Introduction to Mead

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What is Mead?

Mead is simply a fermentation of honey diluted in water, and is often called honey wine (although wine is actually a fermented fruit beverage). There are many varieties of mead – different sweetness levels, different alcohol strengths, and different added ingredients (fruits, spices, beer, etc.) Making mead can be as simple as the 7-minute dump-and-stir or as complex as an all-grain braggot made with beer.

History of Mead

Mead is one of the oldest fermented alcoholic beverages in the world, with a history dating back at least 9000 years. It is part of many legends, stories, and poems. It was made independently by many cultures and was involved in religious, spiritual, and social experiences. It predates the need for cultivating or farming barley or wheat or grapes – and was an easy beverage for nomadic tribes to make. According to legend, mead was a special gift to the new couple – a moon (a month's worth) of honey mead to guarantee fertility (hence "honeymoon"). Mead has been thought to be an aphrodisiac and the "nectar of the gods." Beekeepers were highly regarded for their production of honey, as well as beeswax.

Honey was collected as an important food and sugar source by ancient civilizations. Early popular theory is that early tribes found mead when rain had mixed with honey and spontaneously fermented. However, other theories are more credible in which the honey started to ferment in the collection containers, which were made from animal skins, stomachs, intestines, etc. These collection containers became important cultural and religious items, blessed by the gods, which would magically transform honey into mead. Just like the rafters and open air of Belgian lambic beer makers, the collection containers (and later, the pottery and wood vessels) had that something special, which we now know is the yeast and bacteria that caused the fermentation.

Mead was a popular drink, but in the past thousand years has lost most of its popularity to other alcoholic beverages. Political events in Europe such as the Norman Conquest in 1066 (according to Ken Schramm) led to the conquerors spreading their own preferences for fermented fruit beverages (wine and cider). Also, gruit and beer were gaining in popularity. Water was not safe to drink, and it was found that beer did not cause the same sickness as the water. Of course, we now know that the beer was safe because it had been boiled. Beer also started using hops as a preservative, furthering its utility as an everyday beverage. Mead became much less popular as trade for other items increased, and other sources of sugar were easily available.

Honey

Honey comes in many varieties and types. Honey is a very viscous liquid; the high osmotic pressure deters bacterial infection. Also, honey contains gluconic acid and is fairly acidic with a pH averaging about 3.9 (although it can vary widely depending on the variety of honey and the season) – this acidity discourages infection of the honey. Honey is hygroscopic: it tends to draw water (and any microbes that come with the

water) from the surrounding air. Honey has been used for its antiseptic qualities by applying it to wounds, which also keeps out the air and dirt. Honey is a significant source of sugar and energy, and is composed of about 1/3rd glucose, 1/3rd fructose, 1/12th maltose, and 1/6th water. Lower ratios of fructose to glucose are more likely to crystallize (Tupelo honey has a higher fructose to glucose ratio, and does not crystallize). Since fructose is significantly sweeter (about 1.7 times as sweet as table sugar – sucrose), higher fructose levels provide a sweeter honey. Glucose is about .75 as sweet as sucrose. Typical honey has about the same sweetness as sucrose (which is a disaccharide composed of one molecule each of glucose and fructose). Since honey contains a lot of dissolved solids (sugars), it is much denser than water: A gallon of honey weighs about 12 pounds, whereas a gallon of water weighs 8.3 pounds.

Honey is produced from the nectar of flowers and plants which is collected by bees. The bees return this nectar to the hive in sacks on their back legs, and then partially digest and regurgitate the nectar and store it in the hive where they fan it with their wings to partially evaporate the water, creating the honey.

