

Hard Cider Basics for NW Gardeners

We live in a great region for growing apples. Why not make a great adult beverage with your harvest?

Apples for Cider

15-20 lbs fruit=1 gl. juice (5 ½ - 6 gls. juice= 5 gl. carboy after primary ferment). Sweet, commercial 'dessert' apples give more juice than cider or russet varieties. 100-120 lbs fruit is needed for each 5 gl. carboy. 5% up to 20% should be Astringent (bittersweet or bittersharp) (5-20lbs). Our best cider has been about 10-15% bittersharp, 30-40% aromatic/tart and the rest neutral.

Some good varieties of **astringent cider apples** (5-20%) for our area:

- Kingston Black- Bittersharp, strongly biennial, fruit has soft tannins and can be used for purposes other than cider.
- Yarlington Mill- Bittersweet, slightly biennial. A good balance of sugars, acids and tannins, suitable for varietal cider or blending.
- Harry Masters Jersey- Bittersweet, somewhat biennial. Good variety for blending
- Reines des Pommes- A full bittersweet, producing sweet astringent juice. One of the few cider varieties that is not strongly biennial.
- Brown Snout- Bittersweet, soft tannins and high sugar make it suitable for varietal cider or blending.
- Dabinette- a full bittersweet, consistent cropper, late to ripen. Good for blending or as a varietal cider.

Neutral varieties can make up 30-60% (50 lbs)

- Jonagold, Melrose, Liberty, Honeycrisp, Spartan, Elstar, Pinova, Sayaka, Zestar, Tsugaru, Beni Shogun Fuji

Tart varieties- 10-20% (10 lbs)

- Gravenstein, Karmijn, Queen Cox, Freedom, Idared

Aromatic varieties- 10-20% (20 lbs)

- Red Alkmene, Gravenstein, Karmijn, Queen Cox, Ashmeads Kernal, Roxbury Russet, Ananas Reinette, Hudson's Golden Gem, Grimes Golden, Golden Russet



Pressing the apples

Equipment:

- Grinder and press, or purchased fresh juice. If purchasing juice, try to get unpasteurized or UV pasteurized. Heat pasteurization usually yields a less desirable cider.
- Primary fermenters- We like 6-7 gl. food grade buckets with lids
- Hygrometer or refractometer
- pH meter or test strips
- Sanitizers- Iodine, Sulfur based, or acid based (preferred) such as Star-San
- Carboys- glass preferred
- Airlocks- multiple designs exist; get ones that are easy to clean
- Yeast
- Pectic Enzyme, yeast nutrients (optional)
- Sulfiting agents: metabisulphite, sulphur dioxide or SO₂

Process:

Wash and sanitize the primary fermenter(s). If pressing your own apples, wash and sanitize your press and grinder. Wash the apples before grinding. Do not use windfalls or fruit that has any sign of rot.

Fill the primary fermenters to about 4 inches below the rim. If using several varieties of apples, you can blend by mixing the apples during pressing, or mix the juice after pressing. If making a varietal (single variety) cider, keep the juices separate. After blending, test the juice for specific gravity (potential alcohol) and pH.

Sulfiting before adding yeast protects the cider from various 'cider sickness' or problems. If the fruit was clean, and the pH low enough, you can skip the sulfiting. Adding pectic enzyme now will give you a clear cider at the finish. Put the airlock fitted lids on the buckets to keep out fruit flies.

Addition of Sulphur Dioxide		
Juice pH	SO ₂ needed in parts per million (ppm)	Campden Tablets per gallon or ml. of 5% SO ₂ stock solution per litre
Above 3.8 (insipid)Lower pH to 3.8 with addition of malic acid.....	
3.8 - 3.5	150	3
3.5 - 3.3 (balanced)	100	2
3.3 - 3.0	50	1
Below 3.0 (sharp)	None	None

24 hours after sulfiting, pitch your yeast. Almost any brewer's yeast will work, and different yeasts will produce different flavors in your cider. We have tried many wine, champagne, cider, and even some ale yeasts, and have come to prefer Epernay II AKA Cotes des Blanc wine yeast for our cider. Experiment with different yeasts on the same juice to find your preference. Yeast nutrient can be added with the yeast to ensure a quick start to your fermentation.

