



# Making Sense of Making Mead

B Y B Y R O N B U R C H

**O**kay, you're a home brewer, and have been for awhile. You're careful, and you pay attention, so you've gotten pretty good at it. However, as the years go by, each brew session is starting to seem like more of the same, and you're getting just a bit itchy, beginning to look around for something a bit different.

Two choices immediately suggest themselves. You could quit brewing, and take up model railroading instead (but then you wouldn't have anything to drink). On the other hand, you might look into meadmaking, to try and see what all the recent fuss is about.

Confronted by such a choice, and being the sensible person you are, you'd obviously select door number two. What awaits you there is a world both familiar and strange. Like looking at brewing in a funhouse mirror, the process seems familiar, but there are all those oddities and distortions. Suddenly, you've entered the "twilight zone" of fermented beverages. This is mead country!



**Meadmaking has an almost infinite number of potential variations . . . I can briefly describe a few good approaches for beginners. That may help you decide which to try.**

The reality may be less dramatic than that, but you probably get the idea. Mead, the likely ancestor of all fermented drinks, is probably best described as “honey wine,” and the meadmaking process has rather more in common with winemaking than with brewing, though elements of both are present. It’s one of life’s ironies that the mead renaissance has been led by home brewers, rather than home winemakers. As someone who makes beer, wine, and mead, I’d have expected the opposite.

Meadmaking has an almost infinite number of potential variations, and treating the subject exhaustively may well be impossible, but I can briefly describe a few good approaches for beginners. That may help you decide which to try.

Other meadmakers might disagree, but I’d recommend breaking in with one of four traditional styles. In no particular order, they are: an Unflavored (or traditional) Mead, Melomel, Metheglin, or Braggot.

Pick one of these and make up your mind to just try it. Don’t try to fine tune your first batch too much. Don’t even worry about how well your early efforts fit with somebody’s classification system. Compared to beer styles, most mead styles are somewhat open ended, and matching up with them is the last thing a beginner should be worrying about.

Let’s start with an unflavored mead style, using an old favorite recipe of mine. Aspects of the recipe or instructions likely to be unclear to brewers will be discussed more fully later on.

### **“St. Elizabeth’s Day” Mead**

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**(5 gallons)**

- 18 lb. Honey**
- 5 gallons Water**
- 2 oz. Beverage People Yeast Nutrient for Mead**
- 5 tsp. stock Sodium Bisulfite solution (after fermentation)**
- 5 Tbl. Tartaric Acid**
- 30 ml. Liquid Oak Essence (optional)**
- 10 grams Prise de Mousse Yeast**

- **Original Brix: 25**
- **Total Acid: 6-6.5%**

### **Procedures**

1. Heat the water until warm, turn off the stove and stir in the honey until dissolved.
2. Heat this mixture to boiling, and boil for 5 minutes, skimming the surface with a large spoon. Add the nutrient and acid.
3. Cool to room temperature.
4. Pour the mixture into narrow-neck fermentors, filling them no more than 75% full.
5. When the temperature of the must is down near room temperature, test the sugar and acid levels. If these are below the levels indicated above, make the necessary corrections. Slightly higher is okay.
6. Add yeast to the surface. In 10 or 12 hours, stir it in.
7. Once fermentation begins, allow it to continue for two or three weeks until visible signs of fermentation have ceased.

## Mead on the Internet

The ancient craft of mead-making has met the global information age. In the past, mead-makers have been stymied by mead's obscurity: They had the passion, but they often had nobody to talk to. Now, mead-makers use electronic mail and Worldwide Web pages to find one another, exchange tips and recipes, solve problems, and explore the rich history and lore of their craft. Here are a few Internet resources for mead-makers.

### 1. The Mead-Lover's Digest

The Mead-Lover's Digest (MLD) is a mailing list distributed in "digest" format. Readers submit articles using e-mail. The articles are collected and sent out in batches via e-mail. A digest comes out whenever there is enough material, usually every few days with about ten articles in a digest. Around 800 issues have appeared since John Dilley started the digest in 1992. Dick Dunn maintains the digest.

