

Annex F.1

Laboratory Equipment Requirements for a Food Mycology Laboratory¹

A number of the items below are 'low technology', but the recommendations are guided by practical considerations of working in laboratories with profound infrastructural and maintenance problems. This equipment list is also guided by the dictat that more work is done when the convenience of executing standard procedures is maximised.

NB - Natural gas or bottled gas are not included in the list below as local availability can be poor, but this means of providing a flame, which is essential to microbiological bench work, is preferable to alcohol burners.

1.1 Glassware / Plasticware

- Bijou bottles
- McCartney bottles
- Caps for the above
- Fischer brand Duran-style bottles
 - 500ml
 - 250ml
 - 100ml
 - Replacement seals
- Plastic Petri dishes
- Disposable sterile graduated 1ml pipettes
- Glass pipettes
 - 1ml
 - 5ml
 - 10ml
- Nalgaware (polycarbonate) graduated cylinders
 - 1l
 - 500ml
 - 100ml
 - 25ml
- Microscope slides
- #2 cover glasses
- Haemocytometer
- Side-arm flask and filtering bungs
- 7cm Büchner funnel
- Conical funnels
- Glass Petri dishes

¹ Equipment list prepared by Dr. John 'Mick' Frank, Consultant Project Mycologist.

1.2 Miscellaneous

- #11 scalpel holder and blades
- Microbiological loop handle and loops
- Grease-proof paper
- Aluminium foil
- Stainless steel spatulas
- Alcohol burners
- Bunsen burners
- pH indicator papers
- pH buffer capsules [4.0, 7.0, 9.0]
- 7cm filter paper #1
- 15cm filter paper #1
- Merck aluminium-backed TLC plates [# 5553]
- 20x20cm TLC development tank
- Strong scissors
- Sterile stomacher bags
- Labelling pens
- Kim wipes

1.3 Equipment

- 'Precisa' three place electronic balance² (*or equivalent*)
- Two-place torsion balance
- Leitz teaching compound microscope³ (*or equivalent*)
- Dissecting microscope
- pH meter (with resin combination electrode)
- Pressure cooker
- Loughborough type still⁴ (4-8l/h)
- Deionizer (*e.g.* Vision 250)⁴
- Drying oven
- Stomacher (optional)

1.4 Reagents / Media constituents⁵

- Agar no.3
- Oxoid malt extract
- Sigma yeast extract
- Bacto peptone

² The 'Precisa' balance works on a different principle to conventional balances. Instead of a knife-edge, a post attached to the pan reclines into a standing magnetic field and I think it is more robust. However, where there is an unreliable electrical supply a backup is required, hence the torsion balance.

³ Money could be saved here because for mycology, oil immersion is seldom of use. However, if bacteriology is also contemplated, oil immersion is essential.

⁴ A system for collecting and utilising rain water by gravity feed should be investigated. This will prolong the life of deionising cartridges and the water still heater element and might even substitute for distilled water if filtered.

⁵ These materials will make all the standard mycological media such as MEA, CYA, DG18, OA, YES, CREA, G25N, SNA, SFA, BNM, AFPA, and 'Mick's Maintenance Medium' MMM.

- Beef extract
- Oxoid corn meal agar
- Glycine
- Glycerol
- Sucrose
- Glucose
- Oatmeal
- Ferric ammonium citrate
- NH_4NO_3
- KH_2PO_4
- K_2HPO_4
- $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
- ZnSO_4
- FeSO_4
- CuSO_4
- MnSO_4
- K_2MoO_4
- NaNO_3
- KNO_3
- KCl
- NaCl
- $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
- Dichloran
- Creatine.1H₂O
- Cotton blue
- Lactic acid
- Bromocresol purple
- Rose bengal
- Methylene blue
- Chloramphenicol
- 95% methylated spirit
- H_2SO_4
- HCl
- NaOH