Hard Cider!

Bay Area Mashers
8/14/2014

Quick Poll

- 1) Who here has ever made hard cider?

- 2) Who here is interested in making their own hard cider?

Overview

- History of cider and hard cider
- Types of cider apples
- Commercial hard ciders
- Making hard cider
  - Ingredients
  - Yeasts
  - Nutrients
  - Adjuncts
  - Post-fermentation fun

History of Cider

- Hard cider production dates to ancient times
- Romans first write about drinking hard cider in 55 B.C. during their invasion of Britain
- In 1066, the Norman conquest of Britain merged French winemaking with British hard cider production
- In 1620, apple seeds were brought to the New World and many orchards were planted. Hard cider became the predominant alcoholic beverage in what is now the United States.

Types of Cider Apples

- Over 7,500 varieties of apples are grown worldwide
  - 2,500+ varieties in the U.S.
- As a rule of thumb, cider apples don't taste good and eating apples don't make good cider
- Many hard ciders are made from a blend of cider apples to balance acidity and sweetness

Types of Cider Apples

- Sweet – high in sugar
  - Gravenstein, Golden Russet, Sweet Coppin, Northern Spy
- Sharp – high in acid, tend to be low in sugar and tannins
  - Bellflower, Bramley's Seedling, Brown's Apple
- Bittersweet – high in both tannins and sugar
  - Michelin, Ashton Bitter, Binet Rouge, Chisel Jersey
- Bittersharp – high in both tannins and acid
  - Stoke Red, Kingston Black, Yarlington Mill
- Some eating apples are also good apples for cider
  - Gala, Golden Delicious, Granny Smith, Macintosh

Commercial Ciders

- European hard cider
  - Blackthorn (UK), Magners (Ireland), Strongbow (UK), Somersby (Denmark), Etienne (France), Aspall (UK), Thistly Cross (Scotland)
- American hard cider
  - Ace (CA), Angry Orchard (MI), Crispin (MN/CA), Fox Barrel (CA), Smith & Forge (TN), Woodchuck (VT)

Making Cider

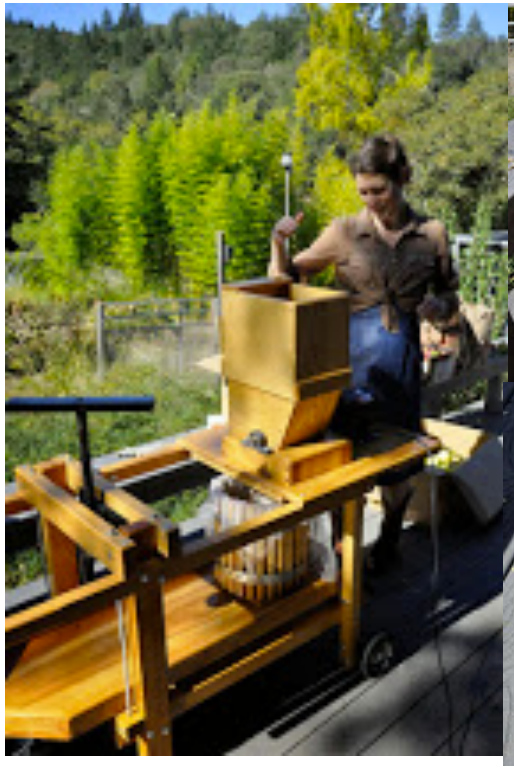
- Can be made from either raw apples or store-bought cider that has NOT been chemically treated
  - UV and/or heat treated cider is just fine
- Making hard cider from raw apples requires special equipment
- Making hard cider from store-bought cider only requires a fermenter and a paddle/spoon

Making Raw Cider from Apples

- Approximately 20 pounds of apples are required to make 5 gallons
- Requires an apple crusher and press
- Resulting raw cider will ferment on its own due to yeast on the apples and in the air unless steps are taken
  - Heat, UV, and/or chemical treatment
  - Heat treatment: heat cider to 160°C and then cool to yeast pitching temperature
  - Chemical treatment: Campden tablets (1 per gallon), let sit overnight
- The process from this point is the same for making hard cider from store-bought cider

Picking: 1 tree filled ~1 tractor buckets

Grind whole apples into press.
Press juice.
Cheese cloth helps contain debris.



~20 gallon yield

Using Store-bought Cider to Make Hard Cider

- To reiterate, do NOT use chemically treated cider for making hard cider!
  - Potassium sorbate and/or sodium benzoate inhibit yeast growth
- If using raw cider, a gentle heat treatment (160°F, 1 minute) can be used
- Take a specific gravity reading of the cider
  - Usually 1.050-1.070
- Specific gravity can be increased by using adjuncts

Process of Making Hard Cider

1) Sanitize fermenter/funnel, paddle or spoon, and outside of cider containers
2) Pour cider into fermenter
3) If wanted, add adjuncts. Mix well to dissolve
4) Aerate
   - Pure oxygen with diffusion stone for 1 minute
   - Air pump with diffusion stone for 20 minutes
5) Add yeast
   - Rehydration of dried yeast is not necessary
6) Seal fermenter with airlock
7) Ferment at recommended temperature for yeast being used

Fermentation Schedule for Making Hard Cider

- Primary Fermentation
  - 65°F-75°F, depending on the yeast strain
  - 1-3 weeks
- Secondary Fermentation
  - 70°F-75°F
  - 2 weeks+
- Bottling
  - Add priming sugar to obtain 1.5-2.5 volumes of CO_2 if desired

Yeasts for Making Hard Cider

- Use same pitching rates as you would for making beer
- Dry hard cider
  - F.G. = ~1.000
  - Dried yeast
    - Champagne yeast – very clean tasting; lets apple flavor shine
      - EC 1118
    - White or red wine yeast – adds a bit of fruitiness
      - Premier cuvee, Cotes De Blanc
  - Liquid yeast
    - WLP775 – Cider yeast
- Sweet hard cider
  - F.G. = 1.005-1.010+
  - Liquid yeast
    - WLP720 – Sweet mead yeast

Nutrients are needed!

- Apples are somewhat low in yeast nutrients
- Yeast nutrients
  - DAP (Diaminophosphate)
    - Adds nitrogen
    - ½ gram per gallon
  - Wyeast nutrient blend for ciders
    - Adds several micronutrients, most notably zinc
    - ½ tsp per 5 gallon batch
  - Servomyces
    - Similar to Wyeast blend, but more expensive
    - 1 capsule per 5 gallon batch

Adjuncts for Hard Ciders

- Anything fermentable can be added to hard ciders to increase the O.G. as well as add a depth of flavor
  - Brown sugar/raw sugar
  - Molasses
  - Honey
  - Maple syrup
  - Belgian candi sugar
  - Fruit
    - Fruit can be added to primary or secondary fermenter

Post-fermentation Fun

- There are several possible additions that can be made to the secondary fermenter to increase the complexity of the hard cider
  - Hops
    - 1-2 oz for a 5 gallon batch
  - Oak cubes/chips
  - Ginger
  - Spices
    - Cinnamon
- Make sure that any additions compliment the original flavor profile instead of clashing with it
- Back sweetening
  - If the final hard cider is too tart for your taste, stabilize the cider with potassium sorbate (1 gram per gallon) and then sweeten to your taste
- Blending hard ciders
  - Blend your hard cider with a different batch, such as a friend's, or with store-bought hard cider

Enjoy Your Hard Cider!