Flavor characteristics of honey are highly dependent on the variety of plant(s) which the bees have visited. Apiarists (beekeepers) move their hives to various locations to get their bees to collect nectar from the type of plant(s) that they want for their honey. Honey may be all (or primarily) a single variety of plant (e.g. Gallberry, Orange Blossom, Alfalfa, Buckwheat, Clover, Tupelo), or it may be a mix such as “Wildflower” honey which is not a specific variety at all. Some honeys are light in flavor (such as Orange Blossom and Wildflower) and can be used as a base for any type of mead, either flavored or not. These honeys are often lightly floral or herbal. Other varieties of honey (such as Buckwheat and Avocado) have very strong and distinctive flavors like molasses. Honey may be very light in color (Fireweed honey is almost white) to straw, gold, amber, or dark (Buckwheat honey is almost black).

It is also important to note the differentiation between the flavors of the plant from which the honey was obtained, and the flavors of the mead. A Blackberry honey produces a floral and leafy character and does *not* taste like blackberry fruit. However, you can make blackberry melomel mead with blackberry fruit and any (fairly light) variety of honey.

Honey Varieties

Apple Blossom: light golden brown; floral, hints of apple rind, not apple-y
Alfalfa: white to very light amber; beeswax, hay, mild
Avocado: amber; caramelized molasses, floral
Basswood: white; white wine, minerals, green fruit, herbal, yeasty
Blackberry Blossom: white to light amber; floral, leafy, not blackberry-y
Blueberry Blossom: light to medium amber; floral, green leaves, lemon, not blueberry-y
Brazilian Pepper: darker with greenish tint; wildflowers
Buckwheat: dark amber to black; molasses, malt, caramel, earthy, strong
Clover: clear to straw to light amber; floral, mild
Cotton Blossom: white to light amber; floral, woody, mild

Dandelion: deep yellow; strong taste and smell of the dandelion flower
Eucalyptus: dark amber; mildly sweet, herbal, slight menthol
Fireweed: white; light, herbal, tea
Gallberry: light yellowish amber; aromatic
Guajillo: light to deep amber; perfumy, herbal, lavender, mint, vanilla
Heather: reddish-orange amber; licorice, floral, perfumy, maple, toffee, caramel, heavy
Honeydew: red amber; pungent, malty
Macadamia: amber; floral, nutty
Manzanita: white to light amber; tangy
Mesquite: white to amber; earthy, raw (not burned) wood, apple, peach
Mint Blossom: white to amber; light mint
Orange Blossom: very light amber; floral (often strongly), blossomy, citrusy
Palmetto: light amber to amber; musky, citrusy, herbal, leafy, woody
Raspberry Blossom: light amber; floral, orange, lemon, tangerine
Sage Blossom: white; herbal, floral, earthy, spicy, heavy
Sourwood: light amber; sweet, spicy, anise, aromatic
Star Thistle: white to light amber with greenish tint; grassy, anise
Sunflower: yellow amber; not sweet, thick, strong flavor
Tupelo: light amber; apple, sweet, herbal, vanilla, cinnamon

Making Mead

There are three main methods for making mead, along with many variations: dump-and-stir, Pasteurization, and boiling. Each has its own advantages and disadvantages.

As with any fermentation (wine, beer, sake), cleanliness and sanitation are important – you want to only introduce the yeast microorganisms of your choice – and have them quickly dominate the fermentation so that other microorganisms have little to no influence. All equipment (fermenters, funnels, transfer tubing, measuring spoons and cups, etc) should be sanitized. Star-San is a good sanitizing solution (but it is NOT a cleaning solution – clean first with something like PBW), and you can wipe small areas (like the mouth of the fermenter, or the outside of a funnel) with isopropyl alcohol.

Since mead has a relatively high starting gravity (1.080 to 1.150 or more, although hydromel strength meads can range from 1.035 to 1.080), aeration of the must is very important. With the higher concentration of sugars, the yeast needs a good supply of oxygen to multiply quickly, and then to do the fermentation. Aerate before primary fermentation by stirring or shaking vigorously, or by using an oxygen or air injection system. Also, daily aeration (and degassing of carbon dioxide) is important for the yeast – but do not aerate after 50% or more of the fermentables have been converted (use the specific gravity to determine this).