Fermentation should begin within 48 hours. At this point, we keep our cider inside the house, usually with room temperatures of 60-70 degrees. Many yeasts need some warmth to get going. Slow to start ciders can be subject to problems. Ciders that ferment too fast also can have off flavors. The goal is active fermentation within that 2 day period. This initial fermentation will be quite foamy, hence the headspace in the primary fermenter. After about a week, the fermentation will slow down and become steady. Check the specific gravity; it should be somewhere around 1.005 or 1.006. At this time, the cider can be transferred/racked into your sanitized carboys/secondary fermenters and fitted with airlocks to finish the ferment. We move our carboys to a cool, insulated room in our garage to finish the fermentation.

The cider will slow down because of the cooler temperatures; this slow fermentation is believed by



many to give a richer cider flavor. Check the carboys occasionally for bubbling. As the cider approaches dryness, the bubbles will become tiny and infrequent. At this point, you can draw some of the cider out and check again for specific gravity. A good specific gravity for bottling is 1.001-.997 if you like dry cider.



Bottling the cider

Bottling

Once again, sanitation is critical! Wash and sanitize your bottles. Rack the cider off the lees (yeast deposits) into a sanitized bottling bucket. If you want some bottle carbonation, add a sugar solution to the bottling bucket. 1 cup of sugar boiled in 2 cups of water will dose 5 gallons of cider. Fill the bottles and cap with crown caps. It will take 2 weeks to a month for the added sugar 'dosage' to carbonate the bottles. Still cider can be bottled in wine bottles and corked. Bottled cider whether still or carbonated improves over the next few months, but is best drunk with a year or two after bottling. Cider can also be racked into kegs and force carbonated.

"I want to add cider trees to my orchard"

How do you decide which cider trees to plant? A few questions to ponder:

1. Do I already have apple trees planted? What kind? When do they ripen?
 - a. These questions help you choose cider trees that can be used to blend with existing apples. Choosing cider varieties that ripen close to the same time as the existing dessert apples makes the process of pressing for juice easier.
 - b. So, what makes sense to add to what I already have:
 - i. A good ratio for blending apples:
 1. 5%-20% Astringent/Bittersweet/Bittersharp varieties (what we sell as 'hard cider' varieties)
 2. 30%-60% Neutral varieties, which includes most dessert, good-for-fresh-eating apples
 3. 10%-20% Tart varieties, usually varieties that are considered good 'bakers' or 'pie' apples
 4. 10%-20% Aromatic apples, which are varieties with intense, complex flavors, but not bitter
 - ii. When do most of my apples ripen?
 1. It takes 13-20 lbs of apples to make 1 gallon of juice. Pressing cider is most efficient when you have a lot of fruit ready to press.
 2. Look at ripening times, and try to choose varieties that will ripen within 2-3 weeks of each other.
2. Do I want to use my cider varieties for anything but cider?
 - a. Hard cider varieties are usually not good for anything but juice. Most are somewhat bitter, and that bitterness does not mellow much with cooking.
 - b. Small amounts of bittersweet/bittersharp varieties can enhance sweet cider and sauces, but should be used sparingly

- c. Adding more aromatic varieties- Russets, Ashmeads, Karmijn, Queen Cox, Red Almene- can add complexity and do have some soft tannins in their skins.

3. Some good pairings:

If I have early ripening varieties like Gravenstein, Akane, Zestar (August, early September ripening)	I could add Tremlett's Bitter, Yarlington Mill or Kingston Black
If mid-September ripening fruit such as Tugaru, Honeycrisp, Jonagold, Elstar	Add Kingston Black, Yarlington Mill or Harry Masters Jersey
If late September or early October ripening varieties	Add Harry Masters Jersey, Brown Snout or Reines des Pommes
For October varieties	Add any cider variety except Kingston Black or Tremlett's Bitter

If I have an extensive orchard already and I want to add only one or two trees that will contribute the most to a cider blend,

- Reines des Pommes- strong tannins, high sugar, and less biennial than many varieties. Good for late blends
- Harry Masters or Chisel Jersey- strong tannins and high sugars, biennial so will have on and off years, for late blends
- Yarlington Mill- productive and only partially biennial. Good for early to midseason blends
- For cider varieties that can be used in cooking, not too bitter to eat- Kingston Black
- Aromatics: Golden or Roxbury Russett, Ashmeads Kernal, Karmijn de Sonneville

