



S73d
Environmental surveillance of *Aspergillus fumigatus* in Dutch agricultural crops

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S7.3 Emergent theories on pathogenic fungal dispersal around the globe, September 23, 2022, 10:30 AM - 12:00 PM

Objectives: Azole-resistant *Aspergillus fumigatus* isolates from the environment hamper the treatment of patients suffering from *Aspergillus* diseases due to cross-resistance with agricultural azoles. Previous work has suggested *A. fumigatus* likely gains resistance through environmental azole exposure in so-called hotspots.

Methods: We investigated *A. fumigatus* resistance at multi-environmental sites including the compost, strawberry, and potatoes, where farmers used azole fungicides for crop protection.

Results: On average 105 *A. fumigatus* CFU/g was recovered of which roughly half were itraconazole and tebuconazole resistant. Similar tandem repeat-mediated resistance mechanisms were found in colonies cultured from these environmental sites as reported in clinical azole-resistant isolates.

Conclusions: Our results suggest that not only azole-containing plant-waste material but also other agricultural crops can be hotspots for resistance selection in *A. fumigatus* and underscores the need to further investigate transmission routes.

S74a
Vaccine-inducing lung resident CD4⁺ memory T cells are protective against *Cryptococcus gattii* infections

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S7.4 Pathogenesis and host defense, September 23, 2022, 10:30 AM - 12:00 PM

Cryptococcus gattii is a highly virulent fungal pathogen that can cause cryptococcosis in previously healthy individuals. It is not fully understood how innate and acquired immune responses cooperatively suppress *C. gattii* infection. Hitherto, we have reported the following findings, (1) Specific environment for exposure of dectin-1 and dectin-2 ligands in cryptococcal cells (PLOS ONE 2019, PMID 31398236), (2) CD11b-mediated immune recognition for *C. gattii* and capsule dependent immune