A yeast starter is highly recommended for mead. Again because of the relatively high starting gravity, pitching a larger number of yeast cells helps to get the fermentation off to a good start. Here is a simple recipe for a yeast starter that is sufficient for 5 gallons of mead:

½ cup Orange Juice

1 cup Honey
2½ cups Water
1/8 teaspoon Di-Ammonium Phosphate

Mix, aerate, and add the yeast. A stir plate will help in promoting uniform and fast growth.

Alternatively, the yeast can be rehydrated with yeast energizer, so that as the yeast rehydrates and builds its cell walls in preparation for the reproduction (growth) phase, it will have the nutrients to make it strong and healthy, and to prevent it from generating chemicals that produce off flavors. Go-Ferm is a popular yeast energizer – add 1.25 grams of Go-Ferm per gram of yeast to 104° water (important!), then add the yeast. For a typical 5 gram dried yeast packet, add 6.25 grams (about 2.25 teaspoons) of Go-Ferm. Dissolve the Go-Ferm in the water (specific directions are given, but about ½ cup of water is fine), then add the yeast. Let the yeast rehydrate for 15 minutes, swirl, add a small amount of must to help equalize the temperature and gravity, then add to the must.

Honey typically does not provide enough nutrients for the yeast to have a healthy growth cycle. Yeast nutrient (Di-Ammonium Phosphate and/or other blends like Fermaid-K which includes B vitamins and autolyzed yeast) should be added to help the yeast during the critical period of the primary fermentation. Adding nutrient at the start of the fermentation provides the yeast with what it needs, but dividing it up in to three or four batches (added at the start of fermentation, and then stirred in once a day) will not overly stress the yeast, and will provide the nutrients when they are needed, and may result in a cleaner flavor and less fusal alcohols. The BJCP Mead Study Guide recommends using 2 teaspoons of DAP and 1 teaspoon of Fermaid-K, and adding in four equal increments: when pitching the yeast, in 24 hours, in 48 hours, and when the specific gravity has dropped showing that 30% of the sugars have been fermented. Staggered additions increase cell protein and promote stronger fermentation and also aid in protecting the yeast from alcohol toxicity. Add the yeast nutrient directly to the must (after dissolving in water) – do not add the yeast nutrient to the rehydrating yeast (the ammonia in the DAP is toxic to yeast when highly concentrated). Other methods of providing nutrient for the yeast include adding a small number of raisins (20-25 per gallon, dip in vodka first to sterilize), adding bee pollen (1 gram per gallon), or adding a small amount (2.5 ounces per gallon) of dry malt extract (DME).

When the mead has completed secondary fermentation, it may still be hazy. The haze usually will settle out (precipitate) given enough time (several months) and repeated racking. Chilling the mead may also help to precipitate haze compounds, although this may cause a temporary pectic haze from fruit pectin. If these techniques do not work, a clarification agent can be used. Bentonite has a negative charge and attaches to and precipitates proteins, which you may have if you use the dump-and-stir method. Clarifying agents like Sparkolloid have a positive charge and attach to yeast and tannins that may cause a haze. Super-Kleer is a good combination that provides negative and positive charged clarification.

Tannins can provide additional structure and complexity to the mead, but depend on the style of mead and what additives (fruit, spices, etc.) it contains. Using oak will add some tannins and additional complexity, but may not be appropriate for lighter meads. Typically, about ¼th teaspoon of grape tannin per gallon is used, added after secondary fermentation has completed.

The acid level in mead is very important. When the acid level is too low, the mead is cloying or "flabby": the sweetness of the mead is not balanced. If the acid level is too high, the mead can be harsh or overly tart. To get the right balance, take a small amount of the finished mead and add dissolved Acid Blend (a blend of malic acid from apples, tartaric acid from grapes, and citric acid from lemons and other citrus fruits) to get the mead to have a bright and balanced flavor – and then scale up to determine how much Acid Blend to add to the full batch. The acid level is typically adjusted after secondary fermentation has completed.

