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Potted plants may pose risk of aspergillosis in BMT patients

MINNEAPOLIS—“Potted plants may be a significant source of airborne *Aspergillus fumigatus* spores and elimination of these ‘fungal reservoirs’ in selected treatment areas is prudent for patient protection,” noted Andrew Streifel of the Department of Environmental Health and Safety, University of Minnesota, in an interview with *Mycology Observer*. Because of their potential risks, he added, potted plants are no longer permitted in the Bone Marrow Transplant Unit (BMT) of the University’s Medical Center.

Mr Streifel pointed out that in a controlled environment with a very low ambient spore content, 73% of the air samples of potted plants taken from hospital rooms aerosolized *A. fumigatus*. In contrast, a positive count was seen in 25% of the control samples.

Describing the procedure, Mr Streifel said that plants were evaluated in a HEPA-clean room, providing a 99.97% efficiency at removing particles of 0.3μ with greater than 400 air changes per hour. A high volume Cas-

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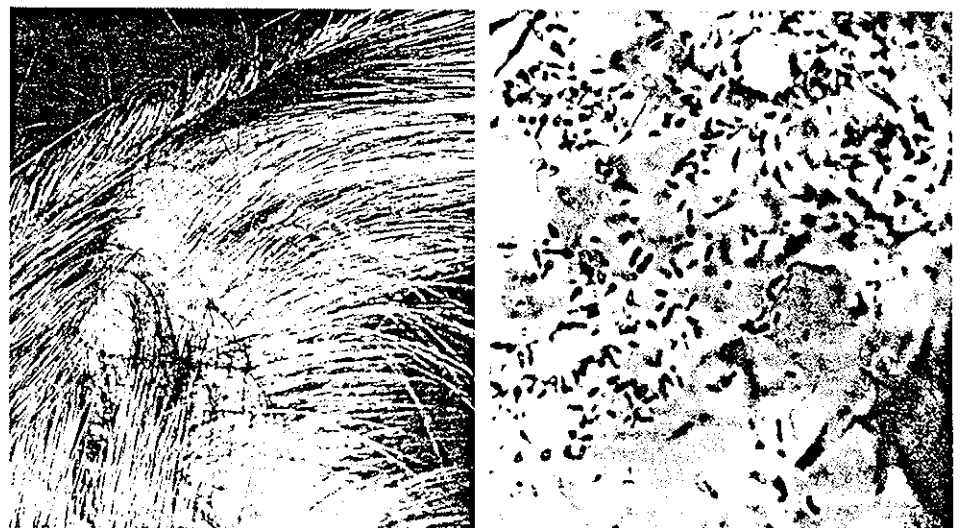
Also in this issue

Activating interferon may stimulate host defenses

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New diagnostic tests evaluated

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A) Seborrheic dermatitis of the scalp. B) *Pityrosporum ovale* in dandruff scale (lactophenol cotton blue). (Photos courtesy of Dr Dennis E. Babel, Henry Ford Hospital, Detroit.)

Study reveals association between *Pityrosporum* and seborrheic dermatitis

IXTAPA, MEXICO—An association between *Pityrosporum ovale* and seborrheic dermatitis has been shown in several therapeutic studies, according to Jan Faergemann, MD, who added that these trials demonstrated the beneficial effect of antifungal therapy.

At the Dermato-Therapeutic Update: International Symposium 1988 here, Dr Faergemann cited studies showing the effectiveness of ketoconazole 2% cream and ketoconazole 2% shampoo used for seborrheic dermatitis of the face and scalp.

He reported that in a double-blind placebo controlled study, Green et al used ketoconazole 2% cream and ketoconazole 2% shampoo on the face and scalp of 20 patients. (*Br J Dermatol*

116:217-221, 1987) The cream was applied twice daily and the shampoo twice weekly for four weeks, and the results were compared with controls receiving a placebo. Dr Green found that “they were significantly better than the placebo in the treatment of seborrheic dermatitis of the scalp and face.”

In another double-blind placebo controlled cross-over study of 20 patients cited by Dr Faergemann, Carr et al (*Br J Dermatol* 116:213-216, 1987) found that ketoconazole 2% shampoo, applied once daily for four weeks, was significantly better than placebo in the treatment of seborrheic dermatitis of the scalp.

