

Media Sampling Guide

The identification of molds relies heavily on the ability to identify their methods of spore production. One of the most common ways of accomplishing this is to grow mold in a nutrient defined “media”. Media is the substance mold is grown on in the lab. When a mold is grown in a nutrient defined media the mold will typically sporulate, which is a necessary prerequisite for morphological identifications. Molds are living, dynamic organisms and have differing nutritional requirements that are ascribable to the particular mold’s life-style. Some molds prefer habitats with low water potential, while others thrive in very wet conditions. All molds require a carbon source for energy, nitrogen for protein and vitamin synthesis, and several minerals for metabolism. Choosing an appropriate nutrient defined media is important when verifying the presence of a specific mold or groups of mold. If an inappropriate media is chosen, results may not reflect the presence of certain signature molds. The following are recommended guidelines for choosing an appropriate media for differing environmental conditions.

	DG18	MEA	Cellulose	SGA	CMA
Acremonium	3	2	1	3	2
Alternaria	1	2	2	3	3
Aspergillus	1	2	2	3	3
Basidiomycetes	3	1	3	3	2
Botrytis	3	1	2	3	3
Chaetomium	3	2	1	3	3
Chrysosporium	3	1	3	2	3
Cladosporium	2	1	2	3	3
Curvularia	3	2	1	3	3
Dreschlera/Bipolaris	3	2	1	3	2
Emericella	1	2	2	3	3
Epicoccum	3	2	1	3	3
Eurotium	1	2	3	3	2
Fusarium	1	1	3	3	3
Graphium	3	2	1	3	3
Microsporum	3	2	3	1	2
Mucor	3	1	2	2	2
Paecilomyces	3	1	2	2	2
Penicillium	1	1	3	3	3
Rhizopus	3	1	2	3	2
Rhizomucor	3	1	2	3	2
Serpula(=Poria)	3	1	3	3	3
Scopulariopsis	3	2	1	2	2
Stachybotrys	3	2	1	3	2
Trichoderma	3	2	1	3	3
Trichophyton	3	2	3	1	2
Wallemia	1	3	1	3	2

- 1) recommended
- 2) suitable
- 3) marginal

Malt Extract Agar (MEA)

Malt extract agar is a versatile all-purpose medium that selects for a variety of molds. A plethora of indoor molds are typically found associated with moist conditions. Moisture loving molds can be found throughout the indoor environment inhabiting a melange of substrata. They are found on food products, particularly grains and cereals, fruits, animal products, clothing, shoes, and building materials. Malt extract agar has a medium to high water activity that can be reduced by the addition of copious amounts of sugar. This is beneficial asset of MEA when selecting for medium to high water potential loving molds. When general sampling occurs in water intruded or minimally moist environments, the use of MEA is appropriate.

Dichloran 18% Glycerol Agar (DG18)

Dichloran 18% Glycerol Agar is an all-purpose medium selective for xerophilic molds, or molds that are only marginally xerophilic. Xerophilic molds are those that have a tolerance for, or an absolute requirement for substrata that have very low water potentials. Many molds that inhabit carpets, or other similar amplifiers are fond of DG18. Components of this media prevent colonies from overgrowing each other, as the media restricts colony diameter. Dichloran 18% Glycerol Agar is very effective in slowing growth of Mucoraceous fungi, and hindering bacterial growth. When sampling for many *Penicillium* and *Aspergillus* molds, use of DG18 is recommended.

Cellulose Agar (CA)

Cellulose is a primary component of wood, and is one of the most prevalent biological compounds on the planet. Cellulose provides an energy source for fungi that utilize it, and these fungi are termed cellulolytic. Molds that grow on sheetrock, stairs, baseboards, cabinets, and structural timbers are selected for when utilizing cellulose agar. Many lumber molds will grow on CA, as well as *Stachybotrys*, and other “black’ molds.

Sabouraud Glucose Agar (SGA)

Sabouraud Glucose Agar is a media that is rich in protein and sugar. Sabouraud Glucose Agar is recommended for use when Dermatophytes are the suspected biological agents. Interior environments that contain many people in close proximity, or many interior pets will yield better results if SGA is utilized.

Corn Meal Agar (CMA)

Corn Meal Agar contains moderate amounts of easily digestible carbohydrates. It is a decent media for the detection of Dermatophytes and some cellulolytic fungi. It is not as commonly used as cellulose agar in many IAQ situations, but may be beneficial as a duplicate plate for viable sampling.

LEGAL DISCLAIMER:

EVERY EFFORT HAS BEEN MADE TO ENSURE THE ACCURACY OF THE FEATURES AND TECHNIQUES PRESENTED IN THIS PUBLICATION. HOWEVER, FORENSIC ANALYTICAL ACCEPTS NO RESPONSIBILITY, AND OFFERS NO WARRANTY WHETHER EXPRESSED OR IMPLIED, FOR THE ACCURACY OF THIS PUBLICATION. THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. FORENSIC ANALYTICAL MAKES NO WARRANTY OF ANY KIND IN REGARD TO THE CONTENTS OF THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY QUALITY OR FITNESS FOR ANY PARTICULAR PURPOSE. FORENSIC ANALYTICAL SHALL NOT BE LIABLE FOR ERRORS CONTAINED IN IT OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE OR USE OF THIS DOCUMENT.