Safety Information

When making home fermented food and drink there is always a risk of spoilage. This usually occurs during the first or last stages of fermentation and can be thought of as the food having not built up its own immune system yet. When a ferment is in full swing and the food is flushed with beneficial cultures, it becomes much harder for harmful pathogens to set in. But this doesn’t mean it can’t happen. Therefore it is vital to remember that fermentation is a form of live ammo and must be treated with care at all times. If something looks or smells oddly, in an unexpected way, then it is safer to discard it and start again.

Below are some key safety points and procedures to follow:

* Always wash your hands with soap and hot water before preparing fermenting ingredients and equipment.
* Always sterilize your equipment with boiling water after cleaning it with soap and hot water. For extra safety, dry sterilized equipment in an oven at 160C.
* When possible, always use a backslopping technique from an established fermentation to inocule a new one. This will limit the exposure time to dangerous pathogens whilst a food is without competition from beneficial cultures.
* Always wash and remove dirt from ingredients before you begin the fermentation process. This means anything visual, if you are fermenting with wild cultures found on the ingredients then a light wash is enough, as any heavy scrubbing will remove microbes we need.
* The biggest threat of contamination is from the bacteria Clostridium botulinum. Whilst the bacteria itself doesn’t harm us, a toxin it produces is the most potent toxin known to man. However, Botulism grows under a limited range of conditions:
* It needs a source of protein for growth, a pH above 4.4, a salt concentration below 5-10%, a sugar concentration below 30%, and an oxygen concentration below 1%. Botulism is relatively tolerant to alcohol, and is not fully suppressed until alcohol content reaches 6% ABV. The main one here to note is the pH as this is most easily achieved. If a ferment, such as the Nettle Beer featured in lesson 9, doesn’t have a low enough pH, we can acidify it with vinegar or lemon juice in order to bring it into a safety range before fermentation has even begun.
* It takes Clostridium botulinum 3 days (under ideal conditions) to produce toxins. This is an ample window for us to either lower the pH of a ferment, increase salt levels or inoculate with yeast for alcoholic fermentation. If a ferment hasn’t reached the correct pH or alcohol percentage in this time then you may wish to start again.

If the correct measures are taken then the chance of spoilage or illness are reduced drastically, however accidents can happen and it is important not to take anything for granted. Fermentation is playing with microbes, and microorganisms are live ammo. For this reason, it is important to always take care and throw away anything you aren’t certain about. Any ferment that has even the slightest change of botulism (such as raw honey) should not be given to children or pregnant women.

Equipment List

For the recipes featured in this course you will need a range of basic equipment. There are a few specialist pieces I use which are optional, but I like to know exactly what is going on in my ferments so I’d suggest you purchase them too if you don’t already have them.

* A large mixing bowl
* A high speed blender
* Kilner screw top fermenting jars
* Demjijohns
* Airlocks
* Scales
* A kettle (or source of boiling water to sterilize)
* Chopping board
* Knife
* Paper towels
* String or elastic bands
* Sieve
* Muslin cloth
* Funnel
* Ph meter
* Alcohol meter
* Thermometer
* Straining bag

Further Reading

If you’re interested in fermentation then there are a few books you must read:

* The Noma Guide to Fermentation by Rene Redzepi and David Zilber
* Wildcrafted Fermentation by Pascal Bauder
* River Cottage Fermentation by Rachel de Thample
* Koji Alchemy by Jeremy Umansky and Rich Shih

Disclaimer

Fermentation can lead to food poisoning and illness. By taking part in this course you accept that we (Huw Richards and Sam Cooper) cannot be held accountable, under no circumstances, for such outcomes.

Please familiarise yourself with the safety information and always maintain a high level of food hygiene.