

Deadly flower power? Imported tulip bulbs spread anti-fungal resistance

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Tulip bulbs imported into Ireland from the Netherlands may be helping to spread resistance to vital antifungal medicines called Triazoles that treat potentially fatal fungal infections. That is according to research showing that the inter-country transfer of bulbs of Holland's iconic flowers may inadvertently have opened up a new transport route for a particularly nasty fungal pathogen called *Aspergillus fumigatus*.

Professor of Clinical Microbiology at Trinity College Dublin, Tom Rogers, led the research that has recently been published in the journal *Clinical Infectious Diseases*.

Among the headline findings are that samples taken from five out of six imported tulip-bulb packages cultured *A. fumigatus* resistant to Voriconazole—the leading antifungal therapy in Aspergillosis—while some isolates showed cross-resistance to other Triazole antifungals. Prior work had already confirmed that resistant fungi can also be found in the environment, so, once arrived and established, the threat may extend far beyond the life of the pretty flowers with which it has just been associated.

Professor Rogers said: "Aspergillosis is a major risk in our immunocompromised transplant patients. We were aware of reports from the Netherlands of this type of resistance and its possible link to the widespread use of Triazole antifungal drugs as fungicides in agriculture and floriculture which may be selecting it out in the environment. We have an ongoing surveillance programme, which has

shown that these resistant fungi are sometimes present in air and soil samples but what we we didn't think about until now is that they could be arriving here via tulip bulbs shipped from the Netherlands."

"Given that these fungi can persist for a long time, we are advising people not to plant tulip or narcissus bulbs in or near healthcare facilities or in the gardens of living quarters of patients who are in any way immunocompromised."

The next step in this research is to provide new insights into the way that environmental Triazole resistance is evolving and to prompt more debate on the implications of using medically vital Triazole antifungals as fungicides in agriculture and floriculture.

More information: Katie Dunne et al, Intercountry Transfer of Triazole-Resistant *Aspergillus fumigatus* on Plant Bulbs, *Clinical Infectious Diseases* (2017). [DOI: 10.1093/cid/cix257](https://doi.org/10.1093/cid/cix257)

Provided by Trinity College Dublin

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