Fermented drinks - Meads

Alice (Lilou) M-D

https://wiki.lowtechlab.org/wiki/Boissons_ferment%C3%A9es_-_Hydromels/en

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Difficulté **Très facile**

Durée **15 minute(s)**

Coût **3 EUR (€)**

Description

A range of recipes for simple, healthy, no-waste fermented drinks made with honey and spontaneous fermentation (naturally occurring yeast).

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Introduction

Fermented foods are foods that have been transformed by micro-organisms: bacteria, yeasts, fungi. This process often takes place without oxygen, in an anaerobic environment. Microbes normally multiply in the presence of oxygen. But when they are deprived of it, they fight back by producing molecules to gain an advantage over competing microbes: alcohol, lactic acid, acetic acid. This gives rise to various types of fermentation: lactic, alcoholic, acetic, etc. Although we sometimes tend to forget it, many everyday foods are in fact fermented: bread, cheese, yoghurt, sauerkraut, saucisson, wine, beer... The list goes on. And that's just as well, because **their effects are beneficial to health !** They aid digestion, help the intestines to function properly, are sources of vitamins and minerals, and boost the immune system...
As Virginie Geres reminds us with her website HappyBiote, *without micro-organisms we'd be dead*! Quite simply! We couldn't function without the billions of bacteria, yeasts and other (non-pathogenic) microbes that line our bodies. They carry out important tasks such as protecting us from aggression from other (pathogenic) microbes, allowing us to eat, to have a distinct smell from other people (and therefore making it easier to fall in love when we're not too dirty), they participate in our immune system... And in each of our cells is a microorganism that we have incorporated over the millennia: the mitochondrion, which enables cellular respiration! Watch this super video to find out more.
So, not only are microorganisms necessary for our survival, but by providing a wide diversity of them through a healthy and varied diet (in particular with foods rich in fibre -prebiotics- and microorganisms -probiotics-) *we improve our immune and mental health*. This is the antithesis of modern Western standards, which literally make people ill, not least because of a weak microbiota. For more information I recommend this report from Arte, or this one a little older on the same theme.

Many good reasons to eat or drink them regularly (careful not to make it your whole meal though !)
Here are several recipes for no-waste fermented drinks, made from natural honey, to try your hand at making these homemade sodas!
To find out more about fermentations, I invite you to look at, download and distribute the collection from the 2020 French summit on fermentations, which includes contributions from scientists, chefs and various recipes. You'll find it just below in the "Files" section of the tutorial.

Matériaux

- Honey (liquid or solid)
- Non-chlorinated water (aerated for a few hours)
- Aromatics of your choice (flowers, leaves, spices, syrups, etc.)

Outils

- Large glass jar
- Glass bottle with mechanical closure (lemonade type)
- Scales (optional)
- Soup spoon
- Cloth
- Strainer or fine sieve

Étape 1 - Hygiene rules

You don't have to work in a sterile field when it comes to fermentation, but it is crucial to be as clean as possible.
Work on a clean work surface (if necessary/possible sanitised with white vinegar or alcohol). Use clean utensils and containers, washed in hot water (or put in the dishwasher), handle with clean hands and wipe with a CLEAN cloth... of course.

Étape 2 - Fermentation stages

1st fermentation phase (F1): This fermentation phase is called **breathing** because it works aerobically (with oxygen), this is when the yeasts and bacteria multiply and develop flavours. Mix all the ingredients in a wide-mouth glass jar. Close the lid loosely or place a cloth over the top with a rubber band. Leave to ferment for 3-5 days in a warm place (around 20°C), stirring regularly. You'll know that the first phase is complete when you see the liquid simmer generously when you stir it.

2nd fermentation phase (F2): This phase is called **carbonation** because the aim is for the CO2 produced by the microorganisms to be forced back into the liquid (by pressure) and therefore make the liquid fizz. It is during this phase that the micro-organisms are anaerobic (without oxygen) and therefore produce acetic (vinegar-type acid) and/or alcoholic fermentation. When they consume the sugar in the drink, the micro-organisms produce this acid or alcohol and release CO2. **If you like the taste at the end of F1, you can drink it now**. Filter the liquid and pour it into a lemonade-type bottle, but it also works with plastic soda bottles. At the start of this second phase, the liquid should still be a little sweet. Fermentation will continue for a few more days, and the yeasts need food. If this is not the case, add more sugar. Open the bottle every day to degas and taste to see if the taste suits you.
This phase can last between **2 and 5 days**, depending on the taste and the level of bubbles you want. You can taste it from time to time.