Mead can be dry to sweet and low to high in alcohol strength. Selection of the yeast is an important factor in determining how the fermentation progresses, and when it will end. Some popular yeast varieties for making mead (thanks to Jim Colvard for researching and providing the details; also see www.lalvinyeast.com/library.asp for articles about proper care and feeding of yeast) are:

Fermentis Red Star Montrachet (dry to sweet) (Saccharomyces Cerevisiae)

Perhaps the most popular yeast used. It is available for both red and white wine fermentations and may be called Montrachet Red and Montrachet White. It works especially well in producing Chardonnay in barrel and stainless steel. It also tolerates sulfur dioxide well, but does not work well with high sugar levels (more than 23.5 Brix). It is this ineffectiveness in high sugar levels that is most likely responsible for many stuck fermentations. Temperature range is 59-86°, low flocculation, and alcohol is pretty reliable at 13%. To prevent stuck fermentations with stronger meads (above 1.100), add the honey (diluted in water) in increments during the fermentation.

Fermentis Red Star Pasteur Champagne (dry)/WYeast 4021 (S. Bayanus)

This yeast is a low-foaming, strong fermenter with good alcohol tolerance (about 17%), and will readily ferment to dryness. This strain also has good tolerance to free sulfur dioxide. This strain is recommended for all white wines, some reds and for fruit juices. Although this yeast is somewhat flocculant, it is not commonly used for sparkling wine. This yeast may be a good choice for restarting stuck fermentations. Ferments best between 59-86° F.

Lalvin EC-1118 (dry) (Saccharomyces Bayanus)

This is the original, steady, low foamer, excellent for barrel fermentation or for working on heavy suspended pulps. It is one of the most popular wine yeasts in the world. It ferments well at low temperatures, flocculates well, and produces very compact lees. It is good for Champagne bases, secondary (bottle) fermentations, restarting stuck fermentations, and for late harvest grapes. It is also the yeast of choice for apple, crabapple, cranberry, hawthorn, and cherry wines. Alcohol toxicity is 18% and it ferments relatively fast. It tolerates temperatures from 39-95° F.

Lalvin 71B-1122 (dry to sweet) (Saccharomyces Cerevisiae - Narbonne)

The 71B strain is a rapid starter with a constant and complete fermentation between 15° and 30°C (59° and 86°F) that has the ability to metabolize high amounts (20% to 40%) of malic acid. In addition to producing rounder, smoother, more aromatic wines that tend to mature quickly, it does not extract a great deal of phenols from the must so the maturation time is further decreased. For grapes in regions naturally high in acid, the partial metabolism of malic acid helps soften the wine. The 71B also has the ability to produce significant esters and higher alcohols, making it an excellent choice for fermenting concentrates. This yeast produces the effects of a malo-lactic fermentation without the addition of the MLF bacteria.

Lalvin D47 (dry to sweet) (Saccharomyces Cerevisiae)

This is a low-foaming quick fermenter that settles well and forms compact lees at the end of fermentation, although when left on the lees, ripe spicy aromas with tropical and citrus notes develop. This strain tolerates fermentation temperatures ranging from 50° to 86° F. and enhances mouth feel due to complex carbohydrates and high polysaccharide production. This strain is recommended for making wines from white varieties such as Chardonnay and for rosé style wines. It is ideal for persimmon, peach, nectarine, paw-paw, and mango, as well as aromatic wines such as rose petal, elderflower, anise and woodruff. It is also an excellent choice for producing mead if supplemented with yeast nutrients, especially usable nitrogen. Its alcohol ceiling is 14%.

WYeast 4632 Dry Mead yeast (liquid smack-pack)

This is a low-foaming yeast and produces little or no sulfur. Good choice for any style dry Mead or Cider. Temperature range is 55-75° F, low to medium flocculation, and 18% alcohol tolerance.

