Fungal infections have become increasingly more common, especially in the setting of immunocompromised patients (1, 5, 6). In order to correctly diagnose and appropriately treat these infections, it is imperative first that the etiologic agent be grown and isolated on culture; only after that can the organism be identified and the most proper treatment be ensured. It is therefore essential that effective media, selective for fungi, be utilized for all fungal cultures (3, 7, 8, 10). The battery of primary media in many labs routinely includes the following: (i) one medium containing no antimicrobial agents, (ii) one medium containing an antibiotic(s) (commonly chloramphenicol and/or gentamicin) to prevent the growth of bacteria, (iii) one medium containing an antibiotic and additionally cycloheximide to inhibit the growth of rapidly growing fungi that may be saprobiotic and able to overgrow a slower growing pathogenic fungus, and (iv) an enriched medium, when a fastidious thermally dimorphic fungus is a possibility, to ensure its growth (4, 11).

Sabouraud dextrose agar (SDA), the original formulation or the Emmons modification, without any antibiotic has historically been used as the standard medium for the primary isolation of fungus and is still widely used (2, 7, 8). Inhibitory mold agar (IMA) is an enriched medium containing chloramphenicol (with some formulations containing gentamicin) and, in recent years, has become more commonly used as a major primary medium. It supports the growth of a wide range of fungi and, due to its antibiotic content, may inhibit bacterial growth more effectively than does Emmons SDA. As cost containment has become a key issue, many laboratories today are attempting to responsibly reduce the types of agar used in their primary fungal medium battery. It is not unusual for a laboratory to rely solely on SDA as its main cycloheximide-free medium or to include both SDA and IMA in their primary battery. The purpose of this study was to compare Emmons SDA to IMA and determine the more effective primary medium.

Clinical specimens submitted for fungal cultures in our institution over a 3-year period were included in this study. Specimens were cultured from various sites (respiratory, urine, genital, skin, nails, wound, tissue, cerebrospinal fluid [CSF], blood). The specimens were inoculated onto IMA, Emmons SDA, and Mycosel agar (Becton Dickinson, Cockeysville, MD). The cultures were incubated at 30°C for a maximum of 4 weeks. Fungal colonies on each agar were semiquantitatively assessed and recorded as no growth, sparse, few, moderate, or many. Cultures that yielded sparse growth on one medium and no growth on the remaining media were excluded from the study due to possibility of random sampling error. Mycosel, which contains chloramphenicol and cycloheximide, was excluded from this comparative analysis, as its function is different and it would be required regardless of whether SDA or IMA was the other medium utilized. All isolates were subsequently identified, and the data were tabulated and categorized according to the type of fungus grown. Data were analyzed using Excel and SPSS 11.0, and statistical analysis was performed using a Fisher exact t test.

A total of 840 fungal isolates were recovered and identified, representing 49 fungal species. Of those 840, 69.3% grew on both IMA and SDA, 24.9% grew only on IMA; and 5.8% grew only on SDA, showing that IMA is superior (P = 0.003).
creased recovery of these organisms. Too few cultures grew thermally dimorphic fungi to determine a medium preference for this category.

In comparing IMA to SDA as the routine cycloheximide-free medium for the primary isolation of fungi, IMA is superior to SDA, as it will recover significantly more isolates than will SDA (P = 0.003). However, SDA continues to have a role in the laboratory’s regimen, as Nocardiia (a filamentous bacterium that may be screened for in the mycology laboratory) requires an antibiotic-free medium and grows well on SDA. Additionally, there are a relatively low but noticeable number of isolates of Rhodotorula spp. and hyaline hyphomycetes that may grow on SDA and not IMA.

The results of this study indicate that SDA should not be used without accompaniment by IMA or another proven supportive fungal medium.

**REFERENCES**