

Lochac Brewers, Vintners and Imbibers Guild

Canterbury Faire 2015 Competition – Cider

Entrant: Mistress Rohesia Le Sarjent

Entries: Serpent's Kiss Cider

Red Zone Avon Cider

Red Zoned Crab-apple Cider

Summary.

I have entered three apple ciders made with different mixes of Kiwi back yard apple varieties, including crab-apples and quinces, which are very closely related “pomme” fruit.

I have tried to stick to period methods using modern equipment. Fermentation was achieved using wild yeast which occurred naturally on the fruit. No cultured yeast or yeast nutrients were added. Some modern chemical additives were used in an attempt to make a clear, sweet, sparkling cider, more in keeping with the modern palette than period practice as I was brewing for the populous, but I have tried to keep these to an absolute minimum.

The documentation covers:

A Little on the History of Cider

The Process of Keeving

Choice of Fruit

Equipment Used

Additives Included

Notes for Next Time

It then goes into detail about each of the three offerings and ends with a list of references and finally the full text of my main source, SIR PAUL NEALE'S WAY OF MAKING CIDER from The Closet of Sir Kenelm Digby Knight Opened.

A Little on the History of Cider:

The history of cider making is unclear with much debate around its origins and spread, especially regarding the terminology and which words in which languages indicate fermented apple juice. The Greek writer Pliny the Elder mentions some sort of fermented drink made from apples or quinces, and a drink made from both apples and pears seems to have been popular across north and eastern Europe during late Roman times. The earliest written recipe is reputedly contained in the *Geoponica*, a twenty-book collection of agricultural lore, compiled during the 10th century in Constantinople for the Byzantine emperor, but I was unable to find a translation.

Crab apples appear to be native to Britain, and may have been used in conjunction with honey for alcoholic drinks but the Romans introduced desert apples, orcharding and cider making. These were quickly forgotten once the Romans left and only renewed with the establishment of Christian monasteries. The Norman Conquest introduced, or perhaps reintroduced the Northern European love of cider to Britain, along with new varieties of apples most valued for cider making.

The word "cider" comes into the English language in the 13th century as Middle English *sidre*, from Anglo-French, from Late Latin *sicera* strong drink. Prior to this it was probably known by the Saxon term "Æppel-win". Workers in the monastery orchards (pomarium) in the 13th century received a daily allowance of cider as part of their wages.

I was unable to find any confirmed medieval period recipes however the collected recipes in "The Closet of Sir Kenelm Digby Knight Opened" published posthumously in 1669 contains three cider recipes. Two have the fruit boiled in water and the juice then extracted in the ancient manner, but in SIR PAUL NEALE'S WAY OF MAKING CIDER the fruit is crushed and pressed then put through a process I take to be "keeving" to clarify the juice before fermentation in the bottles.

The Process of Keeving:

Most medieval ciders would have been dry, cloudy and for the most part still. Pressed apple juice is full of pectin, which is great for setting jam, but not so good in brewing. It holds a lot of nutrients which encourage vigorous yeast growth and the rapid conversion of sugar to alcohol, hence the dryness. It also produces an inherent cloudiness that does not settle over time, as it does in low pectin fruit wines. Sir Paul Neale's recipe warns that ordinary cider, i.e. not his superior kind, becomes "harder" meaning drier and more alcoholic the more it "works". Our modern conception of good cider being both sweet and clear presented a problem, as I was brewing for a populous which has those expectations. I have, therefore, attempted to cater to modern tastes by adopting the just post period method used in Sir Paul's recipe.

Keeving is a late period method of removing pectin, excess yeast and nutrients from the juice prior to

fermentation, allowing a slower more controlled process. The modern chemical explanation is that as juice is allowed to settle in the barrel, the natural pectin esterase enzymes in the apple juice slowly change the pectin to pectic acid. This forms a gel as it cross-links with the natural calcium in the juice and a 'brown cap' rises slowly to the surface. The clear sweet juice can then be tapped off and fermented in the bottle, producing a naturally sweet sparkling cider. However this is a very delicate process traditionally carried out during the north European winter at temperatures below 5 degrees when fermentation is minimal. It requires perfect timing as well as just the right balance of nutrients and calcium in the fruit so despite the use of a refrigerator and adding calcium and salt as recommended, my several attempts to 'keeve' failed completely. I resorted to using commercially available brewers pectinase enzyme which is the modern means of breaking down the pectin..

