

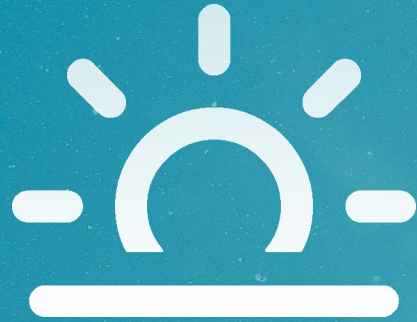
Mead

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Natrona County Beekeeping Association

<https://ncbees.org>



So, what is mead?

Mead is honey wine

Made using similar methods to wines, but instead of fruit juice, honey is used as the source of glucose

Can be light and fresh to heavy and stodgy, still or sparkling, Dry or Sweet – and everything in between



Fermentation

Anaerobic



A metabolic process, yeasts and bacteria consume glucose as food and excrete Carbon Dioxide and Ethanol

Alcohol



Yes, as a wine and a fermentation product, mead contains alcohol. It's up to you to determine how much.

The 3 Ingredients



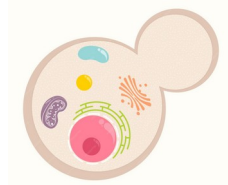
Water

Clean, still
Warmed/heated for mixing
Source and details will affect
final product flavor



Honey

Will strongly affect flavors
Can even use 'bakers honey'
Higher glucose yields higher
alcohol content



Yeast

Anything from natural, wild, to
specific brewers to bread yeasts –
they'll all work
Yeast choice will affect alcohol
levels and sweetness

Simple Process



Mix it together

Warm water, add honey –
pitch yeast



Done

Done when you say it is
No activity? Time? Color?
Your choice



Let it sit

Give it time. No sunlight!
Room temps Watch activity.
Days to months



Enjoy!

So, what'd you get? What will
you do different next time?
Same?



Technical

Mead can be as technical as you make it

Or

As simple as you'd like it

There is no "Right Way", if you enjoy it – close enough

My Process

CLEAN EVERYTHING!

Sanitize all the things – control contamination
and weird tastes

Prep Pitch

Mix up yeast per instructions

Water is heated/warmed to a temp

Honey is heated/warmed to a temp

Mix about a pint of water and a few
tablespoons of honey, add yeast, stir, cover and
set aside in a warm spot to become active

Fermenter

Mix water and honey

Water is heated to about 110f

Honey is heated to about 85-90f

Water first, cool to 90ish f, then add honey

Blend with drywall mud mixer on a power drill

When ready, and yeast is ready – pitch it!

The Brew

Add 'Vodka' to air-lock, close it all up
Set it aside where it'll live for next few days. I
choose a temp stable area of about 68 to 70f.
Watch the air-lock, you'll likely see activity
within a few hours or so

Racking Off

A wine maker's term for "Save the good stuff and dump the gunk"

Use a siphon (Racking Cane) to remove what you want and whatever is left in the fermenter, called the Lees, is discarded

Secondary?

Taste your mead – is it ready?

Did it re-activate after racking?

Determine if it's ready for bottling or you'd like to do more

Clarify

Appearances matter, if you want to clarify, you can use several methods, even multiple

Time and settling: often good enough

Cold Crash: may accelerate things

Bentonite: VERY effective, but does change feel

Other fining agents

Back Sweeten

Careful! This is a way to make Bottle-Bombs. Leaving unconsumed glucose and active yeast in a sealed container. But carbonated is cool!

Bottle

Wine bottles, beer bottles, jars, corks, pop-tops, screw on lids or even water balloons. Whatever you like and are comfortable with.

Goal is seal it away from outside contamination. No need to refrigerate.

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References and further reading

<https://www.stormthecastle.com/mead/>

<https://byjus.com/biology/fermentation-anaerobic-respiration>

<https://www.batchmead.com/blogs/batch/mead-a-history>

Thank you

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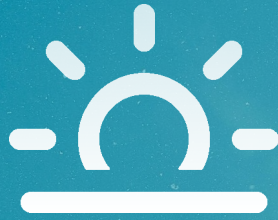
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Mead is the oldest alcohol in the world

The earliest discovery of a drink fermented from honey was in northern China in 6500 BC. This means that mead is older than the wheel! In Europe, mead traces have been found in ceramics from 2800-1800 BC including in Northern Scotland.

Mead, like any wine, can have delicate and complex flavors. Or, if the yeast was stressed while brewing or left to brew too long, can be a 'Rocket Fuel' tasting of kerosene and fusile alcohols. Bitter, sour and very rough. Maybe that's what the Vikings drank that made 'em crabby.



So, what is mead?