WYeast 4184 Sweet Mead yeast (liquid smack-pack)

Leaving 2-3% residual sugar, this is a good choice for any style sweet Mead or Cider. Temperature range is 65-75° F, medium flocculation, and 11% alcohol tolerance.

Beer yeasts (such as Wyeast 1056 or Safale S-05)

WYeast 1056 (Safeale S-05) produces very clean, crisp flavor characteristics with low fruitiness and mild ester production. Mild citrus notes develop with cooler 60-66°F (15-19ºC) Temperature Range: 60-72F, 15-22C, Alcohol Tolerance: 11% ABV. Good choice for lower gravity meads. Will need staggered yeast nutrient additions to reach ABV limit in mead. When selecting a beer yeast, typically choose one that is clean and does not add esters and phenolics of its own (German wheat yeast will add banana and clove, English yeasts will add floral and earthy characteristics) unless you want those additional flavors.

Basic steps to making mead:

- Prepare the must by mixing the honey, water, any fruit juices, and yeast nutrients
- Aerate the must
- Add the yeast (starter or rehydrated highly recommended)
- Ferment the mead at 65-70ºF, adding nutrients each day for the first few days, and also aerating

- If you are using fruit in the primary fermentation, add pectic enzyme as needed to break down the fruit and lessen pectic haze
- After primary fermentation is complete, if you are making a metheglin with spices, add them, as well as any fruit or other additives
- Continue secondary fermentation until the mead drops clear, or use a clarifying agent
- Adjust the acid level either by measuring or by taste to achieve the balance that you want for your mead
- Add grape tannin as needed to give the mead additional structure and depth, or use oak
- If you plan to sweeten the mead by adding sugars or additional honey (diluted one-to-one in water), first stabilize the mead with Potassium Sorbate, then sweeten as needed
- If you want carbonation, keg and force carbonate the mead. The carbonation will add carbonic acid and help balance sweetness, while providing a slight tingly mouthfeel. Carbonated meads may need less acid balancing.

Dump-and-stir (or dump-and-shake) is the easiest way to make mead. If you have all the ingredients together, this method will take you about 10 minutes. No heating is involved, so the only equipment needed is the fermenter. One big advantage to this method is that none of the aroma of the honey is lost due to heating or boiling, so you get the full flavor of the honey in your end product. The main disadvantage to this method is that you don't sterilize the must. If the honey is clean and free from any foreign matter, then this technique may be a good option. Since the honey is acidic and concentrated enough that it discourages infection, this method works well as long as the yeast that you add gets going quickly after you dilute the honey – so making a yeast starter is a good idea. Since the proteins are not coagulated by heat when using this method, they may produce a haze which needs to be clarified after fermentation – either by a long secondary fermentation, or by using a clarifying agent.

If you are overly concerned about contamination using this method, add a Campden tablet (Potassium Metabisulfite) for each 5 gallon batch, and wait until the next day to pitch the yeast. This is called "sulfiting".

To make mead with this technique, dump the honey, water, and other ingredients into the fermenter and then stir vigorously to thoroughly aerate the must. Another way is to empty half of each bottle of honey, add water, and shake vigorously. For fruit mead (melomel) using fruit juice, add oxygen to the must by shaking the juice. The honey containers may need more than one rinse of shaking, which is good, adding more oxygen. Follow the Basic Steps, above.

Pasteurization requires a little more preparation of the honey and water. Pasteurization is a process in which the must is heated to a temperature that reduces the number of microbes that would compete with the yeast or would cause off flavors. The honey-water is brought to a uniform temperature of 160ºF for 15-20 seconds. A temperature of 145ºF requires about 30 minutes. Pasteurization temperature can be