To subscribe to the MLD, send e-mail with the word "subscribe" either in the Subject line or the body of the message, along with your name, to: [mead-request@talisman.com](mailto:mead-request@talisman.com)

All back issues of the MLD are available by anonymous file transfer (FTP) from: <ftp://stanford.edu/pub/clubs/homebrew/mead> or at the [talisman.com](http://talisman.com) web page (see next section).

### 2. Web Pages

The Web is dynamic! Web pages come, go, and move around at a startling pace. So, rather than try to provide an extensive list of mead-related web pages, we have selected a few that are both good and likely to remain stable. Most of these pages have links to other currently active pages about mead, so pick a page and start exploring from there. Just give your web browser <http://> followed by the addresses shown below.

- [www.best.com/~davep/mme](http://www.best.com/~davep/mme)

The "Mead Made Easy" book in electronic form: a good, no-fear, simple introduction to mead-making. The complete text of the book is on-line here, or you can order a hard copy. Written by Dave Polaschek.

- [brewery.org/brewery/library/beeslees.html](http://brewery.org/brewery/library/beeslees.html)

The "Bee's Lees": A large collection of mead recipes, in book format, with several appendices of useful formulas and tables. Written by Joyce Miller.

- [brewery.org/brewery/MHall.html](http://brewery.org/brewery/MHall.html)

The "Mead Hall": a collection of links to mead-related pages. Maintained by the good folks who run the electronic Homebrew Digest.

- [www.eklektix.com/gfc/mead/mead.html](http://www.eklektix.com/gfc/mead/mead.html)

The Mead Maker's Page: mead basics and terminology; useful links. A long-time mead site maintained by Forrest Cook.

- [www.gotmead.com](http://www.gotmead.com)

Recipes, mead-making basics, list of commercial meaderies and many good links. An ambitious, evolving site maintained by Vicki Rowe.

- [www.talisman.com/mead](http://www.talisman.com/mead)

Mead-Lover's Digest and related material: archives of back issues, the FAQ (frequently-asked questions) list, a list of commercial meaderies, etc. Maintained by Dick Dunn.

*This listing was compiled for Zymurgy readers by Dick Dunn.*

8. When bubbles can no longer be seen rising through the mead, rack (siphon) away from the settlings into an open container. Fine with Sparkolloid, add a teaspoon per gallon of stock sulfite solution (and oak essence if desired), and siphon into a narrow-neck storage container, top up, and let it set for four weeks.
9. Rack away from the Sparkolloid settlings, top up again, and let it stand for three to six months.
10. Carefully rack into an open container, add 1 1/2 teaspoons stock sulfite solution per gallon. If you wish to sweeten the mead, do so now with sugar syrup, adding also 1/2 teaspoon Wine Stabilizer per gallon.

11. Siphon the mead into bottles, cap them, and set them aside to age for three to six months.

### Discussion

Many of these procedures will, of course, be familiar to home brewers, who should be able to maneuver their way through both boiling and bottling with ease. Other steps are pretty self explanatory. A few, however, may require at least some commentary, and to these we now turn.

### "Must"

We should start by noting that the word "must," for winemakers and meadmakers is roughly equivalent to the brewers' word, "wort," signifying the beverage in its unfermented state.

### Brix

You may have also noticed that the recipe provided speaks of "Original Brix," rather than "Original Gravity." Brix (or Balling) is a method of reading sugar levels favored by the wine industry. You may find the Brix scale preferred in some meadmaking literature, and it is specified here to familiarize you with it.

In any case, it's easy to convert Brix to S.G. All you need remember is that one percent Brix is almost exactly equal to four Specific Gravity points. This quick rule of thumb can be used in all but the most excruciatingly fussy situations.