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Potted plants may pose risk of aspergillosis in BMT patients

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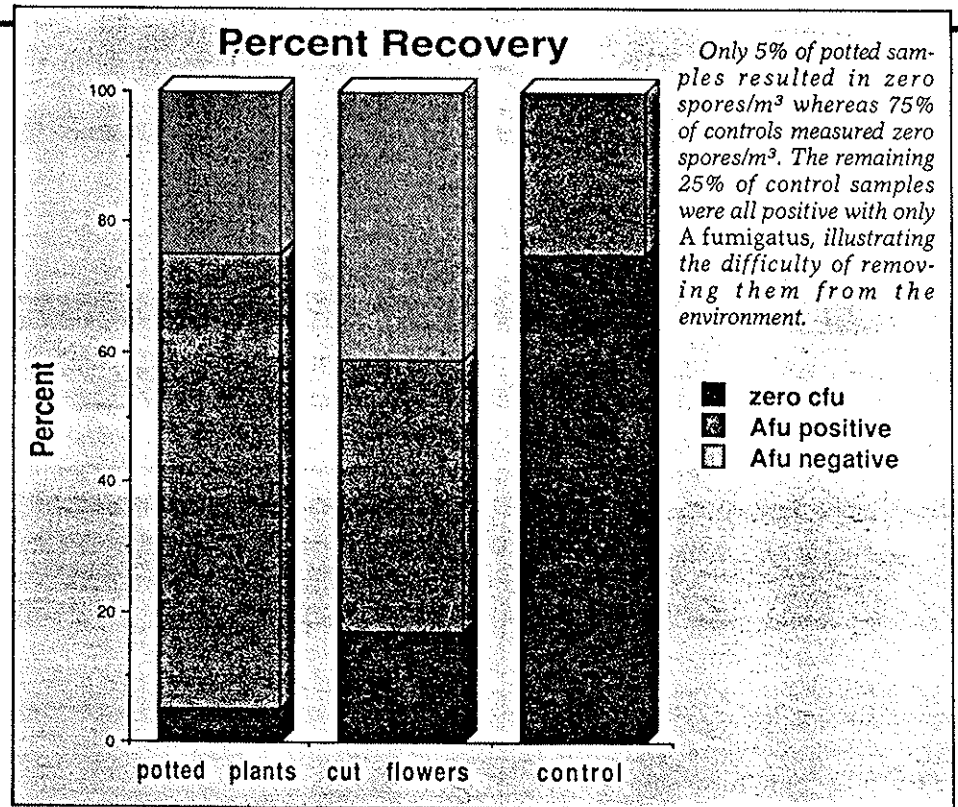
sella/London slit sampler connected to a sealed .2m³ box with a HEPA-filtered inlet was used to sample a 3.5 cubic meter of air.

Empty box samples were taken prior to plant sampling to establish the background spore level. A potted plant, formerly in a patient's room, was placed in the box. Air samples were taken and the box emptied and cleaned. Air was evacuated from the sealed box for five minutes to remove any residual spores, after which a control sample was taken before the box was unsealed for the next plant sample. Inhibitory mold agar samples were incubated at 37°C for 72 hours before evaluation.

Colony counts reported

Mr Streifel reported that samples obtained from the box with the potted plants yielded 1,354 colony forming units CFU from 44 samples (8.6 CFU/m³). In contrast, 27 CFU from 63 samples (0.12 CFU/m³) were obtained from the controls. The mean *A fumigatus* recoveries were 0.9 CFU/m³ for potted plants and 0.09 CFU/m³ from controls. The maximum *A fumigatus* recovered was 12 CFU/m³.

Comparing the average soil samples, the investigator said the average yield



of *A fumigatus* from soil samples of potted plants was 4.3 x 10⁴ CFU/g from 41% of the potted plants sampled. The percentages of samples with zero CFU/plate in potted plants was 5%, compared to 75% zero CFU/plate seen in controls.

Mr Streifel pointed out that the fungal content in the soil depends on how long the plant has been potted and the treatment of the soil prior to potting. Usually the longer a plant is potted, the higher the content of fungal spores.

The Minnesota investigator emphasized that because spores originate from soil where fungi can grow, a continuous production and liberation of spores is expected. "In the general patient room environment, the ambient *A fumigatus* spore level is not significantly changed (in a normal patient room there are between two and three air changes per hour). However, in our BMT rooms, there are greater than 15 air changes per hour." In a HEPA-bone marrow transplant environment, he continued, when no other sources of *A fumigatus* spores are present, a potted plant can double ambient *A fumigatus* spore levels. When other sources of this fungi are included in the background, such as dust, activity and clothing, the spore level can be calculated to increase by 20%.

Valerie Smith and Frank S. Rhame, MD, collaborated in this project. Ms Smith reported these findings at the 88th Annual Meeting of the American Society for Microbiology, Miami Beach.