Choosing your fruit.

The varieties of apples available today are all modern cultivars. Sir Paul Neale's recipe states *"The best Apples make the best Cider, as Pearmains, Pippins, Golden-pippins, and the like. Codlings make the finest Cider of all."* In modern cider producing countries specially bred cider varieties are grown which contain just the right balance of acid, tannin and sugar. These apples aren't pleasant to eat (one source called them "spitters") but they make excellent cider. In the absence of these, modern cider makers recommend blending apples in order to achieve this balance. I had access to several varieties of backyard grown "desert" apples which are good for sugars but lack appropriate flavour. I also had red and yellow crab-apples, and European and Japanese quinces which are good for tannins and acids respectively. I made three ciders using various blends to achieve the different flavour profiles.

Equipment Used.



The traditional method is to "scrat" or crush the apples in a huge stone mill as shown above. The pulp is then placed in cloth bags, referred to as "cheeses", and the juice pressed out. Lacking either of these devices I opted for an electric juicer and a cloth "jelly bag" wrung out by hand. (Oh my poor hands!) I juiced the apples in batches, added pectinase and let it sit in a refrigeration for 24 hours, then strained it through the jelly bag resulting in a fairly clear juice which was added to the fermenter.

Medieval brewers used wooden vats and barrels. (Sir Paul's recipe uses the older spelling of vat, with an "f".) Having neither of these available I used large 3-5 ltr pickle jars as vats to hold the juice while the pectinase worked, and standard plastic home brew fermentation barrels with airlocks.

Most medieval cider would have been still, with a little "fizz" only if drunk short, i.e. before the yeast had converted all of the sugar. It was transported in and poured from the barrel or decanted into jugs or ceramic bottles. Keiving and the invention of strong, uniform glass bottles by none other than Sir Kenelm Digby in the 1630's allowed for a more controlled fermentation and the hence a sweet, sparkling cider as per Sir Paul's recipe. He specifically warns that *"if there be a danger of their working (which would break the bottles) you may take out the stopples, and let them stand open for half a quarter of an hour."* My ciders were finished in plastic bottles and have a very creditable sparkle to them, however I am presenting them in more period looking ceramic and pewter containers. Whether or not they have any sparkle left will depend on how well these vessel seal.

I used a modern hydrometer to take specific gravity readings, a measure of how much sugar the juice contains, just before each batch was added to the fermenter. To ensure that levels of sugar are high enough to produce a reasonably alcoholic cider (8-10%) an SG of greater than 1.055 is recommended by the websites I consulted. Mine had an average of just below that, SG 1.050.

Additives Included.

Modern cider is made with pasteurised fruit juice, which removes any potentially harmful yeast and bacteria and a specifically cultivated cider yeast is then added. Medieval cider used whatever airborne yeasts had attached themselves to the fruit which gives less predictable and sometimes unfortunate results. I used the period approach, no sterilization and let the naturally occurring yeast flourish.

All of my apples were backyard grown and came with a plentiful supply of yeast spores so much so that, unless refrigerated, fermentation would start within half an hour of juicing.

Initially I added a little ground egg shell & salt to help with the keiving process, but because this failed I resorted to brewers pectinase, and added small amounts of Sodium metabisulphite and Potassium sorbate to the first two ciders trying to regulate yeast activity. This also failed and since some people get reactions to these chemicals I didn't bother adding any to the third. Additional ground egg shell (Calcium carbonate) was used in the first cider to take the edge off the acidity.

Notes for Next Time.

In future I won't bother keiving or stopping fermentation, just use the pectinase to clarify the juice. The wild yeast strains seem more resistant to chemical additives than cultured yeast so it's a waste of effort and not a period method anyway. I very much like the way which the crab-apple cider has mellowed and will be keen to experiment with more high tannin, high acid blends.