Quite a bit of variation is possible as far as mead sugar levels are concerned. Unless you've somehow ended up with a much lower level than you were shooting for, you may not need to bother making corrections. If you find yourself needing to make a minor correction, it can be made with either honey or corn sugar.

### Testing Acid

For a couple of reasons, the acid content of a mead is as important as the sugar content.

First, the tartness provided by acid is important to the flavor. If the acid level is too high, the taste will be excessively harsh. If too low, it will be bland or watery. Second, the acidity and alcohol combine to give wines and meads a degree of stability against spoilage.

## Prickly Pear/Mesquite Melomel - sparkling

### Recipe for 5 gallons

- 7.5 lb prickly pear puree
- 12 lb Mesquite Honey
- 1 T Yeast nutrient
- 4 tsp acid blend  
Dry Mead Yeast - Wyeast #3632
- 1 cup corn sugar for bottling

Prickly pear cacti ubiquitously dot the landscape of the Southwest. Mesquite trees grow alongside prickly pear in Texas. Prickly pear introduces a beautiful magenta color and flavors of strawberry, watermelon, and honeydew melon. Mesquite honey has a delicate spiciness to balance the fruit flavors. Based on an award winning recipe of Brian Myers of Australia.

—Lynne O'Connor

A number of small, relatively inexpensive, acid titration kits are on the market for testing the total acidity in wines, meads, and musts. They all work on the same basic principle.

Starting with an acid sample of unknown strength (the mead), to which a few drops of color indicator have been added, an alkaline solution of known strength (most often sodium hydroxide) is slowly mixed in until a color change indicates neutrality has been reached. The kit's instructions will tell you how to then calculate your acid level, based on how much alkaline solution was needed to neutralize the acid in your sample. Discard all test samples.

Most available acid titration kits are designed for winemakers, and measure the percentage of acids in a given sample as "tartaric." This means that, even though you have a number of different acids in your sample, and they may of varying strengths, the percentage is expressed using the known strength of Tartaric Acid as the standard. That is the convention in the USA. In the UK, Sulfuric, a much stronger acid, is the standard.

Because the acid levels in wines and meads are generally less than one percent as tartaric, you may see them expressed in two ways, either as percentages or as parts per thousand (ppt). Normally, a mead should

have at least .5% total acidity (five parts per thousand) at the absolute minimum.

If you wish to raise the acid level in your mead, adding 2/3 oz. of Tartaric Acid (about four tsp.) to five gallons of mead increases the level by .1%.

Acid levels of .85% and above would probably be approached only under the rarest of conditions, and by the sweetest of meads. Sugar and acid offset each other, so a high level of one can, within reason, be used to complement the other.

Note that this is not a pH test. That would involve a completely different scale, and doesn't test exactly the same thing a total acid test does. However, a total acid reading of .6% or higher is very likely to mean a low enough pH to make your mead relatively stable.

### Yeast Nutrient for Meads

I tasted my first mead back in 1973, but I didn't consider taking up the hobby until many years later. One reason was that I was told by the maker that his mead had fermented for four years, and that was after two years spent getting it started. I've always been thirstier than that.

That's an extreme situation, one that should never happen. These days, my meads generally go through 3-4 weeks of

## Blue Agave/Guajillo Melomel - still

### Recipe for 5 gallons

- 6 lb Blue agave nectar
- 8 lb Guajillo honey
- 1 T yeast nutrient
- 1 T acid blend  
Dry Mead Yeast - Wyeast #3632

Blue Agave nectar is a fructose-rich concentrate made from the Mexican plant that gives birth to tequila. The nectar tastes of prunes, raisins and currants. Guajillo honey comes from the white flower of a native Texas bush which grows in a small area of the Edwards Plateau. This rare honey has a smokey flavor. Both the flavor and color of this melomel are reminiscent of reposado or anejo tequila.

—Lynne O'Connor

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active fermentation, depending on conditions, and most of them are ready to bottle just a few months later.

