

Cultured Yoghurt & Cashew Cheese Workshop

Notes on Bacteria



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Introduction - In 2015 I ran couple of culturing yoghurt & cashew cheese workshops. I realized that not many people are aware about bacteria in our food, and in our gut. I have ready a few books and experimented with culturing foods using bacteria, and this is a short document about my thoughts on bacteria and on fermentation. I wanted to pass on information I have learnt about **safe fermentation** along with some basic information about bacteria and hope this assists someone out there to just give fermentation a try and see if you can unlock a scientist or a discoverer inside of you too.

Why to Ferment or Culture Foods one may ask, when fresh food is certainly the best way to eat. There are a few reasons: it's one of the few ways to preserve food; to introduce some positive bacteria into our diet; to introduce new flavors to our table; create variations to the same ingredient (think of soy products) or simply to help break down certain foods before eating them. And if we are asking this question, it is likely we are coming from a well-developed country where fresh food is readily available all year round, but up until recently this wasn't the case no matter where you lived on earth and fermentation was a very common practice around the world in most traditions.

These days we often do not eat the best way our bodies need. We eat lots of sweet or heavy foods, and over time, our digestive system start to get other types of bacteria - less friendly or more demanding to cope with misbalanced eating habit which creates a complex series of offences on our digestion system. This often leads to us unable to absorb a lot of nutrients due to the poor digestion, even though we think we eat well.

From what I have learnt and experienced myself poor digestion & bad eating habits can be due to many reasons, but at the end they are all emotional in their very nature. A common reason is probably due to not resolving stress in your life for a prolonged period. I know this is what it has been for me. This stress can be due to any underlying emotion that we are afraid to admit to our self and feel, some examples are feeling unloved, rejected, judged and using foods to numb ourselves down, "spoil" ourselves and give us instant feeling of satisfaction which we may be missing in our lives for very different reasons and often nothing to do with food or eating.

LAB bacteria, stands for Lacto Acid Bacteria, is an acid tolerant organism, is present almost on all surfaces of fresh fruits and vegetables. However, these days, we wax, and treat with chemicals our fruit and veg, as well as we cook a lot of it out and so we don't end up consuming enough of LAB, which we naturally would otherwise. (eg. You know how homegrown black grapes can have the white matt residue, like a dust, well that is a selection of all kids of Wild Yeast Bacteria, including LAB and friendlier strains of Candida) Fermented foods are a great way to start re-introducing loads of good bacteria back into our bodies. It is certainly not a cure and cannot help you stop eating bad foods. Only you can do that. But having the **functional food** filled with lactic acid, on the table is a great thing. You can also feed your friendly bacteria, the one in your gut, so they stay healthy and in return it will help you, with things like bananas, cauliflower, garlic, asparagus, leek and onion, kale and spinach.

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Fermentation occurs more often than we think it does. Think of all decomposition around us that happens. All of it involves bacteria and living organisms that break the matter down. Converting it into something else.

We also have in our bodies lots of bacteria. We will talk about what kind of bacteria later. Our own bodies produce lactic acid to digest food. LAB bacteria also produces lactic acid.

We may not realize but many common foods are fermented. Such as Cacao Beans, which makes chocolate taste the way it does, Coffee Beans, Green Tea ferments into Black Tea and so it goes on.

Why Ferment at Home, my answer is simple.

A) Most purchased foods, which are sold in supermarkets and have been fermented, have been **pasteurized** and are **no longer living**. So, most of the time you are not getting the organisms, nutrients or enzymes of the fermented foods, just the flavor.

B) You get to **control how fermented** you like the food. You can be **as gentle as you want** with getting used to the tastes of the fermented foods, by starting to eat almost raw ferments, not as cultured, and as you are growing to like it, allowing the ferments to go on for longer.

C) And you also get to **play a little scientist** at your own kitchen and experiment with far more variety of fermented foods than you can find retail. So, **variety** is another one.

What Cultures Use Fermentation? Food in many cultures is rather heavy, but I've noticed it is often accompanied with something fermented, I now think this is to assist the digestion and people in these countries must have understood that.

Germany - lots of meat but also lots of sauerkraut

Korea - lots of meat and lots of kimchi and other pickles

Mongolians - traditionally used fermenting of the foods for preserving and for cooking it via fermentation

French - again lots of meat & dairy but the cheese is cultured & of course there is a wine

Greek & Turkish - heavy on the meat but most often accompanied by yoghurt

Russians - preserved all of their food for winter via drying or fermentation, fermented bread, kvass, kombucha, kefir, sauerkraut, buttermilk, vegies

Japanese and Chinese - heavy on rice and fish, but use shoyu and tamari sauces, which aren't the same as we buy them elsewhere, and is totally filled with different types of bacteria; they also use a lot of miso and pickles

While I was thinking about the diet in these cultures I wondered how heavy and unhealthy some of the diets are and yet the human body still copes with the struggle, and if we changed our attitude to food and ate foods that assisted our wellbeing, instead of creating more work for our body to detoxify from every dinner or

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breakfast we ate, what would our life look like then? Would we be globally happier because we are healthier, would we have more energy to create, imagine, produce? What would life on the planet look like as a result? I think we would be happier and more creative, because I am certainly feeling the changes in my body since 2010 when I stopped consuming meat, alcohol & dairy. And I know that for me these changes have made me generally happier, content with my choices and freer.

Bacteria – few words

At these workshops we will mainly be working with **Wild Yeasts** and **Lacto bacteria** or **LAB** of **different strains**.

Lacto Acid Bacteria strain.

According to the Wikipedia **LAB** are at its core **Lactobacillus**, **Leuconostoc**, **Pediococcus**, **Lactococcus**, and **Streptococcus**, as well as the more peripheral **Aerococcus**, **Carnobacterium**, **Enterococcus**, **Oenococcus**, **Sporolactobacillus**, **Tetragenococcus**, **Vagococcus**, and **Weisella**; these belong to the order **Lactobacillales**.

Fermenting food with these friendly bacteria, which by the way is already present in different quantities and different places in our bodies, help us to digest the food we ingest, while they are at work extra enzymes are produced in the process all aiding our digestion and nutrient break down and absorption. And in this sense, bacteria works like an extra stomach, which helps us to really break down the food and digest as many nutrients as possible. Also, **LAB** kills the other pathogens or unwanted bacteria, by producing lactic acid and antimicrobial peptides. Unwanted bacteria which often over populates our gut, may be of certain strains of **Candida** or **E.Coli**, (as for peptides, this is going out of my comfort zone but I have looked up what peptide is, and it is a compound consisting of 1 or 2 amino acids chains)

LAB also starves bacteria which normally thrives on sugar we consume, since **LAB** is known to eat the available sugars very quickly and in return produce the lactic acid, which leaves **Candida** without food.

Fermenting generally involves bacteria eating the sugars and converting them into lactic acids. Leaving the food sourer as well as having less sugar left for the pathogens in our gut (if we have any) to feed on.

Side Effects

During initial introduction of fermented foods into your diet you may not notice anything different in the way you feel, or you may experience bloating, rash, breakouts, gas, sometimes even headaches or pains in the gut, these can all be symptoms of the bacteria fight within your digestive system. My suggestion is to lower your intake for a couple of days, or until your symptoms settle down and then slowly start to increase again. Side effects are normally due to detoxifying and due to the unfriendly bacteria dying off.

Appreciations and Credits

When making these recipes, I have been mainly inspired by the work of Miyoko Schinner, and many various blogs, where lots of information has been offered by enthusiasts whom I appreciate. Thank you