

Mycoreactor

The Mycoreactor design is included here for integrity within this chapter. Refer back to 4.1.1 for further details.

When I received my first order of pure cultures, I had to decide how to continue growing them further. There was a bunch of options. The liquid cultures came in syringes, as is custom for mushroom traders. That meant they could either be plated on agar or injected into fresh-brewed liquid culture containers. I chose to start with the second option and use only 1 ml of the 10 ml syringes to start fresh 500 ml jars. That meant the jars would take a few weeks to colonise fully but offered me the opportunity to back up the cultures in giant jars later on and grow them out on agar to check for purity and viability.

The idea of modifying canning jar lids for liquid cultures stems from the founder of the mycology web forum mycotopia.net – hippie3. (hippie3, 2001) The late hippie3 is not only highly regarded for his liquid culture tek, but other iconic protocols such as PF tek or BRF tek. (hippie3, 2006), (hippie3, 2005)

The web store pilzzucht-shop.de sells not only liquid culture syringes of 27 different genera – but also offers cultivation supplies. One of the devices they offer is the «Mycotainer». (pilzzucht-shop.de, 2018) This polypropylene tub features an unscrewable lid with a self-healing injection port and exchangeable «highly efficient» paper filter. (Witt, 2018) I recognised the injection port jar design from various community designs from shroomery.org. («Shroomery,» 1997 – 2021) Amateur mycologists use these medical injection ports made from Bromo-butyl. These readily available self-healing ports are far superior to the DIY contraptions made from Shoe Goo or other silicone products.

Further, Tyvek is used as a filter material. I iterated on these designs by exchanging the polypropylene through a fully recyclable glass jar and metal lid. I found a supplier that features a food-safe, BPA-free «Bioseal» on their jars. («UNiTWIST Gläser/Flaschen mit Deckeln - nach Form,» 2005 – 2021) These jars are highly reusable and recyclable at the end of their life cycle. After testing a friends Mycotainers, I saw several superiorities in my design. The propylene deteriorates over time. The lids warp and do not seal airtight in many cases. The Tyvek I replaced through micropore tape – readily available at any pharmacy. I punched