

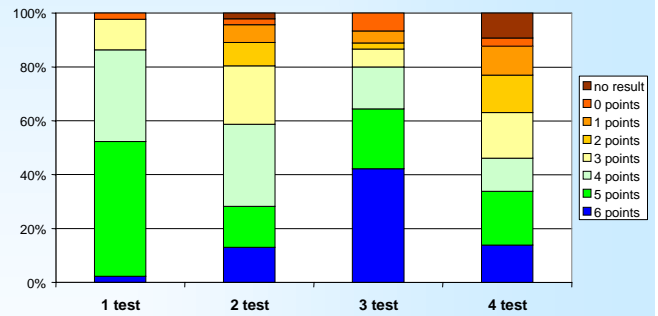
Inter-Laboratory Test – Identification of Food - and Indoor Fungi

T. Gabrio¹, I. Dill², G. Fischer³, L. Grün⁴, E. Hoekstra⁶, R. Rabe⁵, R. A. Samson⁶, H-P. Seidl¹, R. Szewzyk⁶, C. Trautmann², T. Warscheid⁹, U. Weidner¹

¹ Landesgesundheitsamt BW, Wiederholdstr. 15, D-70174 Stuttgart
² Umweltmykologie GbR, Berlin
³ Inst. f. Hyg. u. Umweltmed. – Klinikum; Aachen
⁴ eco-Luftqualität +Raumklima, Köln
⁵ Labor Dr. Rabe HygieneConsult, Essen
⁶ CBS, Post Box 89167, Utrecht
⁷ Lehrstuhl f. Mikrobiologie, Klinik u. Poliklinik f. Dermatologie u. Allergologie TU München
⁸ Umweltbundesamt; Berlin
⁹ MPA-Bremen

In cooperation with the Federal Environmental Agency the Baden Württemberg State Health Office (LGA) has so far carried out the four inter-laboratory tests for the 'Identification of Indoor Fungi.' For each test, six strains of fungi relevant to indoor environments were sent to the participating laboratories. Prior to the test the pure cultures were checked for purity and expression of typical morphological characteristics by eight reference laboratories. The prerequisite to use a strain in the inter-laboratory test was that all reference laboratories had correctly identified the species. Internal quality control measures to guarantee the purity and identity of the strains has proven to be very important before dispatching the cultures. The participating laboratories must provide a signed certificate assuring that they have done the inter-laboratory test autonomously, without assistance of other laboratories, institutes or external staff. In addition, the Labs needed written permission by Federal Government according to a German law (Infektionsschutzgesetz, §44, 20. Juli 2000) to handle pathogenic microorganisms. To take part successfully, the participants had to identify correctly 4 out of 6 strains up to the species level. In the first inter-laboratory test 44 laboratories participated, 86,4% met the requirements; in the second test 46 labs took part, 58,7% met the requirements; in the third test there were 45 participants and 80% met the requirements; and in the fourth test 65 labs took part, 46,2% met the requirements. Generally the most difficult genera of fungi for identification were *Penicillium digitatum*, *Penicillium expansum* and *Penicillium olsonii*. In total, 109 different laboratories participated, predominantly from Germany. Inter-laboratory tests increase the quality of the analysis in the participating laboratories. This was already evident from the first few tests for identification of indoor fungi. The statistical evaluation showed that laboratories which took part more than once in the tests were more successful than new comers. It is planned to carry out the inter-laboratory tests on an international scheme. Below the pictures, the name of the identified species and the percentage of laboratories which correctly identified this species are given.

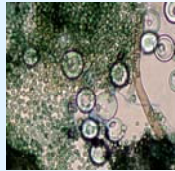
Inter-laboratory Test 1-4 successful participation expressed as percentage



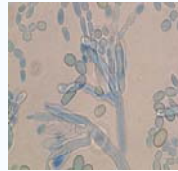
1 Inter-Laboratory Test



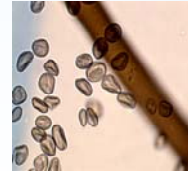
Aspergillus penicillioides (70%)



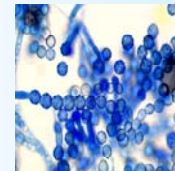
Emericella nidulans (84%)



Penicillium digitatum (7%)



Rhizopus stolonifer (89%)

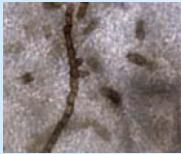


Scopulariopsis brevicaulis (84%)

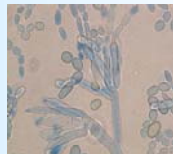


Wallemia sebi (91%)

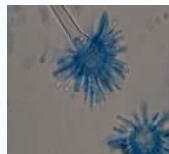
2 Inter-Laboratory Test



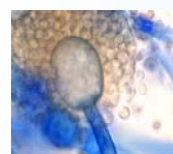
Aureobasidium pullulans (87%)



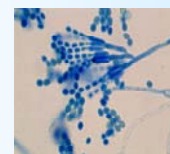
Penicillium digitatum (20%)



Aspergillus versicolor (58%)



Mucor racemosus (87%)

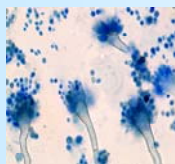


Penicillium chrysogenum (67%)



Eurotium amstelodami (90%)

3 Inter-Laboratory Test



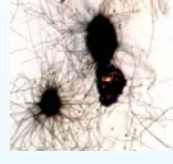
Aspergillus fumigatus (90%)



Cladosporium cladosporioides (79%)



Syncephalastrum racemosum (90%)



Chaetomium globosum (83%)

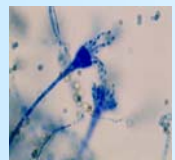


Acremonium murorum (50%)

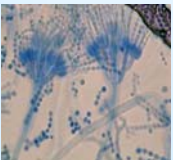


Stachybotrys chartarum (83%)

4 Inter-Laboratory Test



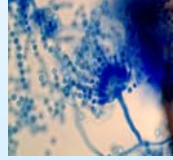
Aspergillus restrictus (39%)



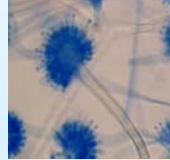
Penicillium olsonii (49%)



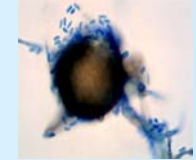
Penicillium expansum (49%)



Aspergillus candidus (92%)

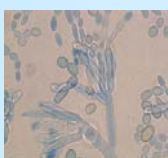


Aspergillus ustus (58%)

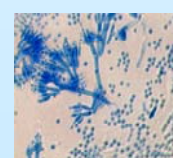


Phoma glomerata (68%)

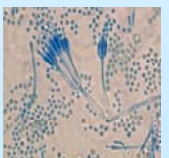
Further notifications instead of *Penicillium digitatum* in the 1 Inter-Laboratory Test



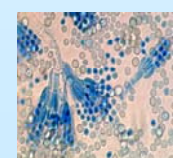
Penicillium digitatum



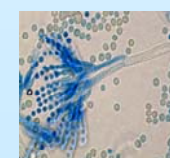
Penicillium brevicompactum



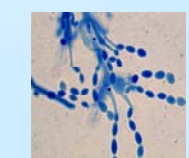
Penicillium citrinum



Penicillium roqueforti



Penicillium expansum



Paecilomyces variotii