Serpent's Kiss Cider: Begun Late February 2014 – Bottled Early April 2014

Made from approximately 1.2 banana boxes of Cox's Orange (An English pippin variety from the 1830's) a half a box of Peasgood Nonesuch (An English pippin cultivar from the 1850's), one box of Braeburns (A New Zealand cultivar from 1950's), a few Granny Smiths (an Australian cultivar from the 1860's) most of which came from the back yard of a friends flat, and half a supermarket bag of "Butter ball" crab apples which came from a neighbour.



This was my first attempt at keeving so to the first 5 ltrs of very bland Peasgood Nonesuch juice I added a little ground egg shell and some sea salt, which supposedly aids the process as well as a small amount of rock sugar to bring the SG up to 1.045. The desired separation didn't occur so I gave up and added pectinase. I didn't bother trying to keeve the second batch of juice which was a mix of the listed apple varieties and had a much better flavour profile. The only additive was the pectinase.

The cider had fermented out to SG 1.0 and was fairly dry, so in hopes of getting a sparkling cider I used the recommended amount of potassium sorbate to kill off/ slow down the yeast. The flavour profile was very acidic so I also added more ground egg shell (calcium carbonate) to counter act that and racked it. (i.e. syphoned it off the yeasty sludge into a new fermenter) I "back sweetened" the cider with some additional apple juice, including the crab apple, which had been boiled to both reduced sterilize it, and then bottled the cider. Back sweetening, i.e. adding sugar after fermentation is a common practice in modern cider making. We don't know specifically whether it was used in period with regard to cider by medieval wine seem to have been back-sweetened with honey frequently.

Unfortunately the potassium sorbate barely put a dent in the wild yeast so vigorous fermentation resumed in the bottles, meaning a build up of pressure and yeasty lees (sludge). I had to pour everything back into the fermenter. I then washed all the bottles and added 1.4 of a teaspoon of Sodium metabisulphite in an attempt to knock the yeast out and re-bottled it. This still didn't slow things down completely so I followed Sir Paul's advice and let the pressure off regularly until fermentation eventually stopped. This resulted in a small but acceptable layer of lees in each bottle.

From this I produced about 25 ltrs of cider. When bottled it was still quite "bitey" hence the name "Serpent's Kiss" however with time it has mellowed and the flavours matured well, with a very pleasant sparkle developing. In all three ciders have a slight sediment produced by the bottle conditioning which sometimes rises as the bottle is opened, but quick pouring usually avoids this.

Red Zoned Avon Cider: Begun Late February 2014 – Bottled Early April 2014

The was made primarily from fruit “scrumped” (picked without permission) from deserted earthquake damaged properties of the Avonside Red Zone consisting of approximately 20 kg Cox's Orange, 14 kg Red Delicious, 7kg Golden Delicious, 7 kg Braeburns, and 5 kg “Butter Ball” Crab Apples.

I attempted to keeve the first 5 ltrs of Cox's Orange juice, adding only a little egg shell and salt, but again it failed miserably so I resorted to pectinase and let the wild yeast fermentation start.

Again I attempted to kill the yeast off once SG reached 1.0 using Sodium metabisulphite (1/16 tsp per gallon) and potassium sorbate (1/4tsp per gallon) then back sweetened with reduced juice, but as before this was a complete failure. The yeast took off as soon as the back sweetening was added so I had to pour everything back into the fermenter and let it ferment out again.

On bottling, this cider was far too dry for my tastes and also rather bland so I made up a syrup by poaching 1 kg of Quinces and 1 kg of Japanese Quinces in water and sugar. This cider was back sweetened with 60 mls of this quince syrup per 1.5 bottle shortly before presentation.

Red Zoned Crab Apple Cider: Begun Late March 2014 – Bottled Mid April 2014

This was made primarily from Red Crab Apples (possibly the variety *Malus Dolgo*) juiced with equal amounts of Red Delicious and a few Japanese Quinces. Due to the high acid content this juice came out a brilliant ruby red colour which did not oxidise to the golden brown of the other juices. I didn't attempt to keeve this, just used the pectinase and allowed the endemic wild yeast to do it's thing.

Partway through fermentation I noticed the airlock was giving off a very odd smell and opened it to take a good sniff. The smell was eye watering; something like old socks, but not in a blue cheesy way; something like swamp water, but in a crisp almost hair spray sort of way. However, on exposure to air the aroma evaporated off quickly to a rather pleasant peachy/daffodil fragrance.

