings.

My local orchard sells their sweet cider for as low as \$7.00 per gallon. That comes out to \$0.78 per 12 oz bottle. This is going to be complex as they are juicing whatever apples they have.

Juicing apples from the store or orchard is possible if you have the equipment. These will generally run you from ~\$1.25 to \$3.90 per 12 oz bottle though. And you have to do a lot of work. It can be worth it if you want to control the apples you are using.

Then there is growing your own apples. Not including the equipment costs and the trees, this can be very cheap but you have to grow, harvest, and juice the apples. It can be as low as \$0.37 per 12 oz bottle.

Cider and Yeast

I did an experiment. Using Old Orchard frozen apple juice concentrate, I made a cider and varied the yeast. The 12 yeasts I used were Red Star's (actually fermentis now) [6] Cote de Blanc, Premier Rouge, Premier Blanc, fermentis [6] SafCider, SafAle US-05, SafAle S-33, SafAle S-04, SafAle T-58, Saflager S-23, SafLager W-34/70, SafLager S-189, and Lalvin EC-1118 [7]. These were chosen because they were readily available as dry yeast at a low cost.

The initial gravity of all ciders was 1.06 and the final gravity was 1.00. All ciders were therefore 7.8% ABV. All ciders were 18 oz of juice concentrate to 40 oz for water. No additional sugars were added. Each batch received ~ ¼ tsp of yeast nutrient as well.

Tasting notes

I tasted each sample unchilled. Ideally, cider should be chilled but I didn't have the ability to chill 12 growlers at once. Samples were pulled with a wine thief.

Yeast	Normal purpose	Alcohol Tolerance	Notes	Like (y/n)
Cote de Blanc	White wines, cider, mead	12-14%	Neutral nose, neutral taste	?
Premier Rouge	Red Wines, berry wines	14-16%	Neutral nose, neutral taste; hint of tannin	?
Premier Blanc	White Wines	13-15%	Neutral nose, grassy taste	?
SafCider*	Ciders	16%	Fruity Nose, good fruit, semi-dry	YES
SafAle US-05	American Ale Yeast	9-11%	Neutral nose, some fruit, semi-dry	Yes
SafAle S-33	Belgians and Stouts	9-11%	Red wine nose, malto-lactic taste	?
SafAle S-04	English Ale Yeast	9-11%	Fruity nose, full body taste	Yes
SafAle T-58	Wheat Beers	9-11%	Dry, neutral taste with some apple. Slightly acid nose	?
SafLager S-23	German Bottom Lagers	9-11%	Dry, crisp, neutral nose	?
SafLager W-34/70	Weihenstephan	9-11%	Neutral nose, dry, phenol aftertaste	NO
SafLager S-189	Swiss Bottom Lagers	9-11%	Clovy nose, more fruit, semi-dry	Yes
EC-1118	Wine, Champagne	18%	Sulfur nose, neutral taste	NO

- Fermentis now has several safciders for a wider range of ciders. As far as I can tell, the original safcider is now Safcider AB-1, for a balanced cider.

References

[1] Watson, Cider Hard & Sweet, The Countryman Press, 2013.

[2] Hagen, Food and Drink in Anglo-Saxon Times.

[3] Peter C Horn, THE ALCOHOLIC DRINKS OF THE ANGLO-SAXONS. <http://www.tha-engliscan-gesithas.org.uk/archives/the-alcoholic-drinks-of-the-anglo-saxons>

[4] <https://archive.is/20140818113740/http://zythophile.wordpress.com/2010/01/27/words-for-beer-2-%E2%80%93-was-beer-originally-cider/>

[5] Fell C., Old English Beor.

[6] www.fermentis.com

[7] https://www.lallemandbrewing.com/docs/products/tds/TDS_LALVIN_EC1118_ENG_DIGITAL.pdf

Class Tasting Note Page

Yeast	
Cote de Blanc	
Premier Rouge	
Premier Blanc	
SafCider*	
SafAle US-05	
SafAle S-33	
SafAle S-04	
SafAle T-58	
SafLager S-23	
SafLager W-34/70	
SafLager S-189	
EC-1118	