achieved by heating the honey-water mix (which may tend to evaporate some honey aroma) or by adding room temperature honey to boiling water to achieve the right temperature. Adding ½ gallon of 80ºF honey to ¾ gallon of 212ºF boiling water will settle at about 159ºF. After mixing thoroughly to a uniform temperature, the Pasteurization timing can be started. The advantages of Pasteurization over dump-and-stir are that the must has a greatly reduced (99.999%) amount of organisms that may cause spoilage, and also that some of the proteins may be coagulated, resulting in less haze after fermentation has completed. However, since the must is heated, some portion of the delicate aromatic qualities of the honey may be lost. Alternatively, you can slowly heat the honey/water mixture to 140 ºF (using a lower temperature to reduce loss of aromatics) for 20-30 minutes. When heating the honey/water mixture, you can skim off the scum that floats – usually this is beeswax and additional proteins (and possibly bee parts) that can cause haze, and can cause off-flavors in your mead.

Boiling is typically not recommended for mead production. The advantages of boiling are full sterilization, and complete coagulation of haze-causing proteins. However, a significant amount of the honey's aromatic qualities will be lost. Sterilization of the must is less important as long as the honey is clean or the must is sulfited with Campden tablets. The protein haze will typically settle out with time, or a clarifying agent may be used.

Mead varieties and styles

Mead can be produced in different sweetness levels, different alcoholic strengths, different carbonation levels, and with different added flavorings.

The sweetness level of mead is affected by several factors. The variety of honey influences the ratio of fructose to glucose, with more fructose providing sweeter flavor. The yeast selection determines how much the mead will attenuate – that is, how much of the sugar in the must will be converted to alcohol (and CO_2) before the yeast gives up. Also, the mead maker may choose to increase the sweetness after fermentation has completed by stabilizing the mead and then adding additional sugars or honey. Sweetness is measured as "dry" (Final Gravity 0.990-1.010), "semi-sweet" (or "medium": FG 1.010-1.025), or "sweet" (FG 1.025-1.050) by BJCP when judging. Note that fruitiness in mead is not the same as sweetness: Mead can be fruity and still be dry.

Alcoholic strength is dependent on two factors: how much sugar was in the must (the original starting gravity), and the alcohol tolerance of the yeast. The higher the specific gravity (indicating more sugar, which can come from the honey, or from addition of fruits and juices), the more alcohol can be potentially produced. However, yeasts have alcohol tolerance levels at which the yeast cells become inactive or die. Some yeast will stop converting sugars to alcohol at 12%, while others may be able to continue producing alcohol at 18% or more. Alcoholic strength is measured as "hydromel" (low: 3.5-7.5%, Original Gravity up to 1.080), "standard" (7.5-14%, OG 1.080-1.120), or "sack" (strong: 14-18%, OG 1.120-1.180). Alcoholic strength can also be affected by incomplete fermentation (not enough oxygen, not enough nutrients, etc.) – but if alcohol

production terminates early, there is a process or technique issue that needs to be addressed.

Carbonation level of mead can be “still”, “petillant” (lightly sparkling) or “sparkling”. Carbonation is typically a choice of the mead maker, and can be done by force carbonation, or by adding additional fermentables to fermented mead and bottle conditioning. Force carbonation in a keg produces the exact carbonation required, and does not rely on asking the yeast to do additional work, particularly if the yeast has already reached its alcohol tolerance limit.

Meads can be made with honey only, or they can be flavored with various spices, vegetables, fruits, or other substances like wood or beer. Many mead styles have their own names, depending on the flavors added.

- Acerglyn is a mead made with maple syrup
- Braggot is a mead made with beer – this can either be a blending of mead and beer, or a mead that starts as a beer but has a large percentage (typically 50% or more) of its fermentables provided by honey
- Cyser is mead made with apples or apple juice – the differentiation between cider and cyser typically requires that 50% or more of the fermentables are provided by the honey
- Hippocras is a mead made with grapes and spices
- Melomel is mead made with fruit. Freeze the fruit – except apples or citrus – to break down the cell walls and provide more juice, and also to help with contamination. Also, you can dip the frozen fruit in cheap vodka before adding to the mead to help sterilize the outside of the fruit. Note that adding fruit will add sugars, and may restart fermentation.
- Metheglin (pronounced meh-THEG-lin) is mead made with spices
- Pyment is a melomel mead made with grapes as the fruit

