



MEAD!



(or, why Mark keeps bees...)

Why make mead?



- Variety, can add almost anything
- Stories, connection to place and time
- It's delicious!
- Unique product to share and trade
- Eat more honey! (1/2 lb or 2/3 cup honey per bottle)



History



- 20,000+ years ago: Wild-fermented meads discovered and harvested in Africa
- Preferred drink of ancient Greece
- Replaced by wine except in areas too cold for grapes, e.g. Scandinavia
- Modern resurgence

Types of mead



Traditional: Just honey, water, and yeast

Cyser: Apples or apple juice (cider mead)



Pyment: Grapes (wine mead)



Braggot: Malt (beer mead)



Melomel: Any other fruit



Metheglyn: Mead with herbs or spices



Bochet: Boiled, caramelized honey



Morat, rhodomel, capsicumel, oh my!

Meadmaking



- Equipment and supplies
- Resources
- Recipe formulation
- Brewing
- Fermenting
- Finishing
- Bottling
- Sample recipes



Equipment and supplies



Essential

- Carboys (2)
- Airlock
- Brewing kettle
- Racking cane or autosiphon
- Hydrometer
- Thermometers
- Star-San or other sanitizer
- Wine or mead yeast
- Yeast nutrients (Go-Ferm, Fermaid K, diammonium phosphate, potassium carbonate)
- Bottles, caps/corks, capper/corker

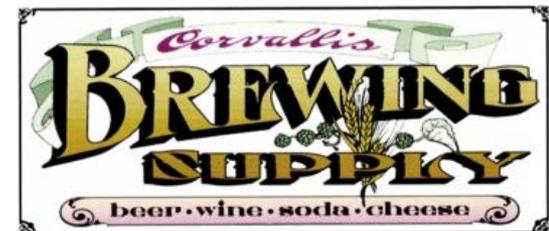
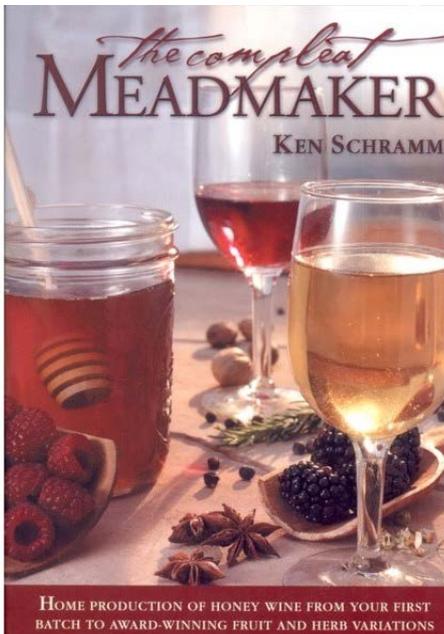
Optional

- Aeration stone
- Immersion chiller
- Stabilizers (potassium metabisulfite, potassium sorbate)
- Fining agents
- pH meter

Resources



- *The Compleat Meadmaker* by Ken Schramm, i.e. the meadmaker's Bible
- GotMead.com forums, blogs, and recipes
- Corvallis Brewing Supply



Recipe design



- Honey varieties
- Alcohol
- Sweetness
- Fruits, spices, and other flavors
- Yeast selection

Honey



- Base (clover, blackberry)?
- Varietal showcase?
- Blend?



Alcohol



- Session mead (like beer): 4-9% alcohol, 5-9 lbs honey per 5 gallons, starting specific gravity 1.035-1.065
- Standard mead (like wine): 9-14% alcohol, 9-15 lbs honey per 5 gallons, starting specific gravity 1.065-1.105
- Sack mead (like dessert wine): 14+% alcohol, 15-21 lbs honey per 5 gallons, starting specific gravity 1.105-1.150
- Mead Calculator
<http://gotmead.com/blog/the-mead-calculator/>

Sweetness



- Dry: 0.990-1.010 specific gravity, <2.5% residual sugar
- Semi-sweet: 1.010-1.025 specific gravity, 2.5%-6% residual sugar
- Sweet: 1.025+ specific gravity

Exceed yeast alcohol tolerance, or ferment dry and back-sweeten

Most commercial meads are way too sweet!

Flavors



- Be creative and experiment!
- So far for me: apples, pears, quince, marionberries, wild blackberries, peaches, nectarines, plums, blueberries, strawberries, rhubarb, mulberries, thimbleberries, elderberries, muscat grapes, ginger, cinnamon, nutmeg, cloves, allspice, juniper berries, vanilla beans, toasted oak cubes, caramelized honey, rose petals, rose hips
- Add up front, or ferment a traditional mead and then add fruits/spices



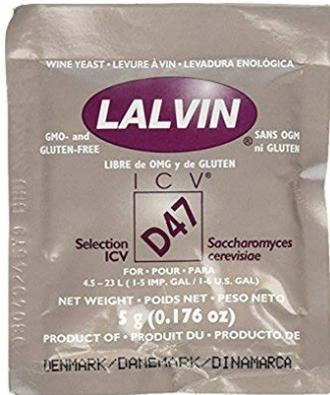
Yeast selection



- Alcohol tolerance
- Fermentation temperature
- Flavor preservation
- Flavor addition/enhancement



Semi-sweet (14%)



Most popular yeast for home meadmakers

Good for traditional mead

Produces off flavors above 70°F



Second most popular yeast?