One difference now is the general availability of better meadmaking information, but another is the existence of a first class Mead Nutrient.

In his book, *Making Mead*, Cornell University professor, Roger A. Morse, tells of his extensive research into mead fermentation, and gives the recipe for a complete yeast nutrient especially designed for meads.\* A decade ago, my company, The Beverage People, began packaging mead nutrient, following Morse's instructions as closely as possible, but omitting the Acid, so mead-makers could add that separately. Results were astounding!

My point is not to sell nutrient. I hardly expect to get rich doing that. However, as of now, I don't know of anyone else packing up a similar product. Morse's recipe is available, so others may be doing so, but if you find another "Yeast Nutrient for Meads," it might be wise to ask some questions about the formulation. (continued on page 60)



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## Making Sense of Making Mead

(from page 41)

My reason for stressing this point is that, with our nutrient, two full ounces is the proper amount to use for a five gallon fermentation. Using that amount of a diammonium phosphate (DAP) based nutrient would have a very negative effect on the flavor. DAP is a major ingredient in many common yeast nutrients designed for wine, and could find its way into self-described Mead Nutrients as well.

## Fining

I routinely fine all my meads with a clarifying agent called Sparkolloid. I've found it to work extremely well with meads. The exact formula is proprietary, but I suspect it may be diatomaceous earth and isinglass.

Fining agents combine with charged particles in suspension, and help drop them to the bottom so subsequent rackings can leave them behind. With Sparkolloid, you can often see the clarification beginning in a matter of hours.

When your mead finishes fermenting, and is ready to fine, siphon it into an open

container. Simmer one- to one-and-a-half grams of Sparkolloid powder in a cup or so of water for 15 minutes, stirring occasionally. Stir this "slurry," still hot, into your mead. Siphon the mead back into your storage container, top up, and let it stand for three or four weeks. Siphon carefully away from the settlings, and top up again.

Fining should take place early enough during aging that there will be at least two rackings between fining and bottling. These rackings will help insure that none of the fuzzy Sparkolloid sediment is passed on into the bottled mead.

## Sulfite

Sulfur Dioxide (SO<sub>2</sub>) is a gas released by Sodium Bisulfite (or Potassium Metabisulfite). It has two primary uses in wine or meadmaking. It is used to retard spoilage, and also functions as an antioxidant

A stock solution is made by dissolving an ounce of sulfite powder in a quart of warm water. Stopped up, this solution will remain at relatively full strength for about six months, and can be used as needed.

At each racking, stir in one teaspoon of stock solution per gallon of mead. Add one and a half teaspoons per gallon at bottling.

## Stabilizer

If you wish to bottle a still mead with residual sweetness, you will need to kill any remaining yeast cells to prevent re-fermentation in the bottle. Add half a teaspoon of Wine Stabilizer (potassium sorbate) per gallon. This should be added along with the bottling dose of Sodium Bisulfite solution.

If you wish to "sparkle" a mead, which has

a significant amount of residual sweetness remaining, you can usually do so simply by omitting the Stabilizer at bottling. Carbonation will usually take place over a period of months.

If your mead has fermented to dryness, it will be necessary to prime it, just as is normally done with beer, in order to get carbonation.

## Oak

An unflavored mead may benefit from a period of storage in an oak barrel. However, the need to take care of an oak barrel adds much to the complexity of the mead-making process. Also, in a five or ten gallon barrel, a lot of oak flavor is picked up in a very short period of time, a matter of no more than a few weeks.

You could get much the same effect by adding a modest dose of liquid oak essence to taste at bottling time. This will smooth the mead out, increasing its depth of flavor. Purists may object that adding oak essence violates the very nature of an "unflavored mead." Perhaps so, but if you use it to improve your mead, I promise not to tell.

## Variations

Prospective meadmakers should also consider three easily adapted variations on the basic meadmaking theme: Metheglins, Melomels, and Braggots.