Judging meads

- Preparing – read the guidelines, taste different commercial and homebrew meads, taste different honeys, be familiar with different fruits and spices
- For a flight, organize lightest to heaviest, unflavored to strongly flavored, driest to sweetest
- Pour carefully then check aroma immediately and take notes. Note that in wine judging, the initial aroma is often ignored since this is a period for the storage and high alcohol aromatics to “burn off”, so be sure to recheck the aroma later to get the true aromatic character of the mead after the burn off.
- Look at color and clarity, note legs (bigger and slower indicates higher alcohols and sugar content) and meniscus (for brightness and color variation)
- Note flavors, mouthfeel, initial taste, middle taste, and finish
- Note any off sensations like phenolic or metallic flavors, or higher fusal alcohols (strong alcohol meads should be warming but not solventy or “hot”)
- Note signs of aging (which may be desirable like sherry or undesirable like wet cardboard)

- Note signs of being too young – raw honey or B-vitamins
- Look for acidity-sweetness balance (flabby needs more acidity, sour/acidic needs less, may be slightly tart if the tartness is pleasant) – Note that the balance for a dry mead is different than the balance for a sweet mead, which may taste very sweet but should have enough acidity to balance the extra sweetness
- Look for tannic structure and added complexity as appropriate – too much can cause astringency
- Look for honey character, and specific characteristics of honey variety (if the mazer specified the variety)
- Look for expression of additional fruits or spices (both what you notice in the aromatics and flavor, as well as looking for the fruits or spices that the mazer submitted as additions to the mead)
- Compare strength, carbonation, and sweetness with specifications as entered
- Provide feedback to the entrant about how the mead matched with what the entrant claimed as entered, and also about any good or bad features of the mead – and suggestions for improvement, as well as your overall enjoyment level, and also note for special ingredients whether you thought that they "worked" or not – an anchovy mead might be made well, but might not be a good pairing with the honey

Recipes

As a general guideline, a gallon of honey (about 12 pounds) will produce a specific gravity of about 1.080 (20º Plato) in a 5 gallon (total volume, including the volume of the honey) batch. The following recipes are batches that I have made:

Eden's Nectar mead

Batch size: 2.375 gallons
BJCP style: 24A Dry Mead
Alcohol: ~12%
Ingredients:

- 7.0lb Eden's Nectar Winter Honey (Avocado/Macadamia Nut)
- 1/2t Yeast Nutrient (Ammonium Phosphate)
- WYeast 4632 Dry Mead yeast
- 1.75 gallons bottled Walmart Drinking water

Process: Dump-and-shake, OG 1.105, FG 1.002, did not rack before bottling at 50 days
Link:http://www.BuildABeer.org/beerquickcalc.php?Action=LoadBeer&RecipeMenu=67

Gallberry mead (3rd place in 2008 First Coast Cup)

Batch size: 2.5 gallons
BJCP style: 24A Dry Mead
Alcohol: ~8%
Ingredients:

- 6.5lb (1/2 gal) Jurss (Osteen FL) Honey (Gallberry)
- 1/2t Yeast Nutrient (Ammonium Phosphate)
- Lalvin EC-1118 dry yeast (made a starter)

- 2 gallons bottled Walmart Drinking water

Where: Mead Day 2007
Process: Dump-and-shake, OG 1.072, FG 1.004
Link:http://www.BuildABeer.org/beerquickcalc.php?Action=LoadBeer&RecipeMenu=101

Apple Bees cyser

Batch size: 2 gallons
BJCP style: 25A Cyser (Apple Melomel)
Alcohol: ~18%
Ingredients:

- 1.875 gallons Motts 100% Apple Juice (with added vitamin C)
- 6.5lb (1/2 gallon) L. Jurss Citrus Honey (Osteen, FL)
- 1t acid blend
- 1/2t grape tannin
- 1t ammonium phosphate yeast nutrient
- 1t pectic enzyme
- Fermentis Red Star Pasteur Champagne dry yeast (1 packet, made a starter)