Good choice for warmer temperatures

Adds subtle “fruit salad” flavor, good for melomels

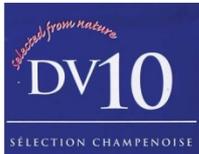
Also makes a great dry cider

Off-dry (16%)



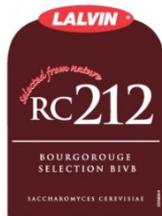
Mark's favorite mead yeast

Very clean flavors in fruit and berry meads



Great for cysers and traditional meads

For best results ferment at 50-60°F



Red wine yeast, good for dark fruit meads like plum and elderberry

High nutrient requirement



Adds unique tropical fruit flavors, great for quince mead and cysers

Hard to find; online if not at Corvallis Brewing Supply

Dry (18%)



Third most popular mead yeast?

Good for dry traditional mead

Less flavorful than other yeasts in my comparison



Champagne yeast

“Beginner’s yeast” – tolerates temperature fluctuation, nutrient stress, high sugar, outcompetes contaminating organisms

Can easily produce bone-dry, harsh “rocket fuel”

The Great Heat Debate



- Boil it like beer, to sterilize and to precipitate proteins and wax in the honey, OR
- Treat it like wine with no heating whatsoever, to preserve subtle honey flavors, OR
- Something in between?

Meadmaking, Mark's way



1. Pour 1 cup boiling water into a glass and add 12.5 g (2 ½ tsp) Go-Ferm. Add 10 g (2 packets) dry yeast when it has cooled to 100-105°F. (You can start the other steps as it is cooling.)
2. Sterilize a 6-gallon carboy, airlock, and racking cane with Star-San or other sanitizer.
3. Heat water or juice to 160°F to pasteurize.
4. Stir in honey until you reach your desired starting gravity. Be sure to account for temperature correction with warm hydrometer readings.
5. Cool mead to around 80°F using an immersion chiller, cold water bath, or a long wait.

6. Once temperature is below 100°F, add 7g potassium carbonate as yeast nutrient and 2 T pectic enzyme if you used fruit juice.
7. Whisk vigorously or bubble with air to oxygenate the mead (yeast need oxygen at first).
8. Siphon into carboy.
9. When your yeast is within 10 degrees of the mead temperature, add it to the carboy and swirl to mix.
10. Add 1 ½ tsp. each Fermaid K and diammonium phosphate as yeast nutrients
11. Add airlock and place at desired temperature. Fermentation should begin in around 12 hours.

Managing fermentation



- Keep it cool (around 60° is usually good, though different yeasts prefer different temps) and out of direct sunlight.
- Add 2 tsp each Fermaid K and diammonium phosphate 1 day after brewing (it may bubble over).
- Add 1 tsp Fermaid K, 1/2 tsp diammonium phosphate 3 days after brewing.
- When the airlock stops bubbling and most of the yeast has settled (usually around 3-4 weeks), rack the mead to a new carboy.



Finishing your mead



- Keep tasting it as it evolves. Does it need more sweetness? More acid? More body?
- Oak (medium or heavy toast, American or French oak)?
- Add spices? Vanilla beans? Berries or other fruit?
- If it is too dry, dissolve $\frac{1}{2}$ cup honey in $\frac{1}{2}$ cup boiled water and add; taste again and decide if more is needed.
- If you add honey, add $\frac{1}{4}$ tsp potassium metabisulfite and 2 tsp potassium sorbate to prevent the yeast from re-activating
- If it is not clearing, give it more time or try a clarifier like Sparkolloid – these are effective but can remove some flavor as well.

Bottling



- Beer or wine bottles?
- Bottle when mead is clear and at least two months after fermentation has ended. Be sure to add sulfite and sorbate if you backsweetened. Fermentation in bottles can lead to explosions...
- Age in carboy or in bottles; mead is best after 6-12 months, and some continue to improve for another 2-3 years.



Press apples,
start cysers and
ciders (Sept)

Freeze berries
and fruits
(July-August)

Start and
manage
fermentation
(Sept-November)



Extract honey
(late June)

Main honey flow
(late May-early
June)

Aging and
clearing
(November-
January)

Splitting and swarm
management (April-
May)

Bottling (January-
March)

Early (maple) honey
flow (March-April)

Recipes



Strong Traditional Mead

- 15 lbs of your favorite honey
- 3.75 gal water
- D47 yeast
- Ferment at 58-65°

Starting gravity: 1.108

Final gravity: Off-dry (around 1.006)

ABV: 13-14%

Quince mead

- 10 lbs honey
- 4 gallons fresh-pressed quince juice
- Vin 13 yeast
- Ferment at 58-65°

Starting gravity: 1.11

Final gravity: Semi-sweet (1.014)

ABV: 13-13%

Dry Blueberry

- ~15 lbs honey
- 3.75 gal water
- D21 yeast
- Ferment at 58-65°
- After two weeks, rack onto 12 lbs blueberries in secondary
- Rack off of blueberries in another 2-3 weeks

Starting gravity: 1.110

Final gravity: Dry (1.003)

ABV: 12.5%

Winter Spice Cyser

- 15 lbs honey
- 3.75 gal fresh-pressed apple juice
- 7 cinnamon sticks
- ½ whole nutmeg
- 4 whole cloves
- 10 allspice berries
- DV10 yeast
- Ferment at 58-65°

Crush spices and simmer gently in water for an hour, add liquid and spices to the carboy with the yeast.

Starting gravity: 1.142

Final gravity: Dessert (1.018)

ABV: 16.7%

Sip around a warm winter fire while the winds howl outside.

Questions?