- Too sweet: wait another two or three days.
- Not sparkling enough: add sugar and wait another day or two.
- Too vinegary: add more sugar and wait another day.

Lorsque le goût vous convient, vous pouvez déguster votre boisson pétillante fermentée à partir de fleurs! Vous pourrez la conserver quelques jours à température ambiante, avant qu'elle ne tourne au **vinaigre** (ce qui est délicieux aussi). Vous pouvez aussi la conserver plus longtemps au frigo, car cela ralentit le processus de fermentation.

Étape 3 - Recipe for light mead (low alcohol content)

Recipe adapted from Ferment'Nation and Atelier Cultures Paris (whose Instagram live video recipe is here)

Normally, the traditional proportions for producing mead are 300g of honey to 1L of water. The result is a fairly highly alcoholic and very sweet drink.

Here, the idea is to produce a fermented drink similar to lemonade, fresh and not very sweet. Depending on what you use to flavour your mead, you can make a medicinal mead (with aromatic and medicinal plants of your choice). There are several ways of flavouring mead.

- Brew the herbs hot before adding the honey (the honey is added when the liquid is lukewarm or cold so as not to kill the micro-organisms).
- Cold macerate by adding the elements directly to the jar after diluting the honey in the water.

Both options can be used for the same drink, depending on how easily the plant diffuses its flavour and active ingredients into the water. For example, ginger and sage can be brewed hot and then basil macerated.

Recipe:

- 100g honey (about 3-4 tablespoons) or up to 300g for the traditional version
- 1 litre dechlorinated water
- Aromatics of your choice

To release the chlorine from the tap water, leave it to air for a few hours. Then dissolve the honey in the water in the jar, stirring with a spoon. Add the herbs of your choice.

Fermentation F1, breathing : depending on your preference for the strength of the final mead flavour, you can do a very short breathing (leaving just a little air in the top of a closed jar) or a long one (leaving the jar covered with a cloth for 24 hours). F1 is launched in a few hours when you can see small bubbles forming on the aromatics and the walls of the jar.

Fermentation F2, carbonation: Once the bubbles have formed, you can transfer the liquid (leaving or not leaving the aromatics in) to a bottle or jar with a lemonade-type mechanical seal. Leave to ferment for a further 3-5 days, depending on the temperature, to form as many bubbles as you like. It's important to degas gently every day to avoid excessive pressure, which could cause the bottle to burst. You can take advantage of this time to taste a little and decide whether to leave to ferment a little longer (for more acidity and bubbles) or whether your mead is ready.
Conservation : Once the mead is to your liking, you can drink it and store it in the fridge for a few days. The fridge slows down the fermentation process without stopping it. If you take a long time to drink it, the acid taste may become very strong, but don't panic, it makes an excellent vinegar!

Notes et références

For more recipe inspiration and fermentation courses, follow ShiraBio, Ferment'Nation and explore the incredible website (and books) of Marie-Claire Frédéric, anthropologist and chef fascinated by fermentations from around the world: Ni cru ni cuit.

There are several facebook groups for fermentation enthusiasts, and I recommend these

- Home fermentation founded by Ferment'Nation
- Lacto-fermentation and natural preserves, focusing specifically on lacto-fermentation

If you're looking for reference books to learn the art of fermentation, Sébastien aka Ferment'Nation offers in this post from the Home Fermentation group an explained compilation of the best books he's tested. There are specific ones (on lacto-fermentation, cheeses) and general ones. Something to inspire you!

For a wealth of recipes, ferments and tools for fermenting at home, visit the website of Fairment, organisers of the Fermentation Summit: https://fairment.com

Other essential references can be found in the first few pages of the file attached to this tutorial.

If you would like to see more tutorials on fermentations, please take a look at:

- Lacto-fermented preserves
- Fermented foods - Fruit fermentations
- Fermented beverages - Homemade sodas
- Fermented drinks - Kefir, kombucha and vinegars
- Fermented drinks - Flower-based sodas
- Fermented foods - homemade animal milk products
- Fermented foods - vegetable milk kefir and vegan cheeses
- Fermented foods - sourdoughs and breads
- Fermented foods - Asian fermentations of cereals, pulses and variations
- Fermented foods - festival of sauces
- Fermented foods - alternatives to animal proteins