I consulted the Lochac Brewer's Guild who suggested this was likely the result of unpredictable volatiles being given off by the unidentified strain of wild yeast. They suggested I rack the cider and add one cup of refined white sugar to let the yeast finish on something “clean”. Much to my surprise this solved the problem completely; all bad smells vanished. On bottling the cider was very tannic, a little like sucking a tea bag, but with age it has mellowed favourably and taken on a very nice sparkle. The ruby colour has browned a little but it's still a distinctively red cider.



References:

- Cider <http://www.merriam-webster.com/dictionary/cider>
- Cider <http://en.wikipedia.org/wiki/Cider>
- Origins of Cider http://cideruk.com/cider_making/origins_of_cider
- Dalby, Andrew Food in the Ancient World from A to Z
- Geoponica <http://en.wikipedia.org/wiki/Geoponica>
- A History of Apple Growing in the UK <http://homepage.ntlworld.com/scrumphy/cider/history1.htm>
- The Beginning of Orchards by Rebecca Roseff; 2007
http://www.archiveofciderpomology.co.uk/origins_of_cider.htm
- Keeving - What's That? <http://www.cider.org.uk/keeving.html>
- Cider Apple http://en.wikipedia.org/wiki/Cider_apple
- Vat <http://dictionary.reference.com/browse/vat>
- Sir Kenholm Digby invents modern wine bottles in the 17th century
<http://kimmesseri.com/revolution-glassmaking-paves-way-modern-wine-bottles/>
- The Closet of Sir Kenelm Digby Knight Opened
<http://www.gutenberg.org/files/16441/16441-h/16441-h.htm>

SIR PAUL NEALE'S WAY OF MAKING CIDER

The best Apples make the best Cider, as Pearmains, Pippins, Golden-pippins, and the like. Codlings make the finest Cider of all. They must be ripe, when you make Cider of them: and is in prime in the Summer season, when no other Cider is good. But lasteth not long, not beyond Autumn. The foundation of making perfect Cyder consisteth in not having it work much, scarce ever at all; but at least, no second time; which Ordinary Cider doth often, upon change of weather, and upon motion: and upon every working it grows harder. Do then thus: Choose good Apples. Red streaks are the best for Cider to keep; Ginnet-moils the next, then Pippins. Let them lie about three weeks, after they are gathered; Then stamp and strain them in the Ordinary way, into a wooden fat that hath a spigot three or four fingers breadth above the bottom. Cover the fat with some hair or sackcloth, to secure it from any thing to fall in, and to keep in some of the Spirits, so to preserve it from dying; but not so much as to make it ferment. When the juyce hath been there twelve hours, draw it by the spigot (the fat inclining that way, as if it were a little tilted) into a barrel; which must not be full by about two fingers. Leave the bung open for the Air to come in, upon a superficies, all along the barrel, to hinder it from fermenting; but not so large a superficies as to endanger dying, by the airs depredating too many spirits from it. The drift in both these settlings is, that the grosser parts consisting of the substance of the Apple, may settle to the bottom, and be severed from the Liquor; for it is that, which maketh it work again (upon motion or change of weather) and spoils it. After twenty four hours draw of it, to see if it be clear, by the settling of all dregs, above which your spigot must be. If it be not clear enough, draw it from the thick dregs into another vessel, and let it settle there twenty four hours. This vessel must be less then the first, because you draw not all out of the first. If then it should not be clear enough, draw it into a third, yet lesser than the second; but usually it is at the first. When it is clear enough draw it into bottles, filling them within two fingers, which stop close. After two or three days visit them; that if there be a danger of their working (which would break the bottles) you may take out the stopples, and let them stand open for half a quarter of an hour. Then stop them close, and they are secure for ever after. In cold freesing weather, set them upon Hay, and cover them over with Hay or Straw. In open weather in Winter transpose them to another part of the Cellar to stand upon the bare ground or pavement. In hot weather set them in sand. The Cider of the Apples of the last season, as Pippins, not Peermains, nor codlings, will last till the Summer grow hot. Though this never work, 'tis not of the Nature of Strummed Wine; because the naughty dregs are not left in it.