Mead is honey wine

Made using similar methods to wines, but instead of fruit juice, honey is used as the source of glucose

Can be light and fresh to heavy and stodgy, still or sparkling, Dry or Sweet – and everything in between

Mead is a mix of honey and water that's been allowed to ferment. Changing flavors and making alcohol

Different styles of mead are made by adding grains, herbs, heat (thermal and spice), spices, fruits or whatever else the brewer thinks will achieve their goals

There is no "Right Way" to make mead. So long as you don't poison anyone and folks like it, it's right

Left to brew too long, it is likely to eventually become a honey vinegar, if that's your goal – it's still right



Fermentation

Anaerobic



A metabolic process, yeasts and bacteria consume glucose as food and excrete Carbon Dioxide and Ethanol

Alcohol



Yes, as a wine and a fermentation product, mead contains alcohol. It's up to you to determine how much.

Honey and water mixed are a beautiful culture medium. You can grow all kinds of things! Many of them quite nasty if not downright dangerous.

Sanitation, cleanliness is important – but does not need to be “laboratory sterile” for you to be successful. Keep things clean and you should do well. If it smells or tastes yucky, well – it likely is.

The 3 Ingredients



Water

Clean, still
Warmed/heated for mixing
Source and details will affect
final product flavor



Honey

Will strongly affect flavors
Can even use 'bakers honey'
Higher glucose yields higher
alcohol content



Yeast

Anything from natural, wild, to
specific brewers to bread yeasts –
they'll all work
Yeast choice will affect alcohol
levels and sweetness

By definition, mead is made with honey. To make a viable must, honey must be diluted as raw honey has such a low moisture content, it inhibits much of anything growing. We typically use 3lbs of honey to a gallon of water. Honey is the primary flavor source

We add our yeast of choice to affect control over the final product's flavors and characters. Wine yeasts are good, Champaign yeasts will yield dryer mead. Bread yeasts are quite vulnerable to Ethanol levels and will typically yield a sweeter mead – but not always. And, if you're bold – you can leave the top open and go for wild yeasts. This can be dangerous – but also quite good

Simple Process



Mix it together

Warm water, add honey –
pitch yeast



Let it sit

Give it time. No sunlight!
Room temps Watch activity.
Days to months



Done

Done when you say it is
No activity? Time? Color?
Your choice



Enjoy!

So, what'd you get? What will
you do different next time?
Same?



Making mead can be as simple or as complicated as you choose to make it

There are literally hundreds, if not thousands of variations, additions, processes and methods that will affect flavors. You can even boil your honey first! Intentionally changing it's flavor

Like beekeeping, I suggest starting with the basics, see what you get, learn to control what you can and then modify and complicate as you choose.

Technical

Mead can be as technical as you make it

Or

As simple as you'd like it

There is no "Right Way", if you enjoy it – close enough

Learning the physiology of yeasts, the biochemistry of fermentation, others successes and failures may lead to insights on your process or desired outcomes. But, it's not needed. There's something magic in just 'mixing it up' and enjoying what you get. If you want to pursue a Maser Cup entry – well, you've some learning and time to spend.

I do suggest a hygrometer and a thermometer – just to measure and record the basics of Specific Gravity and to ensure you're not stressing or inhibiting your ferment.

My Process

CLEAN EVERYTHING!

Sanitize all the things – control contamination and weird tastes

This is simply the way I do it. With each batch I learn a bit more. Maybe even get a bit more complacent. That's a godly amount of my precious honey being added to water – worth it to me to make it good!

No need to fully sterilize, unless you want to. I like using a simple hot water & soap wash on all the things. Rinse well! If you discover you've got contamination or problems – getting more aggressive with sanitation, using sanitizers, rinses and maybe even sterilization will help. I find it's not all that needed. Simply cleanliness and being careful have done well for me – so far.

Prep Pitch

Mix up yeast per instructions
Water is heated/warmed to a temp
Honey is heated/warmed to a temp
Mix about a pint of water and a few
tablespoons of honey, add yeast, stir, cover and
set aside in a warm spot to become active

Using honey that's been 'cooked' will change the flavor profile of the honey. But, it is done and often quite successfully.

Do not overheat your pitch! Warm is good – hot will kill yeast before you have a chance to add it into your must. If it's not too hot to the touch, likely OK

Air-locks are very handy, both to prevent contamination and to see how active the ferment is. You can get the simple 'S' types or the more expensive 'Popper' types. Poppers hold more fluid, so don't need to be refilled as often. Even a hose into a jar of water works.

Fermenter

Mix water and honey

Water is heated to about 110f

Honey is heated to about 85-90f

Water first, cool to 90ish f, then add honey

Blend with drywall mud mixer on a power drill

When ready, and yeast is ready – pitch it!