Where: Mead Day 2009
Process: Dump-and-shake, OG 1.153, FG 1.004, fermented at 62ºF, racked at 20 days, bottled at 42 days
Link:http://www.BuildABeer.org/beerquickcalc.php?Action=LoadBeer&RecipeMenu=341

Caroline's PomeBees (3rd place in 2010 Meadllennium)

Batch size: 2.5 gallons
BJCP style: 25C Other Fruit Melomel
Alcohol: ~12%
Ingredients:

- 1.25 gallons Walmart Drinking Water
- .75 gallons Pom pure pomegranate juice
- 3.25lb (1/4 gallon) Webbs Orange Honey (Orlando, FL)
- 3.25lb (1/4 gallon) Webbs Palm Honey (Orlando, FL)
- 1t acid blend
- 1t ammonium phosphate yeast nutrient
- 1t pectic enzyme
- Fermentis Red Star Pasteur Champagne dry yeast (1 packet, made a starter)

Where: Mead Day 2009
Process: Dump-and-shake, OG 1.104, FG 1.004, racked at 20 days, bottled at 36 days
Link:http://www.BuildABeer.org/beerquickcalc.php?Action=LoadBeer&RecipeMenu=366

Biscuit Barley Braggot (3rd place in 2008 Best Florida Beer Competition)

Batch size: 2.75 gallons
BJCP style: 26B Braggot
Alcohol: ~11%
Ingredients:

- 1lb Briess Caramel 40°

- 0.65lb Gambrinus Honey Malt
- 0.54lb Briess Caramel 90°
- 0.84lb Crisp Maris Otter
- 0.5lb Briess Victory Malt
- 0.77lb Briess CaraPils Malt
- 0.5lb Briess Caramel 10°
- 5lb Edens Nectar Winter Honey (Avocado/Macadamia Nut)
- 5 AAU UK Fuggles whole hops (alpha 4.7%) = (1.0oz) (60 minutes)
- 1.7 AAU Saaz whole hops (alpha 4.0%) = (0.5oz) (30 minutes)
- 1.7 AAU Saaz whole hops (alpha 4.0%) = (0.5oz) (10 minutes)
- 1/2 t Irish Moss
- 1/2 t Ammonium Phosphate yeast nutrient
- 2 smack-packs of WYeast 1388 Belgian Strong Ale
- 5 gallons bottled Walmart Drinking water

Where: Mead Day 2006
Process:

- All-grain mash for 1 hour at 152°F
- OG 1.103, FG 1.018
- Added 3lb honey just after boil after cooling to 165°F to Pasteurize
- Fermented at 72°F
- Day 3 – racked and added 2lb honey (after Pasteurizing it)
- Day 23 – primed with 3/8 cup dextrose and bottled

Link:http://www.BuildABeer.org/beerquickcalc.php?Action=LoadBeer&RecipeMenu=46

Florida honey sources

AquillasGold.com
BeeNaturalHoney.com
EdensNectar.com
TropicBeeHoney.com
WinterParkHoney.com
David Webb (Orlando, FL) WebbsHoney@MSN.com (Dave is homebrewer with CFHB)
Frederickson Apiaries (Geneva, FL) www.HappyBeeHoneyFarm.com

Resources

Bjcp.org/mead.php – Mead Exam Study Guide, and other articles
The Compleat Meadmaker – Ken Schramm (also Zymurgy Nov/Dec 2005 for updates)
www.Wikipedia.com keywords: mead, honey, fructose, tupelo
www.HoneyLocator.com
www.Honey.com
www.GotMead.com
www.MeadFest.com
www.answers.com/topic/pasteurization
www.lalvinyeast.com/library.asp - information about keeping the yeast happy
Zymurgy, July/August 2010, “Yeast Nutrients” by Amahl Turczyn Scheppach