A Hard Cider Primer for Homebrewers

- Fresh pressed cider is best but if you purchase cider at the grocery, make sure you are getting cider that has been pasteurized.
- When collecting or buying apples, be mindful that there are endless varieties of apples but generally they are in two classes, cider apples and dessert apples. Cider apples tend to be more tart and have less sugars. Selecting varieties for cider making is a book-length article in itself but unless you live in an orchard-rich area you will often be using whatever you can get in sufficient quantities. All, even the ubiquitous Red Delicious, can make good cider.
- If you have an option to mix varieties of apples to press, do so. It is very rare that better cider results from a single varietal than from a mix. Some cider-specific varieties like Kingston Black are the exception. When mixing, it's not a bad idea to also include some otherwise inedible varieties like crabapples in small (less than 10%) quantities. They will contribute a nice sharpness but don't overdo it.
- If you want to make sweet tasting (rather than dry) hard cider, put some juice aside at this point for freezing. You will need it later.
- After pressing, use potassium metabisulfite (or some other sulfite compound suitable for winemaking like campden tablets) to kill the native wild yeasts present on the apple skins. If you don't kill these before pitching your pure culture, you may get off flavors and unanticipated tastes. Follow the instructions on your purchased packaging but I generally use about 5/8 teaspoon per 5 gallons.
- Wait 24 hours after sulfiting to pitch your yeast or the sulfites may still be present in sufficient quantities to inhibit fermentation.
- After the 24 hours, pitch pectic enzyme if you desire, for clarity. Wait another 12 hours before pitching.
- When you pitch yeast, it's a good idea to also pitch some yeast nutrient since the juice (called "must" just as grain-based extract is called "wort") lacks the amino acids necessary for healthy yeast growth. White Labs makes WLN 1000, which is popular with cider makers. Add twice the amount that you would for wine.
- Yeast selection for cider is as varied as it is for beer but in general, you want at clean-fermenting yeast that doesn't throw off too many sulphur compounds. You also don't want to under-pitch in quantity and make the yeast work harder than it ought to. Since you've got to wait on the sulfites to work anyway, why not make a yeast starter as well? A 2L starter per 5 gallons of cider is about right.
- Some of the best cider I've had and made has come from dried wine yeast. I've also made some using liquid Wyeast's cider blend that was undrinkable. The moral is; more expensive yeast doesn't necessarily equal better cider. Montrachet, Lallemond EC-1118, and Red Star Premier Cuvee (blue packet) are cheap, readily available, and make good cider. A basic Nottingham yeast is also good. Winners from the two cider categories (BJCP 27 and 28) at this year's National Homebrew Competition were made with the White Labs WLP775 English Cider culture. Wyeast 4766 Cider and Mead is ok but nothing special.
- As with beer, oxygenation is important. Yeast are yeast and they need oxygen to prosper.

- Acid content (measured in pH) is more critical to making cider than beer. Measure using pH papers or a pH meter if you have access to one. Adjust to taste by adding malic acid. At pressing, a pH range of 3.4-3.8 is typical. Add 5-15 teaspoons of malic acid (%) to bring out a sharper taste to the finished product. I generally aim for a pH of 3.2-3.4 but your taste may vary.
- Sugar content will vary considerably with the mix of pressed apples but is generally around 1.045-1.050. Dry cider will finish close to 1.000, or even below.
- To make sweet cider, the best way is to "backsweeten" by adding unfermented juice that you have saved and frozen from pressing day. You can also use a formulated wine conditioner product. First, make regular dry cider, add the frozen juice or wine conditioner and bottle. DANGER. If left too long, the bottles will explode as fermentation will re-start. You want enough to create carbonation but not so much that dangerous pressure is built up. You can stop fermentation by either heat (pasteurizing) or cold (cold crashing).
- Some cidermakers also use a potassium sorbate compound to stabilize and prevent refermentation in the bottle after backsweetening. This will result in a still cider (uncarbed) but could be force-carbed with CO2.
- Age for at least a couple of months in a secondary fermenter to allow it to clear. You may want to use a fining agent if clarity is important to you.
- Some ciders are further aged on oak, which imparts more flavor and color but don't overdo it.

Some references

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Pooley, Michael and John Lomax. Real Cidermaking on a Small Scale. Dorset, England: Special Interest Model Books, 2002.

Proulx, Annie and Lew Nichols. Cider: Making, Using and Enjoying Sweet and Hard Cider, 3rd ed. North Adams, MA: Storey Publishing, 2003.

Homebrew Talk, Cider forum
http://www.homebrewtalk.com/f32/

Brewing TV, Episode 67
http://www.northernbrewer.com/brewingtv/