I use food grade beer brewing buckets. They can be cleaned, they're safe and they're also large enough to allow a good 'head space' when mixing up 5 gallons of water and 15 lbs of honey. They also come with an air-lock port and a secure lid.

When I rack, I rack off into glass carboys. Not as big a volume and transparent so I can see better what's going on. A typical batch will have at least 2 rackings

The Brew

Add 'Vodka' to air-lock, close it all up
Set it aside where it'll live for next few days. I
choose a temp stable area of about 68 to 70f.
Watch the air-lock, you'll likely see activity
within a few hours or so

I like using Vodka in my air-locks, but you can also use tap water. Just know some of it will likely get back into your ferment. Using Vodka may prevent other spores or contamination from growing in your mead

Length of ferment will be determined by sugar concentration (SG), yeast characteristics, temperature and time. You also don't need to let it finish brewing if you want a sweeter mead

I watch until bubble rate drops to about every minute or three. Indicates an almost done, but still active ferment. I like dryer meads

Racking Off

A wine makers term for “Save the good stuff and dump the gunk”

Use a siphon (Racking Cane) to remove what you want and whatever is left in the fermenter, called the Lees, is discarded

As the ‘lees’ tend to settle to the bottom, avoid stirring things up! Use your cane/tube to siphon off the top majority of things and leave the layer of dead yeast and gunk in the fermenter.

Some will add spices and what-not to the batch at this time. Avoids the yeast playing too much havoc with your flavors

Secondary?

Taste your mead – is it ready?
Did it re-activate after racking?
Determine if it's ready for bottling or you'd like
to do more

As well as a time to add flavors or sacks of spices and herbs, this is where you give things more time to settle out. People tend to like clear mead better than cloudy ones. But, having a cloudy mead may well be a flavor you like.

Typically, once off the first Lees, the must will 'come alive' again and the air-lock will again be active, for awhile

This will not only prevent bottle bombs, but make for a dryer mead. Avoid stressing your yeast! This is when fusiles are made. Yuck

Clarify

Appearances matter, if you want to clarify, you can use several methods, even multiple

Time and settling: often good enough

Cold Crash: may accelerate things

Bentonite: VERY effective, but does change feel

Other fining agents

Once you've determined it's done, you may choose to clarify by adding a fining agent. Around here, the easiest to get and use is Cold. Just set it outside and avoid freezing

If you want to be more direct, try a bentonite slurry. But Bentonite does affect 'mouth feel' a bit. It also helps to make for a less cloudy mead.

Cold Crashing can accelerate settling and may even help stabilize (kill yeast) stopping the fermentation process. Maybe – depends on yeast, how cold and how long it was cold

Back Sweeten

Careful! This is a way to make Bottle-Bombs. Leaving unconsumed glucose and active yeast in a sealed container. But carbonated is cool!

This is a bit of a more advance technique, but can yield a very pleasant mead. If your mead tastes 'nasty', no amount of backsweetening will correct that – and you may not want to. If you don't stabilize your mead, backsweetening will re-activate the yeast and if there's too much available sugar, you can create bottle-bombs and a gloppy mess.

Bottling too soon, with a sweeter mead, that's not been effectively stabilized (sulfates, maybe a good idea), it can continue to ferment and make bottle-bombs even without backsweetening

Bottle

Wine bottles, beer bottles, jars, corks, pop-tops, screw on lids or even water balloons. Whatever you like and are comfortable with.

Goal is seal it away from outside contamination. No need to refrigerate.

Again, using a racking cane, siphon off what you want into bottles and discard the remaining lees. If sweeter or backsweetening, you may choose to use corks instead of caps. Corks may 'push out' while caps hold pressure until things pop

One of the specialty tools I use is a Hygrometer. It is used to measure specific gravity. Recording your starting SG and comparing it to your final SG, you can calculate your Alcohol By Volume (ABV) – if you're after less alcohol and a sweeter mead, you can choose to cut short your ferment at your desired SG. Be sure to stabilize or it'll continue to ferment after bottling!

Ask me about "freeze distilling"

<https://ncbees.org>



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References and further reading

<https://www.stormthecastle.com/mead/>

<https://byjus.com/biology/fermentation-anaerobic-respiration>

<https://www.batchmead.com/blogs/batch/mead-a-history>

This was a VERY Basic intro – maybe not even quite a ‘getting started’. Mead Making can be as complex or as simple as you’d like. However, trying to ferment to a specific target, flavor profile or ABV adds to your requirements, skill level requirements and complexity of process.

Many just make a batch and if it’s good, enjoy it. Do that again – until you learn to control all the variables, it’s not likely to come out exactly the same. Probably still good! Just different. Skill comes with learning to be consistent

Enjoy and be safe!



Thank you

Questions, comments and hopefully good answer time!