Note that none of these variations necessarily benefits from the presence of oak flavor, so discretion should be used. If you're not sure, try adding a drop of Oak Essence to a glass of mead to explore the possibilities without risking the entire batch.

## Metheglin

Metheglins are meads flavored with herbs or spices, and the potential combinations are almost unlimited. Two common errors, however, should be mentioned.

Probably the most common mistake new meadmakers make is to overspice their meads. The other is not to get full value from what they add.

Fortunately, there is a way of covering both bases at once. Simply make a spice tea by boiling the spices for 15 minutes or so in just enough water to keep the pan from going dry. The tea can then be added to taste.

Make a separate tea for each spice, blending as desired. This tea can be added

## Cotton Trail Mead

### Recipe for 5 gallons

- 13 lb Cotton Honey
- 1 T yeast nutrient
- 4 tsp acid blend
- Sweet Mead Yeast - Wyeast #3184
- 1 cup corn sugar for bottling

Cotton honey is light in color and the smoothest flavored of all American honeys.

—Lynne O'Connor

## Riesling Pyment

### Recipe for 5 gallons

- 10 lb orange blossom honey
- 4 lbs Alexanders Johannesburg Riesling wine concentrate
- 1 T yeast nutrient
- 4 tsp acid blend  
sweet mead yeast - Wyeast #3184
- 1 cup corn sugar

Orange blossom honey is a very aromatic honey. It literally smells of an orange grove in full blossom. The aroma carries through to the mead if the honey is not boiled.

—Lynne O'Connor

to the mead anytime between the end of fermentation and fining.

### Braggot

A braggot is simply a halfway house between beer and mead. In their heyday, they would most commonly have been spiced. The simplest way to try your hand at a braggot is to use a metheglin recipe, substituting Malt Extract for about 50% of the honey on a pound for pound basis.

### Melomel

Meads flavored with fruit or berries are known as melomels. A wide mouth fermentor is needed for most of these meads (to accommodate the fruit pulp).

For most fruits, start by removing any pits present, loosely tie fruit or berries in a nylon bag, smash them up, placing the bag of pulp in the fermentor. Half an ounce of pectic enzyme should be added to any melomel prior to fermentation. During fermentation, push the pulp down into the fermenting mead twice a day for 5-6 days. Squeeze and discard the pulp. After fermentation, proceed as for any other mead.

Fruits and berries will contribute varying amounts of acidity, depending on the degree of ripeness, so this is where acid titration becomes critical. Test before adding the acid called for in your recipe, adding acid as indicated by your test results.

If you can't find a recipe for a particular kind of melomel, the next step is to look in winemaking books containing fruit and berry wine recipes. Many of these recipes can be

adapted to mead just by substituting a pound of honey for every pound of corn sugar, or 1.2 pounds per pound of cane sugar.

If you can't find a recipe using your particular kind of fruit, you can usually get satisfactory results using 12-15 lb. of fruit and 12-15 lb. of honey in five gallons. Use the lightest, most delicate honey available.

Well, there you are. Hopefully this inspires you to give meadmaking a try. Whether you wish to help rediscover one of the almost lost arts, or whether you're just looking for something different to do during the warm weather months, meadmaking

seems likely to bring you pleasure.

Meadmaking is actually easier than brewing, and it's a hobby you can certainly master, so why not give it a go. Remember, you can't drink model railroads.

\* Morse, Roger A. *Making Mead: (Honey Wine)*. Ithaca, New York: Wicwas Press, pp. 61-62.

Byron Burch is a veteran beer, wine and mead maker and two-time winner of the "Mead Maker of the Year" title awarded annually by the American Homebrewers Association's National Homebrew Competition. 

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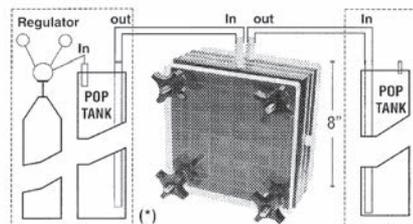
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